DfT Ref : TWA/25/APP/01

Document Ref: CD27-01 APP-W4-01

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

Craig Shipley of

AtkinsRéalis

In respect of Transport Modelling

On behalf of Cambridgeshire County Council

10th November 2026

Planning Inspectorate Reference: DPI/E0535/25/7

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1. INTRODUCTION

1.1 Cambridgeshire County Council (CCC) is applying to the Secretary of State (SoS) for Transport for a Transport and Works Act Order (TWAO) to authorise the construction, operation and maintenance of a guided busway to the South East of Cambridge between a proposed Travel Hub adjacent to the A11 and the southern end of Francis Crick Avenue. The busway is referred to as the Cambridge South East Transport Phase 2 (CSET2), hereafter referred to as "the Scheme".

1.2 The objectives of the Scheme are as set out in the Outline Business Case Strategic Dimension Refresh **[CD1-20],** namely:

1) Objective 1 - Improve connectivity to employment sites in South East Cambridge and central Cambridge

2) Objective 2 - Support the continued growth of Cambridge and South Cambridge's economy

3) Objective 3- Improve road safety for all users of the A1307 corridor

4) Objective 4 - Relieve congestion and improve air quality in South East Cambridge

5) Objective 5 - Improve active travel infrastructure and public transport provision in South East Cambridge

1.3 Qualifications and Experience

1.3.1 My name is Craig Shipley. I am a Technical Director and Professional Head in AtkinsRéalis for whom I have worked since 2000. AtkinsRéalis has one of the largest Transport Planning consultancies in the UK.

1.3.2 I have a BEng Hons in Civil Engineering from Nottingham Trent University, am a Chartered Fellow of the Institute of Logistics and Transportation and have thirty-seven years' experience of transport planning and appraisal in the UK. For almost all of this period of time I have specialised in transport modelling, forecasting and appraisal of transport schemes in England. Studies I have worked on include:

1) A2 Bean and Ebbsfleet Study;

2) M2 Junction 5 Study;

3) M1 Junction 28 – 31 Managed Motorways Study;

4) A21 Tonbridge to Pembury;

5) M6/M54 Link Road Study;

6) Regional Transport Models;

7) Stafford Growth Point Transport Model; and

8) Telford Strategic Transport Model.

1.4 Context of my Evidence

1.4.1 I have been involved with the traffic modelling of the Scheme, since November 2025.

1.4.2 My evidence covers the strategic and local transport modelling of the Scheme, the items outlined in section 1.4 below and responses specifically address these topics of objection raised in Statements of Case (SoC), Objections and Representations.

1.5 Scope of Evidence

1.5.1 The purpose of my evidence is to inform the Inquiry as to the strategic and local junction transport modelling undertaken to assess the Scheme and the strategic impact it is forecast to have on traffic and public transport.

1.5.2 My evidence is structured as follows:

1) Section 2 presents the main issues for the Inspectors relevant to my evidence including:
   (a) The Strategic Model Assessment
   (b) Strategic impacts
   (c) Sensitivity tests
   (d) Localised transport impacts of the Scheme
2) Section 3 presents the key stakeholder engagement relevant to my evidence;
3) Section 4 presents my responses to specific objections and representations relevant to my evidence;
4) Section 5 presents my conclusion.

1.5.3 Table 1 sets out the Statement of Matters dated 19 October relevant to my evidence and identifies where these matters are addressed in my Proof of Evidence.

Table 1 Coverage of matters in this Proof of Evidence as set out in the Statement of Matters dated 19 October

	Statement of Matters dated 19 October Text	**Coverage through Proof of Evidence**	**Coverage through Proofs of Evidence of others**
1	The aims and objectives of, and the need for, the Scheme.	Section 2 of this Proof summarises the transport modelling undertaken to support the economic assessment of the Scheme and summarises the model outputs that are relevant to the objectives of the Scheme. Section 5 of this proof summarises how the Scheme performs against these objectives, in terms of the transport modelling.	Sections 1 and 5 of Ms Diamant's Proof of Evidence **[CD27-01 APP-W3-01]**

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 summarise the transport modelling undertaken with regards to the On Road Option (para 2.9.17).	Section 6 of Ms Diamant's Proof of Evidence **[CD27-01 APP-W3-01]**

1.6 Summary of Evidence

1.6.1 My evidence explains the transport models and approaches used to assess the proposed Scheme in terms of forecast demand and operational impacts. This has shown that the Scheme will increase bus patronage, lower the level of total traffic along the A1307 and reduce the amount of vehicle kilometers across the study area. The Scheme is also forecast to reduce bus travel time between the A11/A1307 interchange through to Drummer St Bus Station, in the AM and PM peaks by between 10 and 22 minutes in the future forecast years.

1.6.2 I explain how sensitivity tests have been undertaken to understand the impacts on the Scheme to changes in land uses, and how Covid19 and updated Large Goods Vehicle (LGV) and Heavy Goods Vehicle (HGV) forecasts have been assessed. In addition, the 'on-road' alternative, brought forward by Smarter Cambridge Transport, and more recently adopted by Cambridge Past Present and Future (CPPF) and Better Ways for Busways (BW4B), has also been modelled. This analysis forecasts that the on-road alternative would perform to a lower level than the Scheme in terms of bus patronage, vehicle kilometres, bus travel time between the A11/A1307 interchange through to Drummer St Bus Station in the AM and PM peak and vehicle journey times along the A1307 between the A11/A1307 junction to Addenbrookes Roundabout.

1.6.3 Detailed local junction modelling of the A1307/Travel Hub access junction, the A11/A1307 'Fourwentways' grade-separated junction and the minor road busway crossing location on Hinton Way have forecast that these junctions will operate within capacity with the Scheme in place.

1.6.4 Overall, the modelling and analysis undertaken demonstrates that the proposed Scheme supports the Scheme Objectives outlined in the Strategic Dimension Refresh **[CD1-20, page 78]**.

2. MAIN ISSUES FOR THE INSPECTOR RELEVANT TO MY EVIDENCE

2.1 Introduction

2.1.1 The purpose and need to undertake transport modelling, in the context of scheme assessment, is outlined in the Transport Analysis Guidance (TAG)– Guidance for the Senior Responsible Officer **[CD13-16, page 16]**, which states the following:

> *The consequences of transport interventions providing solutions to more severe transport problems will often be particularly widespread and complex. Changing transport conditions will affect the decisions of individuals both directly and indirectly. The extent to which different modes of transport are used is liable to change over time and changes to transport provision also may affect the distribution of land use in some cases. Models are the tools that attempt to simulate these complex interactions, to an extent that they have the appropriate level of sophistication compared to the scope of the intervention and its impacts (are **proportionate)** and that they provide robust and evidence-based foundations for decision-makers (are **fitfor-purpose)**.*

2.1.2 This section summarises the development of the transport models used for assessing the Scheme. This includes the structure of the models, their calibration and validation, forecast

assumptions, strategic impacts and sensitivity tests undertaken. Local Operation modelling has also been undertaken to determine the impact of the Scheme on the local highway network.

2.2 Description of the Strategic Models

2.2.1 The assessment of the transport impacts of the Scheme, for the Outline Business Case undertaken in 2022, has applied the F Series version of the Cambridge Sub Regional Transport (v2) (CSRM2) model **[CD12-07.01, CD12-07.02, CD12-07.03],** which was the only appropriate platform, in line with TAG, available at that time.

2.2.2 The F series version was developed in 2020-2021 and updated the CSRM2 to include improvements to the level of detail around the Scheme and added a 2019 Present Year Validation (PYV) to extend the life of the model, as outlined in the F-Series Highway Local Model Validation Report **[CD12-07.02, page 10].**

2.2.3 This model has been developed using a highway assignment model (HAM) implemented in the SATURN software, a Transport Demand Model (TDM), and a PT-Walk-Cycle assignment submodel, both implemented in MEPLAN. SATURN is an industry respected assignment modelling tool used widely for the assessment of schemes by both central and local government bodies whilst MEPLAN was developed by Marcial Echenique and Partners as a bespoke Demand Modelling Package and in the past has been used by the UK Department of Transport and University of Cambridge.

2.2.4 As noted in CSRM2 F series Transport Demand and Public Transport Model Development and Validation Report **[CD12-07.01, page 47],** travel times and generalised costs of public transport trips have been included in the model assignments and demand model, namely access (e.g. walk or cycle), wait, in vehicle, interchange times and fares. Time costs are weighted as outlined in CSRM2 F-Series Transport Demand and Public Transport Model Development and Validation Report **[CD12-07.01, page 92].** Weightings of time are used to distinguish the time spent accessing and waiting for public transport from the other journey stages when constructing the generalised cost of travel on which the travellers' choices are based. They also represent the general reluctance of people to walk long distances or wait for public transport due to the perceived time required that may not be the same as actual time.

2.2.5 In 2025 a new transport model, namely the Cambridge and Peterborough Combined Authority Model (CaPCAM), was made available to the Authority. This has a 2023 base year and the model, and its forecasts, have been undergoing testing throughout 2025. Only in the summer of 2026 has Cambridgeshire begun to use the model for live projects and it is still subject to review, with no assessments using the CAPCAM model in the Greater Cambridge Area published at the time of writing this proof of evidence. I understand that the emerging Greater Cambridge Transport Strategy will use some analysis from this model later this year. However, before CaPCAM could be used to test the Scheme, local model calibration and testing of around 3-6 months, would be required.

2.3 Model Base Year

2.3.1 The F Series version of the CSRM2 model represents a November 2015 Base year, however, as noted above, this updated model also added a 2019 Present Year Validation (PYV) against observed 2019 count data to extend the life of the model. In addition, a proportionate approach to assess the sensitivity of the Scheme against the impacts of Covid 19, outlined in Section 2.9 of my document and in line with TAG guidance **[CD13-09, pages 52-56]**, has also been undertaken.

2.4 Modelled Time Periods

2.4.1 The strategic modelled time periods represent the following:

1) AM Peak Hour from 08:00 to 09:00

2) Average Interpeak hour between 10:00 to 16:00

3) PM Peak Hour from 17:00 to 18:00

2.5 Journey Purposes and Transport Modes

2.5.1 The main modes of travel defined in the demand model include:

1) Car

2) Park and Ride

3) Bus

4) Rail

5) Guided Bus

6) Walk and Cycle

2.5.2 For the CSRM2 highway model, the journey purposes included are as follows:

1) Car - Home Based Work – Low Income

2) Car - Home Based Work – Medium Income

3) Car - Home Based Work – High Income

4) Car – Education

5) Car Employers Business

6) Car – Other Low Income

7) Car – Other Low Income

8) Car – Other Low Income

9) HGV (Class 1)

10) HGV (Class 2)

11) Light Goods Vehicles - Home Based Work, Education and Other trip purposes

12) Light Goods Vehicle – Employers Business

2.6 Model Calibration and Validation

2.6.1 The model calibration and validation process shows how the model compares against observed data, including traffic counts and journey times. The main guidelines for the calibration and validation of a model are outlined in Highways Assignment Modelling Guidance in TAG Unit M3-1 **[CD13-17, page 29]** and the Public Transport Assignment Modelling Guidance in TAG Unit M3-2 **[CD13-18, pages 36-42]**. The results of the calibration and validation are outlined in the Highway Local Model Validation **[CD12-07.02]** and the Transport Demand and Public Transport Model Development and Validation Report **[CD12-07.01]**.

2.6.2 These models have been prepared with reference to TAG guidance and reasonable steps have been taken to meet the calibration and validation criteria contained in the guidance. The strengths and weaknesses of the model have been considered carefully, and it is considered that the model is capable of providing outputs of sufficient quality to support planning of the Scheme in the core modelled area.

2.7 Forecasting

2.7.1 Two forecast years have been developed for 2026 and 2041, with a 2029 opening year forecast interpolated for use in the economic and environmental assessments. Whilst the opening year has now been revised to 2030, due to a year's delay from the inquiry abeyance. the change in

forecast traffic flow between 2029 and 2030 would not have a material impact on the assessment.

2.7.2 An Uncertainty Log, listing the future development and infrastructure improvements to be included in each of the modelled forecast year scenarios, was developed and is presented in the CSRM F Series Model Forecasting Report **[CD12-07.03, pages 22-45, pages 55-66]**.

2.7.3 The Cambridge South Rail Station has been included in the model forecasts. At the time of the Scheme modelling in 2022 the planning status of East West Rail (EWR), however, was deemed too uncertain to form part of the Core Forecasts and hence was not included, however it is noted that with the limited stop nature of EWR, with stations located at only St Neots, Cambourne, Cambridge South and Cambridge Central, this would mean that there would be little direct competition with the A1307 corridor.

2.7.4 Separate models have been developed for the following core scenarios:

1) Do Minimum (without the Scheme) – this includes future development and infrastructure as defined in the CSRM F Series Model Forecasting Report but excludes the Scheme; and

2) Do Something (with the Scheme) – As the Do Minimum but including the busway scheme and the A11 Travel Hub, as outlined in the Transport Assessment **[CD1-18.01, pages 1220]**, with a revised signalised junction proposed for the A11 Travel Hub junction with the A1307 as outlined in the Transport Assessment Addendum **[CD1-18.01.01].**

2.8 Strategic Impacts

2.8.1 As presented in the On-Road Option Technical Note **[CD12-12, page 23]**, the transport model outputs have highlighted the following key strategic impacts of the Scheme, compared to 'Do Minimum' scenario, as shown in Table 2.

Table 2 - Changes in Key Operational Performance Indicators (Do Something ('With the Scheme) minus Do Minimum ('Without the Scheme')

Operational performance indicator	Year	Do Something minus Do Minimum
Total annual vehicle kilometres change vs DM (Million Vehicle Kilometers)	2029	-3.8
	2041	-3.3
Daily bus patronage (passengers)	2026	+7,745
	2041	+6,643

AM inbound bus travel time change vs DM (mins)	*2026	-10.00
	2041	-10.00
PM outbound bus travel time change vs DM (mins)	*2026	-16.00
	2041	-22.00
AM A1307 inbound general traffic travel time change vs DM (mins)	*2026	-0.18
	2041	-0.20
PM A1307 outbound general traffic travel time change vs DM (mins)	*2026	-0.15
	2041	-0.18
Change in daily inbound traffic flow on the A1307 vs DM (vehicles)	2029	-287
	2041	-412

*2029 data not available

2.8.2 This highlights the following:

1) Overall vehicle kilometres are forecast to reduce across the study area by between 3.3 and 3.8 million vehicle kilometres per year as a result of the Scheme

2) Daily bus patronage is expected to increase through the introduction of the Scheme by between 7,700 and 6,600 for the 2026 and 2041 forecast years respectively

3) Bus travel times, between the A11/A1307 interchange through to Drummer St Bus Station, in the AM and PM peaks, are forecast to reduce by between 10 and 22 minutes

4) Highway vehicle journey times on the A1307 between the A11/A1307 junction to Addenbrookes Roundabout are forecast to reduce slightly along with traffic levels along the route

2.9 Sensitivity Tests

2.9.1 In order to test the sensitivity of the model results a series of tests and checks have been undertaken and are discussed below.

Covid 19 Adjustment

2.9.2 In November 2023, Transport Appraisal Guidance (TAG) unit M4 covering Forecasting and Uncertainty **[CD13-09]** was updated to include Appendix B which details the Department for Transport (DfT) expectations of how models developed before the Covid 19 pandemic should be adjusted in a proportionate manner to provide suitably adjusted forecasts to reflect the residual (but potentially permanent) change in travel patterns that Covid 19 has left as a legacy. The guidance puts forward three potential methods of adjustment, the simplest and most transparent being Method 3 whereby post-model adjustments are made to demand forecasts. Method 3 was adopted by the DfT and applied to their own National Transport Model (NTM) demand forecasts, with reductions being applied by journey purpose and vehicle type. The same method and purpose reductions that were applied to NTM have been applied to the Scheme forecasts. In

addition, adjustments to reflect the impacts of Covid on the Public Transport passenger demand across the study area has also been undertaken.

2.9.3 The outputs from this test have been used in the Covid19 Economic Assessment Sensitivity Test presented in the Economic Dimension Addendum **[CD1-21, page 27]**.

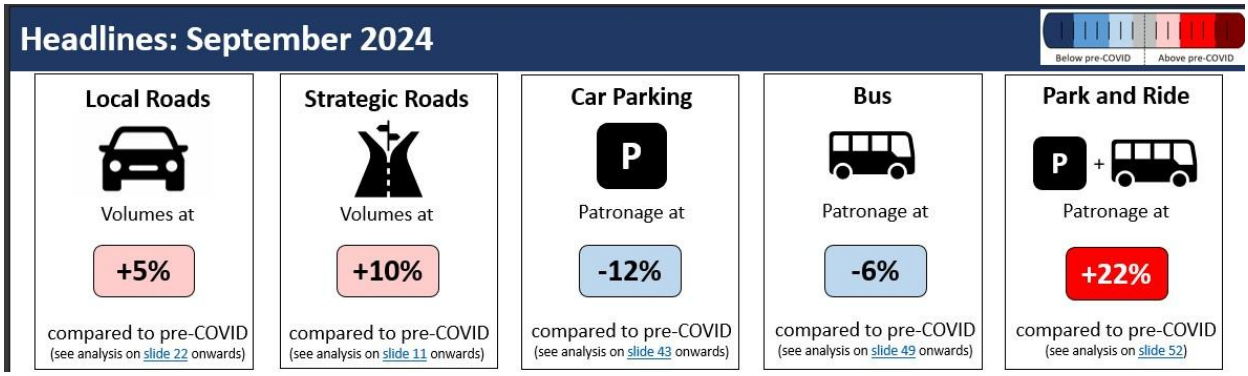
2.9.4 The adjustments applied for the demand of the Scheme are outlined below.

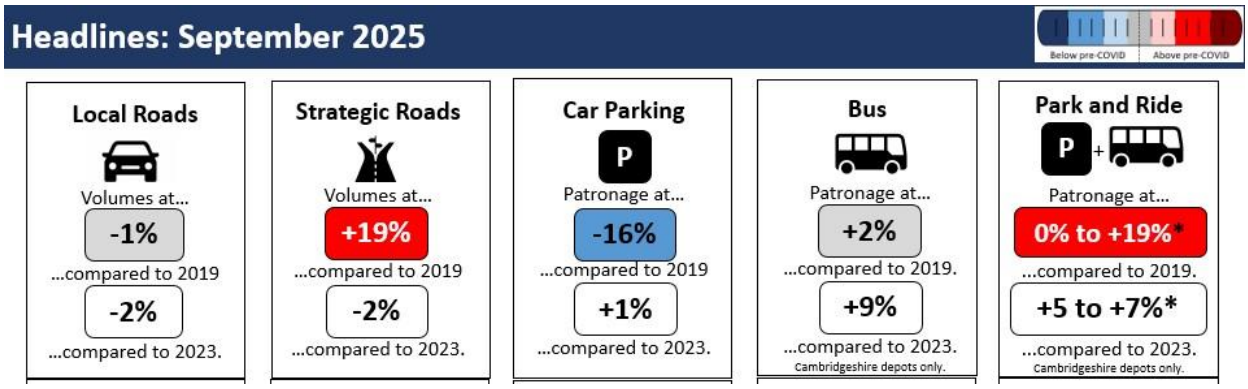
Table 3 2019 – 2024 Demand Forecast Adjustments

Trip type	2019 – 2024 Forecast Matrix Adjustment
Road (car)	-5%
Park and Ride	-5%
Guided Bus	-10%
Rail	-10%
Local Bus	-10%

2.9.5 Consideration of the September 2024 and September 2025 observed monitoring data, presented in the Cambridge and Peterborough Insight Quarterly Transport Updates (Figure 1 below**) [CD1217, page 7 and CD12-18, page 7]** highlights that, compared to the 2019 data, road, Park & Ride and Local Bus levels are close to or above pre-Covid levels. It is recognised, however that the quarterly comparisons do show variations and hence the Covid adjustments outlined above are considered proportionate, and, particularly in the case of the Park and Ride, provides a conservative estimate of growth compared to pre-Covid levels.

Figure 1 - Extracts from the September 2024 and 2025 Cambridge and Peterborough Insight Quarterly Transport Updates





2.9.6 Observed 'median' and 'average' journey times across a full year (excluding weekends, bank holidays and Christmas), derived from Tom Tom in vehicle Global Positioning System Data, has been extracted along the A1307 between the A11 roundabout and Fendon Road Junction. This has been taken for both a pre (2019) and post (2025) Covid19 year and is presented in Appendix 1.

2.9.7 These results show that the median 2025 observed journey times are almost the same as or slightly higher than that of pre Covid19 conditions and hence demonstrate that the impacts of Covid have not significantly changed delays and journey times for highway vehicles along this corridor. The Average Journey times are also within 12% of the pre-Covid times however it is noted that these can be skewed by individual days with significantly large delays (e.g. caused by an accident, car breakdown or unexpected events etc). These 2025 average journey times do show, however, that the northbound AM peak direction is still 77% higher than the less congested southbound direction in this period.

Alternative Growth Assumptions

2.9.8 Travel demand in the future is dependent on various metrics including the growth in population, the number of dwellings, the number of available workers and jobs across a region. Whilst a 'core' scenario has been assessed and the results presented above, to understand the sensitivity of the Scheme to different levels of forecast growth, two alternative land use growth assumptions have been considered. These growth scenarios have been outlined in the Transport Assessment - Appendix M - CSRM2 F-Series Alternative Land Use Scenarios Technical Note **[CD1-18.14]** and summarised below. The economic appraisal of the low growth scenario is also reflected in Ms Diamant's Proof of Evidence **[CD27-01 APP-W3-01, Section 7**].

(1) Low Growth Scenario

2.9.9 This low growth land use scenario is derived from the core land use scenario, discussed in section 3.7 above, constrained to the DfT's National Trip End Model Core scenario (v8.0) levels of growth. As noted above, this constraint has been applied within the model by four key metrics: dwellings, jobs, population and workers and the growth compared to the core scenario is presented in Table 4 below for each metric.

Table 4 - Internal Districts Percentage Growth in Core and Low Growth Land Use Scenarios [CD118.14, Table 2.1]

Metric	Growth from 2019 to 2026		Growth from 2019 to 2041	
	Core	Low	Core	Low
Population	9.1%	1.4%	16.0%	1.6%
Dwellings	12.9%	2.5%	29.9%	7.4%
Workers	10.4%	3.6%	21.7%	3.0%

Total Jobs	7.4%	5.0%	20.8%	8.0%

2.9.10 This table shows that the Low Growth scenario has assumed significantly lower levels of population etc compared to the core scenario which will result in lower levels of overall travel demand across the region. The future year highway and public transport networks have not been changed compared to the core scenario.

(2) High Growth Scenario

2.9.11 A high growth scenario sensitivity test has been undertaken, with the results presented in Appendix R of the Transport Assessment **[CD1-18.19]**. This test, undertaken in 2023, developed forecasts consistent with the emerging Greater Cambridge Local Plan preferred option growth estimates for Cambridge City and South Cambridgeshire, with adjustments for Huntingdonshire and East Cambridgeshire high growth scenario rates based on the Cambridgeshire and Peterborough Independent Economic Review. A comparison of the growth between the core and high growth scenarios, for these key metrics, is presented in Table 5 below.

Table 5 - Internal Districts Percentage Growth in Core and High Growth Land Use Scenarios [CD1-18.14, page 8]

Metric	Growth from 2019 to 2026		Growth from 2019 to 2041	
	Core	High	Core	High
Population	9.1%	10.6%	16.0%	22.2%
Dwellings	12.9%	14.4%	29.9%	36.8%
Workers	10.4%	11.9%	21.7%	28.1%
Total Jobs	7.4%	13.5%	20.8%	38.2%

Travel Hub Car Park Size

2.9.12 As outlined in the Transport Assessment **[CD1-18.01, page 15]**, to ensure the proposed A11 Travel Hub will have sufficient car parking capacity in the future, demand associated with a HighGrowth scenario was used. This determined that 880 parking spaces would be needed, however additional spaces have been accounted for to provide flexibility. This is based on two elements:

1) CCC's guidance states that a car park is considered full when it reaches 85% of total capacity, because when a car park reaches an occupancy level of beyond 85% issues arise of circulation, queuing and perception amongst users that they may not find a space in the car park; and

2) GCP's preference for an additional 250 spaces to be included to account for any possible future demand that may emerge during the development process for the new Greater Cambridge Local Plan.

2.9.13 This requirement for additional car park capacity, to avoid potential circulation, queuing and user perception issues, as well as provision of a further 250 spaces to account for possible future demand, results in a requirement for a total of 1,250 parking spaces to be provided at the A11 Travel Hub.

Light and Heavy Goods Vehicle Growth

2.9.14 The CSRM F series model forecasts, reported in May 2022 **[CD12-07.03]** used the DfT's Road Traffic Forecasts 2018 (RTF18) **[CD13-19]** as the basis for the Light and Heavy Good vehicle growth. In December 2022 the DfT issued the National Road Traffic Projections 2022 (NRTP22) **[CD13-20]** which replaced RTF18.

2.9.15 Consideration of the change in growth for the Eastern Region between these two forecasts are presented below.

Table 6 - Comparison of Growth Factors for RTF18 and NRTP22

Vehicle Type	Road Type	2015 - 2026		2015 - 2041	
		RTF18	NRTP22	RTF18	NRTP22
LGV	Motorway	1.0891	1.2039	1.2918	1.4264
LGV	Minor Roads	1.2073	1.3562	1.4605	1.6306
HGV	Motorway	1.0505	1.1682	1.1480	1.2914
HGV	Minor Roads	0.9887	0.9894	1.0299	1.0150

2.9.16 Table 6 highlights that, were the latest published Light and Heavy Goods Vehicle growth applied, the levels of HGV and LGV's would be predominately higher than currently modelled, both with or without the Scheme. This may result in higher levels of road congestion and hence the potential

for car trips to transfer to the proposed Scheme may increase compared to that currently forecast.

On-Road Option Assessment

2.9.17 An on-road option, brought forward by Smarter Cambridge Transport, and more recently adopted by Cambridge Past Present and Future (CPPF) and Better Ways for Busways (BW4B) has been proposed as an alternative to the Scheme.

2.9.18 This on-road route extends from Cambridge Biomedical Campus (CBC) on a dedicated section of busway, joining onto the A1307 at Babraham Road/Cherry Hinton junction. This then continues on-road with provision of several sections of bus lanes to the new Travel Hub, located near the A11/A1307 junction.

2.9.19 Details of this assessment are presented in the On-Road Option Technical Note September 2025 **[CD12-12]** and the strategic modelling results are presented below.

Table 7 - Change in Key Operational Performance Indicators (Do Something ('With the Scheme) minus Do Minimum ('Without the Scheme') for the Preferred Scheme and Alternative On-Road option

Operational performance indicator	Year	Preferred Scheme	On-Road Option	Difference (Pref Scheme – On-Road)
Total annual vehicle mileage change vs DM (Million Vehicle Kilometers)	2029	-3.8	-0.21	-3.59
	2041	-3.3	-0.05	-3.25

Daily bus patronage (passengers)	2026	+7,745	+4,301	3,444
	2041	+6,643	+3,723	2,920
AM inbound bus travel time change vs DM (mins)	*2026	-10.00	-4.00	-6.00
	2041	-10.00	-4.00	-6.00
PM outbound bus travel time change vs DM (mins)	*2026	-16.00	-13.00	-3.00
	2041	-22.00	-21.00	-1.00
AM A1307 inbound general traffic travel time change vs DM (mins)	*2026	-0.18	-0.03	-0.15
	2041	-0.20	-0.05	-0.15
PM A1307 outbound general traffic travel time change vs DM (mins)	*2026	-0.15	0.03	-0.18
	2041	-0.18	0.12	-0.30
Change in daily inbound traffic flow on the A1307 vs DM (vehicles)	2029	-287	-375	88
	2041	-412	-367	-45

**2029 Data Not Available*

2.9.20 As highlighted in this Table 7, taking all of the transport modelling evidence presented above together, the Scheme performs substantially better than the On-Road Option, whilst I recognise that some criteria are marginal.

2.10 Localised Transport Impacts of The Scheme

2.10.1 In addition to the strategic modelling, detailed junction capacity modelling was undertaken using industry-standard junction modelling software (ARCADY for roundabouts (part of the Junctions Software suite) and LinSig for signalised junctions) to determine the impact of the Scheme on the local highway network. The scope of the local junction modelling was agreed through Transport Assessment (TA) scoping discussions held between AtkinsRéalis and Cambridgeshire County Council's Transport Assessment team. The formal TA scoping response provided by Cambridgeshire County Council is included in Appendix A.2 of the Transport Assessment **[CD118.02, pages 10-14]**.

Background

2.10.2 A summary of local operational traffic modelling of both the A1307/Travel Hub access junction and the A11/A1307 'Fourwentways' grade-separated junction is provided within the Transport Assessment **[CD1-18.01, pages 70-76]** and Transport Assessment Addendum **[CD1-18.01.01]**.

2.10.3 It is noted, however that, for the A1307/Travel Hub access, as outlined in the Transport Assessment Addendum **[CD1-18.01.01, page 4]**, in September 2025, an additional constraint to the Travel Hub design was identified by National Gas Transmission (NGT), who raised concerns

relating to the proximity to a pipeline which crosses the A1307 just to the north of the Travel Hub. There are currently existing protections for the gas main as it passes under the existing alignment of the A1307, however the proposed roundabout junction design that was submitted as part of the application and outlined in the Transport Assessment **[CD1-18.01, pages 7076]** would extend beyond this protected cross-section. Therefore, in consultation with NGT, the Travel Hub junction has been redesigned to reduce the footprint and avoid the need for any additional resilience or diversionary works to this NGT asset. The redesign has resulted in a more compact Traffic Signal junction layout. The assessments **[CD1-18.01.01]** for this junction were undertaken for the 2029 and 2041 Future Do Something (DS) scenarios only as this junction does not currently exist and will only be constructed if the Scheme progresses. Predicted traffic flows at this junction for the 2029 Opening Year and 2041 Do Something (DS) scenarios have been extracted from the CSRM2 strategic transport model.

2.10.4 For the A11/A1307 'Fourwentways' grade-separated junction, junction capacity assessments were undertaken for the 2019 Observed, 2029 and 2041 Do-Minimum (DM), 2029 Opening Year and 2041 Do Something (DS) scenarios. Predicted traffic flows at this junction for the 2019 Observed scenario were extracted from observed traffic count data, whereas predicted traffic flows for the 2029 DM/DS and 2041 DM/DS scenarios have been extracted from the CSRM2 strategic transport model.

2.10.5 In addition, an assessment of the Scheme minor road crossing location on Hinton Way is provided within the Hinton Way Junction Modelling Technical Note **[CD12-16]**. The Hinton Way crossing location was chosen for assessment as it was identified as potentially the busiest minor road crossing of the Scheme due to having the highest existing traffic flows of c.500 two-way vehicles on Hinton Way.

A1307/Travel Hub Access Junction

2.10.6 The Signalised Junction on the A1307 that will provide access to the Travel Hub has been designed to accommodate forecast traffic demand based on the outputs of local junction modelling that uses forecast demand flows from the strategic traffic model. Consequently, it has been designed to operate within capacity. The local junction modelling undertaken utilised industry-standard LinSig signalised junction modelling software, the outputs of which demonstrate that the junction has reserve capacity in both the AM and PM peaks in years 2029

and 2041, and as such this amendment to the highway network does not have any substantial impacts to highway capacity **[CD1-18.01.01, page 7]**.

A11/A1307 'Fourwentways' Grade-Separated Junction

2.10.7 The A11/A1307 'Fourwentways' grade-separated junction was also modelled using industrystandard ARCADY roundabout modelling software using forecast demand flows extracted from the strategic traffic model for both the 2029 and 2041 Do-Minimum (DM) and Do-Something (DS) scenarios. The outputs of the ARCADY modelling demonstrated that in both the 2029 and 2041 Do-Something (DS) scenarios with the Scheme in place, all arms of the junction will operate well within capacity with minimal queuing **[CD1-18.01, pages 70-71].**

Hinton Way Minor Road Crossing

2.10.8 An assessment of the Scheme minor road crossing location on Hinton Way was undertaken as this location was identified as having the highest existing traffic flows of c.500 two-way vehicles **[CD12-16, page 1].** The Scheme public transport service is proposed to operate at an 8-minute frequency in each direction, although the actual frequency of crossings would be dependent on the coordination of inbound and outbound services. Based on the service frequency, the maximum crossing rate would be once every 3 ½ minutes. It is therefore considered that the applied 1 ½ minute cycle time and implied frequency is a 'worst case' scenario which also

accounts for any potential additional activity associated with pedestrians, cyclists and other users travelling along the Emergency and Maintenance Access Track (EMAT) adjacent to the busway itself. The signalised junction assessment, undertaken using industry-standard LinSig software and observed traffic data collected in March 2019, simulated the impact of a signal-controlled crossing with public transport priority at Hinton Way, the results of which demonstrated that the priority signals will generate minimal and infrequent traffic impact on Hinton Way and no build-up of queued traffic which could impact residential properties **[CD12-16, page 4].** The implications for traffic impacts on minor roads as a result of the Scheme are therefore within acceptable standards. In addition, a range of sensitivity tests were undertaken to simulate increasing traffic on Hinton Way by 10%, 25% and 50%. The results demonstrated that the priority signals will generate minimal and infrequent traffic impact on Hinton Way and no build-up of queued traffic which could impact residential properties **[CD12-16, page 4].**

2.10.9 It should be noted that the demand dependant pedestrian/ cyclist crossing phases at the signalcontrolled road crossings with the busway are only likely to be called intermittently, and not every signal cycle. This is because traffic on the minor roads crossed by the busway is relatively light, meaning that there will be plenty of gaps in the traffic flow for pedestrians and cyclists to cross them without the need to call the demand dependant pedestrian/ cyclist crossing phase and interrupt traffic flow.

3. KEY STAKEHOLDER ENGAGEMENT

3.1 I have not personally been involved in stakeholder engagement relating to my discipline area. The details on the consultation activities that have taken place have been covered within the consultation report **[CD1-05.01]** and will be discussed as part of Mr Baker's Proof of Evidence **[CD27-01 APP-W2-01].**

4. OBJECTIONS AND REPRESENTATIONS RELEVANT TO MY EVIDENCE

4.1 Introduction

4.1.1 In this section I present my responses to third parties relevant to my evidence and expert area. I have set out the main issues raised and have followed this with my response.

4.1.2 Representations relevant to my proof of evidence have been made by:

1) RailFuture East Anglia **[CD2-OBJ-256 and CD3-08]**

2) Haverhill Town Council and ONE Haverhill Partnership **[CD2-REP-03 and CD3-07]**

3) West Suffolk Council **[CD2-REP-07 and CD3-12]**

4) Wellcome Genome Campus Ltd **[CD2-REP-09 and CD3-15]**

5) Mr B Kingsley **[CD2-OBJ-64 and CD3-03]**

6) Dr Turnbull-Jones **[CD2-OBJ-09 and CD3-04]**

7) BW4B Consortium **[CD2-OBJ-440 and CD3-23]**

8) Great Shelford Parish Council **[CD2-OBJ-111]**

4.2 Representation by RailFuture East Anglia [CD2-OBJ-256 and CD3-08]

[CD3-08.1 OBJ-256, page 1] – 'We consider the current CSET proposal, with its significant reliance on a large Park & Ride facility, conflicts with these objectives. By

promoting car travel to the Park & Ride site, the scheme may not sufficiently encourage a modal shift towards more sustainable transport options for the entire journey. This approach could lead to increased traffic congestion and environmental impacts in areas surrounding the Park and Ride, contrary to the goals of reducing car dependency and improving air quality.'

4.2.1 Table 2 and Paragraph 2.8.2 of my proof of evidence outline the strategic impacts of the Scheme resulting in increased bus patronage and a reduction in vehicle kilometres and travel times.

4.2.2 The Local Junction modelling outlined in Section 2.10.6 of my Proof (pages 14, 15) highlights that, with the proposed improvements, the A1307/Travel Hub Access junction is forecast to operate within acceptable standards.

4.2.3 Based on the forecast results presented, the Scheme will promote modal shift and the impacts of any changes in highway demand have been mitigated to operate within acceptable standards.

4.2.4 Discussion of the environmental impacts of the Scheme are provided in Mr Parsons's Proof of Evidence **[CD27-01 APP-W7-01]**.

4.3 Representation by One Haverhill/Haverhill Town Council [CD2-REP-03 and CD3-07]

[CD3-07 REP-03, page 3] *- 'In terms of improving the road safety for all A1307 corridor users, the current proposal is likely to worsen the existing congestion in the Fourwentways area as the new terminus attracts more commuters to utilise the 1,250 space car park spaces (Greater Cambridge Partnership, 2023) (pg. 7). Furthermore, eastbound buses will have to rejoin busy traffic as they head out of the Northern Car Park (see figure 1) near to the Fourwentways junction, this is likely to increase the pre-existing congestion. With the A1307 being a radial route into Cambridge with a poor accident record, further congestion caused in this area will serve only to frustrate impatient drivers into making rash decisions.'*

4.3.1 The signalised junction on the A1307 that will provide access to the Travel Hub, outlined in the Transport Assessment Addendum **[CD1-18.01.01]**, has been designed to accommodate forecast traffic demand based on the outputs of local junction modelling that uses forecast demand flows from the strategic traffic model. Consequently, this junction has been designed to operate within capacity. The local junction modelling undertaken utilised industry-standard LinSig modelling software, the outputs of which concluded that all junction arms will operate well within capacity in both the 2029 and 2041 Do-Something (DS) scenarios **[CD1-18.01.01]**.

4.3.2 The A11/A1307 'Fourwentways' grade-separated junction was also modelled using industrystandard ARCADY roundabout modelling software using forecast demand flows extracted from the strategic traffic model for both the 2029 and 2041 Do-Minimum (DM) and Do-Something (DS) scenarios. The outputs of the ARCADY modelling demonstrated that in both the 2029 and 2041 Do-Something (DS) scenarios with the Scheme in place, all arms of the junction will operate well within capacity with minimal queuing. **[CD1-18.01, pages 70-71]**.

4.3.3 The evidence and analysis presented demonstrate that the Fourwentways junction and the access into the Travel Hub have been designed to operate within capacity.

[CD3-07 REP-3, page 4] *- It must also be highlighted that although the Travel Hub was originally intended to have 2,000 car parking spaces (Greater Cambridge Partnership, 2020), the current proposal demonstrates a maximum capacity of only 1,250 car parking spaces. This is a considerable difference between the intended and actual number of spaces, which raises further concerns. Although there is space within the footprint of the Travel Hub or further parking 'if and when demand justifies', the reduction of car parking spaces from up to 2,000 to 1,250 enables a lower density of parking and enhanced landscaping (Mott MacDonald, 2021). However, commuters*

who have been promised a reliable journey simply need to reach their destination without concerns that there will be limited parking spaces. This reiterates the same principal that if the GCP acknowledge that the car park isn't going to be big enough to cope with demand, why not future-proof plans by allowing an extension to the busway itself rather plan to force hundreds more drivers to bring their vehicles through Fourwentways to access a single travel hub. Incentivising drivers to join the bus route earlier by creating a more reliable bus service (bypassing Fourwentways traffic jams) is a more sustainable solution.

4.3.4 The updated car parking spaces provision and potential provision to further grow the travel hub parking allocation within the footprint, is outlined in Mr Baker's Proof of Evidence **[CD27-01 APPW2-01, paragraph 8.5.21]**.

4.3.5 With regards to the 1,250 spaces, as outlined in the more recent Transport Assessment **[CD118.01, page 15]**, and in my Proof of Evidence (Section 2.9.12-2.9.13), to ensure the proposed A11 Travel Hub will have sufficient capacity, the demand associated with a High Growth modelling scenario, as opposed to the core, has been applied. This has been further adjusted for additional car park capacity to avoid potential circulation, queuing and user perception issues, as well as provision of a further 250 spaces to account for possible future demand, which results in a requirement for a total of 1,250 parking spaces to be provided at the A11 Travel Hub.

4.3.6 Having regard to the modelling undertaken, the use of High Growth demand scenario and the addition of further resilience, as noted above, the level of car parking proposed is appropriate.

4.4 Representation by West Suffolk Council [CD2-REP-07 and CD3-12]

[CD3-12 REP-07, page 2] *– 'Segregation of bus and cars – we are not convinced that the development will 'minimise interaction between busway vehicles and other users' (Design and Access Statement p.52). An individual, separate bus lane through the site segregated from car traffic is not provided, nor would priority be afforded to buses exiting the site, giving way to westbound traffic, a potential area of congestion. We strongly advise that the design of the Travel Hub is reconsidered, noting a significant level of commuting and growth within Haverhill (The Future Growth in Cambridge Technical Note P. 26 – 29).*

4.4.1 The signalised junction on the A1307, that will provide access to the Travel Hub, has been designed to accommodate forecast traffic demand based on the outputs of local junction modelling that uses forecast demand flows from the strategic traffic model. Consequently, this junction has been designed to operate within capacity. The local junction modelling undertaken utilised industry-standard LinSig modelling software, the outputs of which concluded that all

junction arms will operate within capacity in both the 2029 and 2041 Do-Something (DS) scenarios **[CD1-18.01.01, pages 7-8].**

4.5 **Representation by Wellcome Genome Campus Ltd [CD2-REP-09 and CD3-15]**

Wellcome Genome Campus Ltd ***[CD3-15 REP-09, pages 3 – 4]*** *consider that the Scheme should be extended to the Wellcome Genome Campus, and that a more comprehensive public transport solution would contribute to achieving objective 4 – relieve congestion and improve air quality – across a wider network. This is because it would encourage the use of sustainable transport modes for a greater proportion of journeys.*

4.5.1 As noted at paragraph 2.8.2 and Table 2 of my Proof of Evidence, the Scheme is expected to lead to a reduction in overall vehicle kilometres, journey times and flows along the A1307 and an increase in bus patronage.

4.5.2 Impacts on emissions are discussed further in Ms Sykes Proof of Evidence **[CD27-01 APP-W601, para 4.2.2].**

4.6 **Representation by Ben Kingsley [CD2-OBJ-64 and CD3-03]**

> ***[CD3-03 OBJ-64, page 1]*** *– 'As regards bicycle travel, we are concerned that the busway will, ironically, make cycling more hazardous, particularly for our children, both because of disruption to the DNA trail and because the busway/road crossings will result in more traffic backing up and frustrated drivers speeding to 'beat' the multiple proposed crossing points, or to 'make up time' after having been held waiting at a crossing point. As a community so close to Cambridge, we should be doing everything possible to make it easier not harder for residents to cycle to and from Cambridge and the Biomedical Campus.'*

4.6.1 As outlined in paragraph 2.10.9 of my Proof of Evidence (page 15) an assessment of the proposed minor road crossing location on Hinton Way was undertaken as this location was identified as the Scheme minor road crossing with the highest existing traffic flows of c.500 twoway vehicles **[CD12-16]**.

4.6.2 The result, simulating the controlled crossing with public transport priority at Hinton Way, **[CD1216, page 4]** demonstrated that the priority signals will generate minimal and infrequent traffic impact on Hinton Way and no build-up of queued traffic which could impact residential properties.

4.6.3 The modelling analysis undertaken demonstrates that the impact to pedestrians, traffic and cyclists will be minimal.

4.7 **Dr Turnbull Jones [CD2-OBJ-09 and CD3-04]**

> ***[CD3-04.1 OBJ-09, page 11]*** *- 'The transport model used 2016 traffic flows with growth rates not reflecting Dec. 2024 Quarterly County traffic data showing -15% growth on local roads 2019-24 due to Covid-related Working from Home (WFM). In Table 5.3, just 20% of 1,200 daily users are new users (240 new users).'*

4.7.1 As discussed in paragraph 2.9 of my Proof of Evidence (pages 9-11), a sensitivity test has been undertaken, adjusting the transport model to reflect the impacts of COVID in line with the DfT's guidance in TAG M4 on uncertainty and COVID for growth, journey purpose and mode. A proportionate adjustment has been applied for this assessment.

> ***[CD3-04.1 OBJ-09, page 11]*** *-: No assessment was published of the increased walk times from replacing 20 bus stops on bus route 7 with 4 remote busway stops. Paragraph 4.2 refers to reduced waiting/travel time weightings for the Scheme compared to existing services. Equal weightings should be applied walk/waiting time to generate generalised travel costs (c.+50%), which would reduce savings.*

4.7.2 Bus Route 7 will continue to operate in the 'With Scheme' scenario and hence these bus stops will not be removed. Regarding the walk times, as noted in Section 2.2.3 of my proof and CSRM2 F series Transport Demand and Public Transport Model Development and Validation Report **[CD 12-07.01, page 47]**, bus trips access the network via a two-way access/egress, or a combination of walk links towards a highway bus access node (walking to a bus stop), hence the time associated with walking to the bus stop is included in the generalised costs. The weightings of the time components in the transport for each element of the generalised costs, namely access (e.g. walk), wait, in vehicle and interchange time, are presented in CSRM2 F series Transport Demand and Public Transport Model Development and Validation Report **[CD12-07.01, page 92]**. Having regard to this analysis, the treatment of walk access to the busway has been modelled appropriately.

> ***[CD2-OBJ-09.02, page 12]*** *– 'The Scheme relies on an existing guided busway, from Addenbrookes to the City Centre. However, a low bridge precludes the use of double decker buses. The Trumpington PR3 Park & Ride service has a 10 mins. frequency & takes 13 mins. to the city centre. It does not use the Guided busway as a low bridge prevents the use of double deckers (with a capacity for 80 passengers). The bus lanes on the A1134 Trumpington Road route into the City Centre is the preferred route.'*

4.7.3 Service PR3 from Trumpington Park and Ride currently uses Trumpington Road to reach Cambridge city centre, however it should be noted that the PR3 service does not serve Addenbrooke's/CBC, which is a key aspect of the Scheme. Services U1 (2 buses per hour) and Busway A (6 buses per hour at peak; 3 buses per hour off-peak) do use the busway between CBC and Cambridge rail station. The route of the Scheme, which provides a link to the busway via Francis Crick Avenue, enables a routeing for buses using the Scheme's infrastructure, which is consistent with other bus services between the CBC, Cambridge rail station and Cambridge city centre.

> ***[CD2-OBJ-09.02, page 13]*** *- 'Rail Services are likely to be faster than the Scheme's estimated 9 mins from A11 to CBC, compared to c.6 mins from Whittlesford to a new Cambridge South Station, with a faster onward journey to the City Centre'...'Whittlesford Station provides a 12 mins journey time to Cambridge, every 15 minutes, which has not been assessed in the Transport Assessment.'*

4.7.4 As noted in the CSRM2 F-series Model Forecasting Report May 2022 **[CD12-07.03, Section 5.2.4, page 62],** the new Cambridge South Station has been included in the modelled forecast years for both the Do Minimum (without scheme) and Do Something (with scheme) scenarios. The model assumes that all trains passing through this station will stop and not incur any delay in doing so and hence the impact of this and rail services using this station have been captured in the modelling undertaken.

4.7.5 As noted in CSRM2 F-series Transport Demand and Public Transport Model Development and Validation Report May 2022 **[CD12-07.01, Section 2.9, page 32]**, the models also include Whittlesford Station.

4.7.6 The Transport Assessment **[CD1-18.01, Paragraph 5.47 to 5.49, page 54]** also makes reference to the Whittlesford Parkway Station with a service every 15 minutes in peak periods.

> ***[CD2-OBJ-09.02, page 13]*** *– 'East-West Rail services between Cambridge South & Cambridge Station, will provide an alternative route, with additional services & greater frequencies, to the Scheme's proposals from the CBC to the City Centre. It has not been assessed in the Transport Assessment.'*

4.7.7 The Cambridge South Rail Station has been included in the Scheme model forecasts. At the time of the Scheme modelling in 2022 the planning status of EWR was deemed too uncertain to form part of the Core Forecasts and hence was not included, however with the limited stop nature of EWR, with stations located at only St Neots, Cambourne, Cambridge South and Cambridge Central, this would mean that there would be little direct competition with the A1307 corridor. In

addition, the Cambridge rail station is located 1 mile/1.6km outside of the city centre. As a result of this, a direct comparison cannot be made between the proposed East-West Rail services and the proposed bus services of the Scheme. The overall bus service proposition is for buses to use the Scheme's guided busway infrastructure to travel to Francis Crick Avenue serving the CBC and Cambridge South railway station, then join the existing Cambridgeshire Guided Busway (CGB) to travel to Cambridge railway station. From Cambridge railway station, the services would travel on-street to Cambridge city centre.

[CD2-OBJ-09.02, page 14] *– 'In Transport terms, the transport modelling covered the period 2015, 2019, 2026 & 2041. Table 3 below shows no traffic growth 20192023. The 2015 model exaggerates traffic growth because it doesn't allow for COVID-19 WORKING FROM HOME. It only included adopted planning commitments up to 2031, not those in the emerging Local Plan* [**CD1-21, page 7**]*.'*

4.7.8 As discussed in Section 2.9 of my Proof of Evidence (pages 9-11), a sensitivity test has been undertaken, adjusting the transport model to reflect the impacts of COVID in line with the DfT's guidance in TAG M4 on uncertainty and COVID for growth, journey purpose and mode. Having regard to this analysis, a proportionate adjustment has been applied for this assessment.

4.7.9 The modelling undertaken for this study, undertaken in 2022, used the land use forecasts as outlined in the CSRM F Series Model Forecasting Report **[CD12-07.03, pages 22-45, pages 5566]** which was the appropriate basis at the time of the assessment.

[CD2-OBJ-09.02, page 15] *- 'Clarification is sought on the modelled traffic growth in vehicle miles 2015, 2019 & 2040, whether the model has adopted 2018 or 2022 NRTP projections, & if so, whether the selected scenario would meet legal commitments to climate change targets'.*

4.7.10 The approach to forecasting trip growth in the Cambridge Strategic Regional Model v2 is outlined in the Cambridgeshire Sub-Regional Model 2, F-series Model Forecasting Report **[CD12-07.03, pages 93-94].** These highlight the change in passenger car unit (PCU) kilometres across the model for the AM, PM and Interpeak hours in 2015, 2026 and 2041 modelled years.

4.7.11 The CSRM2 model is a 4 stage multi modal model which includes a demand model, as specified in CSRM2 F-Series Transport Demand and Public Transport Model Development and Validation Report **[CD12-07.01]**. This demand model, developed in line with the DfT's Transport Appraisal Guidance (TAG), along with the household and job growth forecasts provided by Cambridge County Council and presented in the CSRM2 F-Series Model Forecasting Report **[CD12-07.03]**, have been used to derive the future year car trip growth.

4.7.12 As outlined in CSRM2 F-Series Model Forecasting Report **[CD12-07.03, pages 44-45]**, at the time of the modelling, Light and Heavy Goods vehicle growth was applied using the Road Traffic Forecasts 2018 (RTF18) **[CD13-19]**. As outlined in Section 2.9 (page 12) of my proof, a sensitivity test has also been undertaken to understand the change in these growth figures using the latest National Road Traffic Projections (NRTP22) **[CD13-20]**. These show that the growth for LGV and HGV trips would be higher compared to the previous projections, both with and without the Scheme.

4.7.13 Discussion regarding the climate change targets is provided in Ms Sykes' Proof of Evidence **[CD27-01 APP-W6-01, para 4.2.7 and 4.2.8]**

4.8 BW4B Consortium [CD2-23 and CD2-OBJ-440]

[CD3-23.1 OBJ-440, page 4] *– 'Travel patterns on strategic and local roads (including the A1307) have changed post-Covid, specifically the distribution of vehicular trips across the day and week, and a sustained reductions in bus patronage. These cause the transport modelling, based on a strategic model calibrated to 2019 traffic counts, to be materially out of date.'*

4.8.1 Section 2.9 of my Proof outlines a sensitivity test has been undertaken, adjusting the transport model to reflect the impacts of COVID in line with the DfT's guidance in TAG M4 **[CD13-09]**. Based on this it is my professional opinion that a proportionate adjustment has been applied for this assessment.

[CD3-23.1 OBJ-440, page 5] *- 'CCC and GCP have failed to re-evaluate demand and key transport modelling and delivery aspects of the Scheme in light of these material changes in circumstance (ref: EWR, Cambridge South Station, CBC Expansion). The changed circumstances materially alter the modelled inputs to the economic case, in terms of bus patronage on the Scheme's busway and traffic volumes, delays and queue lengths on the A1307.'*

4.8.2 The inclusion of the Cambridge South Rail Station and EWR is discussed in Paragraph 2.7.3 of my Proof of Evidence. The assumed employment growth of CBC up to 2041 has also been included whilst the expansion plans for CBC are for a development to 2050 and beyond.

[CD3-23.1 OBJ-440, page 6] *The scheme appears to do little directly to relieve congestion on the A1307 or indirectly on the A1301 entering or leaving Cambridge. CCC/GCP accept that, even on their assumptions (which are not accepted), there will be little improvement to identified congestion pinch-points which can exacerbate air quality, including the A11 segment of the A1307 and Hinton Way, and the roundabout exit from the BRC.*

4.8.3 As noted at paragraph 2.8.2 and Table 2 of my Proof of Evidence, the Scheme is expected to lead to a reduction in journey times and flows along the A1307, an increase in bus patronage and a reduction in overall vehicle kilometres.

4.8.4 Impacts on emissions are discussed further in Ms Sykes' Proof of Evidence **[CD27-01 APP-W6-01, para 4.2.2]**

[CD2-OBJ-440, page 12] **"***It is BW4B's view that the BW4B alternative would achieve similar benefits as the CSET2 busway in terms of journey time savings for buses. In addition, the BW4B alternative could provide journey time savings for all bus, coach, emergency and public service vehicles using the A1307."*

4.8.5 A comparison of the transport modelling outputs for both the Scheme and an on-road option, brought forward by Smarter Cambridge Transport, and more recently adopted by Cambridge Past Present and Future (CPPF) and Better Ways for Busways (BW4B), has been undertaken. Taking all of the transport modelling evidence presented in Table 7 of this Proof (page 12,13) together the Scheme performs substantially better than the On-Road Option, whilst I recognise that some criteria are marginal.

4.9 **Great Shelford Parish Council [CD2-OBJ-111]**

[CD2-OBJ-111, page 3]– *'Traffic Disruptions: Granhams Road and Hinton Way, already burdened by level crossings which are closed for c.23 minutes per hour during the day, would face further congestion during and after construction.'*

4.9.1 Paragraphs 2.10.8 and 2.10.9 of my Proof of Evidence (page 15) outlines an assessment of the Scheme minor road crossing location on Hinton Way, undertaken as this location was identified as the Scheme minor road crossing with the highest existing traffic flows of c.500 two-way vehicles **[CD12-16]**.

4.9.2 The results **[CD12-16, page 4]** demonstrated that the priority signals will generate minimal and infrequent traffic impact on Hinton Way and no build-up of queued traffic which could impact residential properties.

5. **CONCLUSIONS**

5.1 My Proof of Evidence has outlined the case for the Scheme in terms of Transport Modelling.

5.2 The objectives for the Scheme are outlined in the Outline Business Case – Strategic Dimension Refresh **[CD1-20, page 78]**. My proof of evidence, in line with Point 1 of the Statement of Matters

dated 19 October, has demonstrated how the Scheme performs against these objectives, in terms of the transport modelling, and the key points are summarised below.

5.3 Objective 1 - Improve connectivity to employment sites in South East Cambridge and Central Cambridge

5.3.1 The transport modelling has shown that the introduction of the Scheme is forecast to increase bus patronage and reduce bus travel times to the CBC etc. through the provision of additional high-quality public transport options.

5.4 Objective 2 - Support the continued growth of Cambridge and South Cambridge's Economy

5.4.1 The Scheme is forecast to reduce bus travel times by between 10 and 22 minutes whilst also reducing highway travel times and demand flows slightly on the A1307. These changes in journey times are used as part of the calculation of economic benefits presented in Ms Diamant's Proof of Evidence **[CD27-01 APP-W3-01, Section 7].**

5.5 Objective 3 - Improve road safety for all users of the A1307 corridor

5.5.1 The Scheme is forecast to reduce traffic flow on the A1307 as well as reducing overall annual vehicle kilometers, a key driver for accident appraisal, across the study area by between 3.3 and 3.7 million vehicle kilometers.

5.6 Objective 4 - Relieve congestion and improve air quality in South East Cambridge

5.6.1 The Scheme will encourage the use of sustainable transport modes for journeys through South East Cambridge with bus patronage forecast to increase by between 6,600 and 7,700 passengers per day.

5.6.2 The Scheme has been modelled in both the strategic and operational traffic models and operates within capacity with the forecast levels of growth for the region. Overall annual vehicle kilometres are forecast to reduce by between 3.3 and 3.7 million whilst daily traffic and travel times on the A1307 are also forecast to reduce.

5.7 Objective 5 - Improve active travel infrastructure and public transport provision in South East Cambridge

5.7.1 The Scheme increases the uptake of sustainable transport modes with bus patronage forecast to increase by between 6,600 and 7,700 passengers per day.

5.7.2 Overall, the transport modelling outputs presented in my proof for the Scheme support the Scheme Objectives outlined in the Strategic Dimension Refresh **[CD1-20, page 78]**.

5.8 On Road Alternative Option

5.8.1 In line with Point 3 of the Statement of Matters dated 19 October, a comparison of the transport modelling outputs for both the proposed Scheme and an on-road option, brought forward by Smarter Cambridge Transport, and more recently adopted by Cambridge Past Present and Future (CPPF) and Better Ways for Busways (BW4B), has been undertaken.

5.8.2 Taking all of the transport modelling evidence presented in Table 7 of my Proof (page 13) together, the Scheme performs substantially better than the On-Road option, whilst I recognise that some measures are marginal.

6. STATEMENT OF TRUTH

6.1 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.

List of Appendices

Appendix 1 – Tom Tom Journey Time Assessment