

The Network Rail (Cambridge South Infrastructure Enhancements) Order

Proof of Evidence



Proof of Evidence – Traffic and Transport (Mr Geoff Hilling)

(Inquiries Procedure (England & Wales) Rules 2004)

January 2022

The Network Rail (Cambridge South Infrastructure Enhancements) Order



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CBC Estate Management Limited (E5)**

Acronyms and Abbreviations

| Acronyms and Abbreviations | Description |
|----------------------------|--|
| ATCs | Automatic Traffic Counters |
| ANPR | Automatic Number Plate Recognition |
| CAM | Cambridge Autonomous Metro |
| CBC | Cambridge Biomedical Campus |
| CBCTS | Cambridge Biomedical Campus Transport Strategy |
| CCiC | Cambridge City Council |
| CCoC | Cambridgeshire County Council |
| CGB | Cambridgeshire Guided Busway |
| CPCA | Cambridgeshire and Peterborough Combined Authority |
| CSET | Cambridge South East Transport |
| CSIE | Cambridge South Infrastructure Enhancements |
| CSRM | Cambridge Sub Regional Model |
| DCM | Document Control Manager |
| DfT | Department for Transport |
| DMP | Document Management Procedure |
| DoS | Degree of Saturation |
| EIA | Environmental Impact Assessment |
| ES | Environment Statement |
| EWR | East West Rail |
| GCCD | Greater Cambridge City Deal |
| GCP | Greater Cambridge Partnership |
| GRIP | Governance of Railway Investment Projects |
| HGV | Heavy Goods Vehicle |
| HSSE | Health, Safety, Security and Environment |
| LTN | Local Transport Note |
| LTP | Local Transport Plan |
| LTTS | Long-Term Transport Strategy |
| MCC | Manual classified vehicle turning counts |

| Acronyms and Abbreviations | Description |
|----------------------------|---|
| MMQ | Mean Maximum Queue |
| MRT | Mass Rapid Transit |
| MSOA | Middle Super Output Area |
| NCN | National Cycle Network |
| NPPF | The National Planning Policy Framework |
| NRG | National Records Group |
| NRTS | National Rail Travel Survey |
| NTEM | National Trip End Model |
| NTM | National Traffic Model |
| OBC | Outline Business Case |
| PLT | Project Leadership Team |
| RFI | Request for Information |
| PPG | Planning Policy Guidance |
| PPS | Planning Policy Statements |
| SCDC | South Cambridgeshire District Council |
| SOBC | Strategic Outline Business Case |
| TA | Transport Assessment |
| TDM | Transport Demand Model |
| TEMPro | Trip End Model Presentation Program |
| TOC | Train Operating Company |
| TRO | Traffic Regulation Order |
| TSCSC | Transport Strategy for Cambridge and South Cambridgeshire |
| TWAO | Transport and Works Act Order |
| UoC | The University of Cambridge |
| WAML | West Anglia Main Line |

1 Introduction

Qualifications and Experience

- 1.1.1 My name is Geoff Hilling. I am a Senior Technical Director with Arcadis Consulting (UK) Limited. I have been retained by Network Rail to provide specialist advice on Traffic and Transport matters pertaining to the Cambridge South Infrastructure Enhancements (CSIE) Project. I have over 35 years' experience as a Traffic and Transport Planning specialist and over 20 years' experience in the assessment of traffic and transport impacts and the design of mitigation for major infrastructure projects, including railways and other linear infrastructure.
- 1.1.2 I am a Fellow of the Chartered Institute of Logistics and Transport and a Member of the Chartered Institution of Highways and Transportation. I hold a BSc in Civil Engineering and a RoSPA Road Safety Engineering qualification.

Involvement with the Project

- 1.1.3 My involvement in the CSIE Project began in 2019 when Arcadis was awarded the contract to deliver GRIP 3 design and Environmental Assessment to support the TWAO application. My role on the project was to lead the GRIP 3 highway and transport planning inputs and to prepare all highway and transport planning deliverables completed as part of this commission.
- 1.1.4 I have completed technical reviews of the Traffic and Transport chapter of the Scoping Report and Environmental Statement, together with the Transport Assessment prepared to support this. As a technical lead for the CSIE Project. I have a good understanding of the Highways, Traffic and Transport Planning work that has been carried out and I have made comprehensive site visits to the CSIE Project and its setting.

Scope and Structure of Evidence

- 1.1.5 I will provide evidence on all Traffic and Transport matters including:
- Description of the Scheme (Section 2);
 - The transport policy context for the development (Section 3);
 - Traffic and transport work undertaken to date (Section 4);
 - Engagement with stakeholders (Section 5);
 - A summary of the methodology for the traffic and transport assessment work (Section 6);
 - The potential traffic and transport impacts and effects of the CSIE Project during the construction phase, the mitigation proposed, and any residual effects anticipated (Section 7);
 - The potential traffic and transport impacts and effects of the CSIE Project during the operational phase, the mitigation proposed, and any residual effects anticipated (Section 8);
 - Responses to objections and challenges to the assessments that refer to traffic and transport issues. (Section 9 and Appendices B, C and D);
 - Responses to additional issues raised in statements of cases (Section 10);
 - My conclusions as to the significance of the main residual effects on traffic and transport (Section 11); and

- Declaration (Section 12)

1.1.6 My evidence addresses the matters identified at points 1, 3(b), 3(c) and 5 of the Secretary of State's Statement of Matters dated 27 October 2021.

2 The CSIE Project

Overview

- 2.1.1 A full description of the CSIE Project is set out in the Proof of Evidence of Mr Barnes (**NRE1.2**). What follows is a summary of the key points, providing context for my evidence.
- 2.1.2 The CSIE Project will deliver a new passenger railway station and associated infrastructure required to maintain capacity and train performance. Key elements of this comprise:
- A new railway station with four platform faces including forecourts, pedestrian and cycle access paths, new interchange for taxi and pick up/drop off points, cycle parking spaces, and limited parking for staff/contractors and blue badge holders, together with associated works. The new station will be located between the Cambridge Biomedical Campus (CBC) and Hobson's Park and bordered to the north by the Cambridge Guided Busway (CGB);
 - Introduction of 2 additional loop lines on the West Anglia Main Line (WAML) for the purpose of enabling trains to access the eastern and western platforms in the area of the new station and associated Overhead Line Equipment and signalling;
 - Track replacement/modification/additional loop line to the WAML;
 - New Overhead Line Equipment and improvement works at Shepreth Junction and replacement of the GSMR mast;
 - New permanent rail systems compound and associated works to the south-west of Addenbrooke's Road (Nine Wells Bridge);
 - Attenuation ponds and drainage works;
 - Closure of Dukes No.2 Level Crossing and Webster's Level Crossing over the WAML at Shelford and extinguishment of the existing private access rights over the crossings together with provision of alternative access measures; and
 - Replacement open space provision.

The CSIE Project site

- 2.1.3 The application site boundary covers an area of approximately 46.5ha and lies within and adjacent to the existing railway corridor from Hills Road overbridge in the north and Shepreth Branch Junction to the south (see Figure 2.1 below). The site is located immediately west of the CBC. The CSIE Project is located in the administrative areas of Cambridge City Council (CCiC) and South Cambridgeshire District Council (SCDC). The southern part of the site is also located within the parish of Great Shelford.

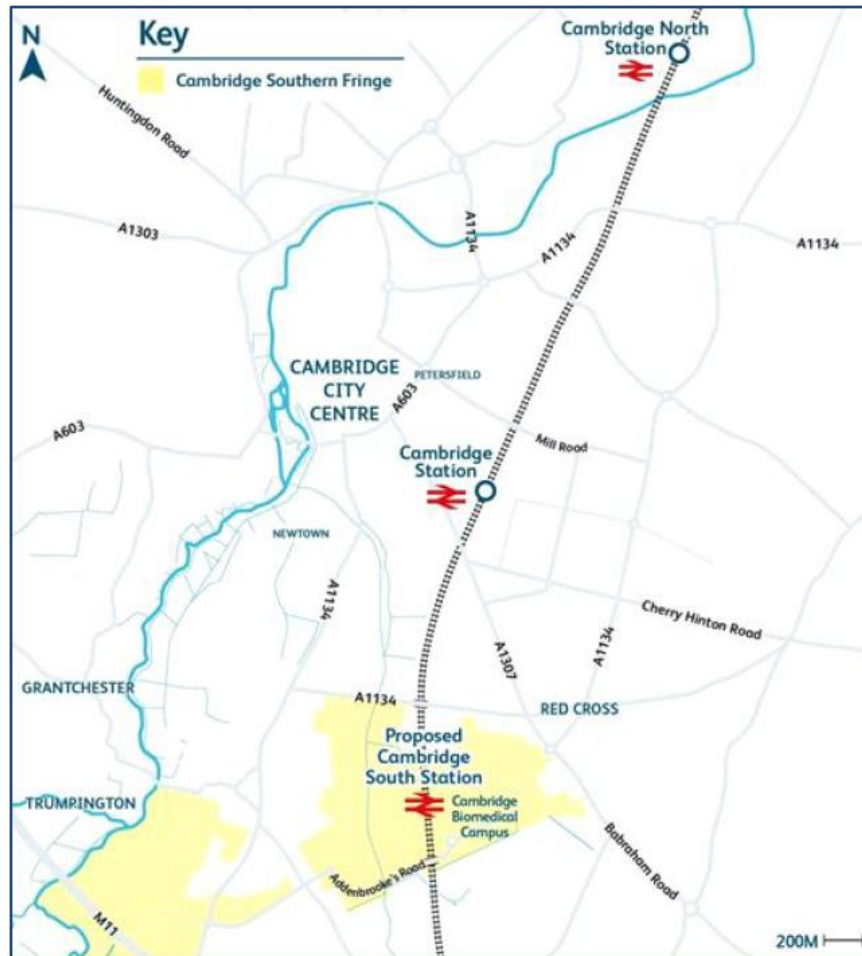


Figure 2.1 Proposed location of Cambridge South Station

- 2.1.4 The CSIE Project site is generally flat and contains the existing railway line. The eastern portion of the site is bordered by the CBC and is mainly occupied by associated buildings, hard standing areas and car parks. The proposed eastern station forecourt connects to Francis Crick Avenue. To the south of the CBC lies Addenbrooke's Road which forms the junction of Francis Crick Avenue and Dame Mary Archer Way. Within adjacent land, south of Dame Mary Archer Way is Abcam Plc, associated storage yards and car parking. The area further to the south is occupied by arable farmland. Figure 2.2 shows the site context.
- 2.1.5 The majority of the western portion of the CSIE Project site lies within Hobson's Park which is greenfield in nature and contains Hobson's Park Nature Reserve. Arable farmland lies to the south of Addenbrooke's Road. Hobson's Brook is also located within the site's western boundary and lies in a north-south orientation.
- 2.1.6 The northern area of the site predominantly comprises existing railway infrastructure. This area is bordered by large educational and industrial buildings. Along the CGB route, which crosses over the northern portion of the site, there are stretches of national cycle route, public rights of way (PRoWs), and minor roads which frame the site and create connectivity to surrounding areas.



Figure 2.2– Site Context

- 2.1.7 Within the site boundary and surrounding area, there is a range of transport infrastructure in the form of roads, the CGB, railway lines and cycle paths. Public footpaths, permissive paths and cycle routes also cross the area.

- 2.1.8 Cambridgeshire County Council (CCoC) is the Highways Authority for the wider road network providing access to the CBC. Figure 2.3 indicates the public (adopted) highways in the vicinity of the site.
- 2.1.9 Cambridge Medipark Ltd is the developer of the Phase 1 and 2 expansion of the CBC and is responsible for the CBC highway network. Whilst the roads within the CBC, including Francis Crick Avenue, are not adopted by the CCoC, Cambridgeshire Constabulary is responsible for automated enforcement using Automatic Number Plate Recognition (ANPR) cameras which are in operation to prevent rat-running through this area.

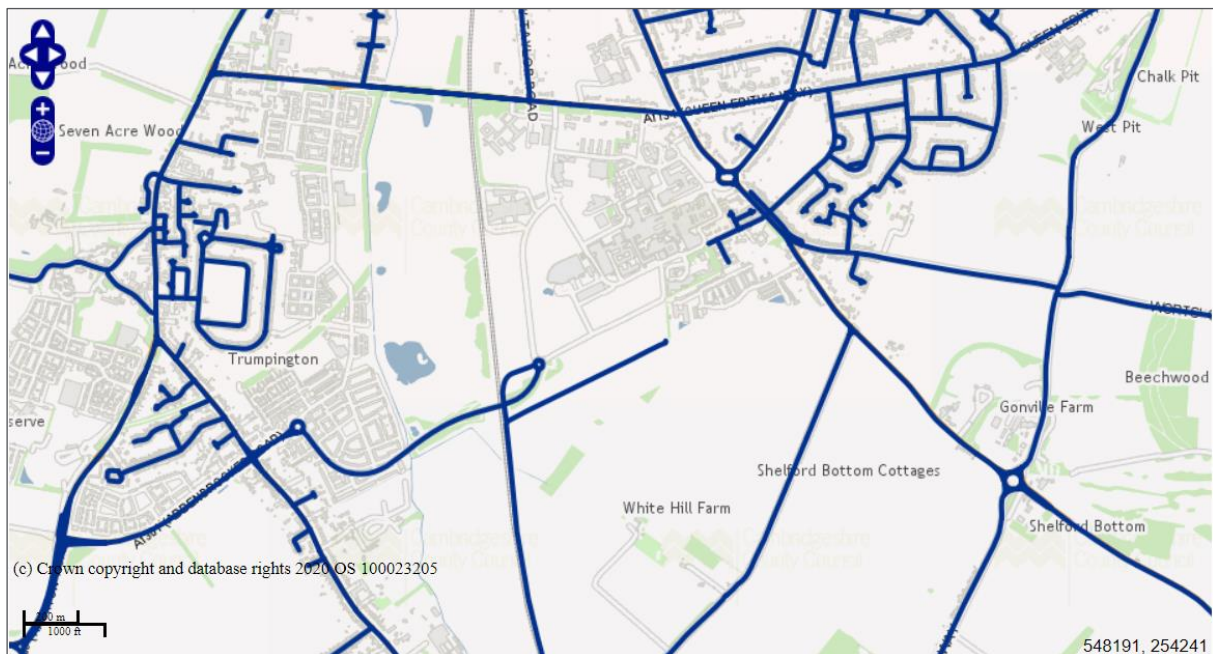


Figure 2.3 – Adopted Highway Network

Movement and Access

- 2.1.10 Access to the station will be provided from both the east and west of the tracks. To provide full integration of the station within the existing urban environment, with good access to local populations and services, the station entrance and access has been designed to provide direct access and interchange with key transportation modes. Station access has been designed to prioritise sustainable onward journeys for passengers. Access arrangements and principles for specific transport modes and purposes are:
- Vehicular access will be provided from Francis Crick Avenue on the east, although no general car parking will be provided. Parking is restricted to five Blue Badge holders, two parking bays for station staff and one parking bay for maintenance vehicles. Drop-off/pick-up facilities for passengers by private cars (three bay) and taxis (three bays) are provided. Figure 2.4. shows vehicular access arrangements from Francis Crick Avenue on the east. The station and its facilities are expected to be operated by a Train Operating Company (TOC) who would also manage the parking facility.
 - Cycle and pedestrian access would be from both the east and west (with cycle parking provided on both sides of the railway). This is to ensure that cyclists and pedestrians do not have to take

a circuitous route to access the station and to maximise the benefit of the station for the local community.

- As part of the western access a pedestrian and cycle path would be provided through Hobson's Park approximately parallel to the CGB.
- A pedestrian access would be provided south of the station access road, adjacent to the northern boundary of the AstraZeneca site on the western side of Francis Crick Avenue. This access will serve pedestrians with destinations to the south of the station.
- A segregated path for pedestrians and cyclists will also be provided in the north of the station forecourt, separated by a line of trees, providing a direct access to Addenbrooke's and Royal Papworth hospitals and destinations within the CBC, via the widened signalised crossing on the southern arm of the Francis Crick Avenue/CGB junction.
- Several local bus services operated by Stagecoach and Whippet Coaches stop or pass close to the site, providing potential connections to the city centre and other areas within Cambridge. Bus interchange will be provided from the existing CGB bus stops in the Circus plus bus stops on Francis Crick Avenue. The future CSET scheme will also provide bus stops on Francis Crick Avenue just south of the station access.
- It is anticipated that replacement rail bus services would be available from Francis Crick Avenue; the final location for rail replacement buses to serve the station will be developed in later design stages.

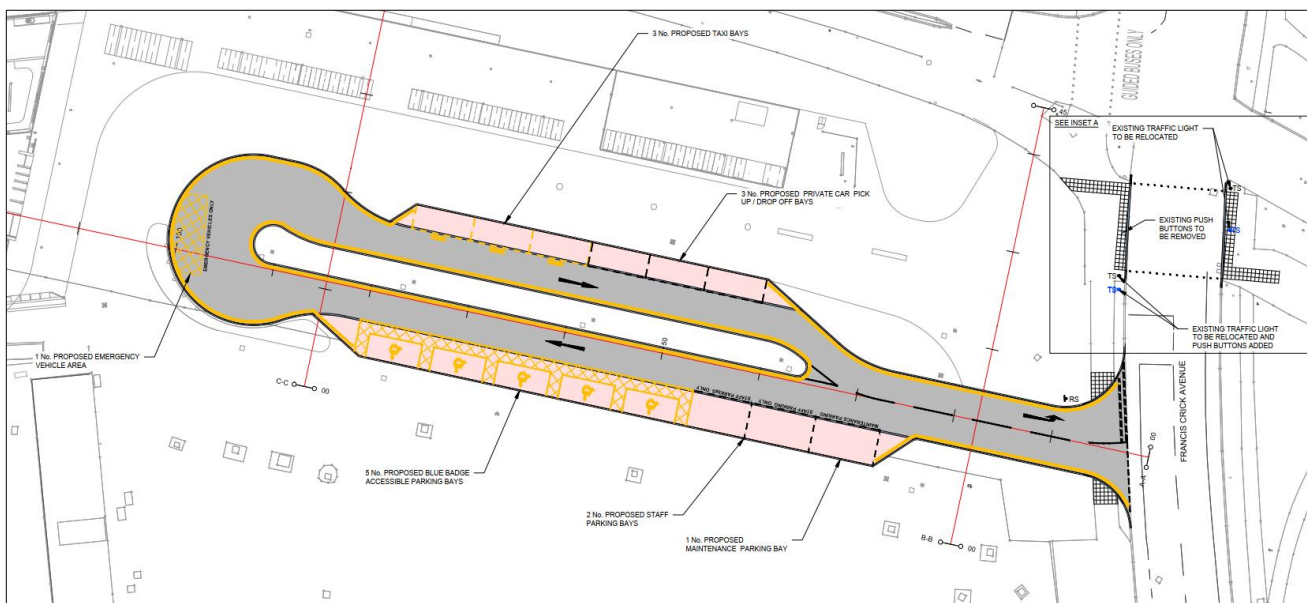


Figure 2.4 – Vehicular access arrangements from Francis Crick Avenue

Interface with CSET

- 2.1.11 The station has been located and designed to maximise sustainable travel opportunities, including interchange with public transport. CSET will provide improved bus interchange with Cambridge South station with a bus stop located on Francis Crick Avenue just south of the eastern station access. As part of ongoing design development, the station highway access has been moved to the south to accommodate the major junction modifications proposed as part of the CSET scheme at the Francis Crick Avenue/Guided Busway junction.

- 2.1.12 Additional details regarding CSET project and how it is proposed to be integrated with the Cambridge South scheme are presented in Section 5 and Section 11.6 of the TA (NR-16).
- 2.1.13 The Cambridge South Station project sponsor and design team are working closely with GCP and the CSET design team to integrate and to maximise potential benefits to users of both schemes. This includes providing access to the station from Francis Crick Avenue, while ensuring that CSET project design requirements are fully met.
- 2.1.14 NR are negotiating a Protocol Agreement with GCP to manage the interfaces between the two projects that confirm that both schemes can be delivered concurrently to minimise construction impacts on the local area. The agreement will also demonstrate how both schemes will interact during operational phases and maximise intended benefits of each scheme by complementing each other. I will provide an update to the inquiry on the terms of the agreement once it has been finally concluded.

Cambridge South Station works

- 2.1.15 The proposed station works comprise of:
- A two-storey station building, ticket office and ticket vending machines, along with automatic ticket gates; facilities such as a retail/catering unit, waiting room, toilets, changing places for the mobility impaired, baby changing facilities, and staff facilities;
 - Four platforms with step-free access via a footbridge and lifts;
 - An emergency evacuation footbridge and stairs a secondary covered footbridge at the platforms' southern end (providing, in an emergency, a secondary means of escape for passengers);
 - Seating and platform canopies for waiting passengers;
 - Cycle parking on both sides of the railway for a total of 1,000 cycles;
 - Pedestrian and cycle access paths on both sides of the railway;
 - A station forecourt containing five parking bays for Blue Badge Holders; two parking bays for station staff; one parking bay for maintenance staff; three bays for drop-off/pick-up by private cars; and three bays for drop-off/pick-up by taxis; and
 - Addition of 2 loop lines.
- 2.1.16 To improve pedestrian and cyclist access to the proposed new station from the west, a new segregated cyclist and pedestrian path across Hobson's Park will be provided. This path will connect into the existing pathway network and provide a safe access to the station for pedestrians and cyclists.
- 2.1.17 The space for 1,000 cycles will be arranged on both sides of the railway (with the precise split to be determined at the detailed design stage) and will include a variety of "Sheffield stands", two-tier racks, secure cycle storage and parking for non-standard cycles. Cycle parking will not be staffed but passive security provided from staffed areas of station. It is presently proposed that at least 20% of total cycle parking will be secure (i.e. within a key fobbed enclosure). At least 5% of the cycle parking will be for oversized bikes with ground anchors, 20% will be Sheffield stands and 50% will be two-tier stands. 90% of spaces are proposed to be covered. The precise configuration of the cycle stands will be finalised during the detailed design of the station.

- 2.1.18 Access for emergency and maintenance vehicles to the western station building will be provided through upgrading of the existing park maintenance track off Addenbrooke's Road. The alignment of the maintenance track is shown on drawings presented in Appendix A.
- 2.1.19 The station is proposed to be built out in phases, whilst maintaining the current live operational railway. Further detail on construction is given in the Proof of Evidence of Mr Barnes (**NRE1.2**).

Transport Benefits

- 2.1.20 There are multiple transport benefits arising from CSIE project, all of which seek to deliver upon existing national and local planning, transport and economic policies and allow the region to continue to prosper whilst encouraging modal shift and reducing road congestion.
- 2.1.21 The CSIE Project will support sustainable transport strategies, encourage a modal shift in sustainable transport and reduce traffic congestion in the local area. The enhancement of sustainable transport access to housing, services and employment will support the growth of the Cambridge southern fringe and CBC area.
- 2.1.22 The CSIE Project would deliver an inclusive "Access for All" railway station, which provides greater connectivity and access to hospitals, the CBC and local community infrastructure. Cambridge South Station will reduce the journey time for people wishing to access the CBC and other areas in the vicinity of Cambridge South Station and will make trips easier for patients visiting the hospitals, medical staff, researchers, other employees and residents accessing the station to travel elsewhere.
- 2.1.23 A new rail station at Cambridge South will reduce city centre reliance, as passengers travelling by rail will no longer need to interchange at Cambridge Station and then use another transport mode to access CBC.
- 2.1.24 The CSIE project will increase public transport connectivity between the CBC and international gateways, in recognition of its international significance.
- 2.1.25 Supporting transport infrastructure improvements will provide safe and convenient access to the station for pedestrians, cyclists and public transport users.
- 2.1.26 Further details of the benefits of the CSIE Project, including transportation benefits, can be found in the Proofs of Evidence of Mr Wingfield (NRE11.2) and Mr Pearson (NRE9.2).

3 Transport Policy Context

Introduction

- 3.1.1 Key points of the national and local transport policy relevant to the CSIE project can be found in the Proof of Evidence of Mr Pearson (**NRE6.2**). In summary, the CSIE Project has been considered against the relevant national and local, planning and transport policy. Assessed against those policies, as per the Planning Statement (**NR12**) and Mr Pearson's evidence, it will be seen that the CSIE Project is in accordance with the up-to-date planning framework, both nationally and for the local area. The proposed creation of a new station at Cambridge South and associated railway infrastructure improvements will provide significant economic, social, and environmental benefits to the local area and wider Cambridgeshire region.
- 3.1.2 In particular, the CSIE Project would deliver an inclusive 'Access for All' railway station, providing greater connectivity and access to Hospitals, the CBC and local community infrastructure. Through providing a more attractive public transport alternative to the private car, the CSIE Project will support sustainable transport strategies, encouraging a modal shift to sustainable transport modes and reducing traffic congestion in the local area.
- 3.1.3 The enhancement of sustainable transport access to housing, services and employment will support the growth of the Cambridge Southern Fringe and CBC area.

4 Traffic and Transport Planning Work undertaken to date

- 4.1.1 The GRIP 3 Option selection was completed in May 2021. Highway works developed at this stage included;
- A station forecourt containing five parking bays for Blue Badge Holders; two parking bays for station staff; two parking bays for maintenance staff; three bays for drop-off/pick-up by private cars; and three bays for drop-off/pick-up by taxis;
 - Highway access onto Francis Crick Avenue just south of the junction with the Guided Busway;
 - Widening the existing pedestrian and cycle crossing on the southern arm of Francis Crick Avenue/Guided Busway junction;
 - Providing a pedestrian and cycle path through Hobson's Park approximately parallel to the Guided Busway;
 - Widening the existing crossing across the Guided Busway connecting Trumpington residential area and Hobson's Park;
 - Providing a new pedestrian crossing across the Guided Busway between Hobson's Park and the Active Recreation Area;
 - Providing cycle and pedestrian access from both the east and west with 1000 cycle parking spaces provided on both sides of the railway;
 - Improving cycle access to the station from the north; and
 - Providing high-quality wayfinding to the station for all transport modes.
- 4.1.2 The CSIE Project is supported by detailed assessments of all principal effects, drawn from extensive consultation with relevant stakeholders including Cambridgeshire County Council, Natural England, English Heritage, and the Environment Agency. These are set out in detail in the Environmental Statement (ES) (NR16).
- 4.1.3 Chapter 17 of the Environmental Statement (ES) reports on the environmental impacts of construction and operation of the proposed Development with respect to transport.
- 4.1.4 A Transport Assessment (TA) was prepared as an Appendix of the ES (NR16 Environmental Statement: Volume 3 – Appendix 17.2). The TA sets out transport issues related to the Project and proposes measures to deal with anticipated transport impacts to improve accessibility and safety for all modes of travel to and from the station, particularly for sustainable alternatives to the car, such as walking, cycling and public transport.
- 4.1.5 The outputs of the traffic and transport planning work undertaken to date are summarised in sections 7 and 8 below.

5 Engagement with Stakeholders

5.1.1 Engagement with key stakeholders has been undertaken both prior and subsequent to the making of the CSIE Order application. In terms of traffic and transport matters, the key stakeholders include;

- Cambridgeshire County Council (CCoC);
- Greater Cambridge Partnership (GCP) for Cambridge South East Transport (CSET);
- Cambridge University Hospitals and University of Cambridge;
- Cambridge Medipark Limited and CBC Estate Management Limited
- Countryside Properties
- Sustrans;
- Camcycle;
- CTC Cambridge; and
- AstraZeneca.

5.1.2 Table 5.1 provides a summary of stakeholder issues raised with respect to transport and how they have been addressed. Evidence of the consultation process with CCoC as the relevant highway authority is provided in Appendix B of this note.

Table 5.1 Summary of Consultation

| Consultee | Contact/ Date | Summary of Issues Raised/Agreed | Response/Action |
|-------------------------------|---------------|---|---|
| Cambridgeshire County Council | 4 March 2020 | Project briefing and initial TA Scoping | Issued TA Scoping Report and received feedback from CCoC. Final TA Scoping Report issued 24 June 2020. |
| Cambridgeshire County Council | 15 May 2020 | Meeting to discuss three station location options following sift from 6 options | Three station location options presented to CoCC. Impacts on NCN 11 at Nine Wells Bridge also discussed, CCoC confirmed this must be retained. Additional data requested by NR including traffic signal timings and plan for FCA/Guided Busway junction, operation of ANPR, cycle data. |
| Cambridgeshire County Council | 22 May 2020 | Meeting with CoCC highway teams. | Discussion on three station location options. Issues raised included lighting, existing layout of FCA/Guided Busway junction, secure cycle parking, shared or segregated path across Hobsons Park, NCN 11 impacts. |
| Cambridgeshire County Council | 9 July 2020 | TA Scoping Review | CCoC provided comments on draft TA Scoping Report. These were incorporated into draft TA. |
| Cambridgeshire County Council | 3 August 2020 | Discussion of TA and embedded mitigation and improvement measures with highways team. | The existing Guided Busway junction would be updated by introducing a new junction arm with traffic signal modifications. The existing crossing on |

| Consultee | Contact/ Date | Summary of Issues Raised/Agreed | Response/Action |
|--|-----------------|---|--|
| | | Interface with CSET scheme. Trip generation and distribution. | <p>the southern arm of Francis Crick Avenue/Guided Busway junction would be widened.</p> <p>Embedded mitigation and improvement measures are discussed in more detail in the Transport Assessment prepared for the proposed Development.</p> <p>Trip generation and trip distribution technical note issued to CCoC.</p> |
| Cambridgeshire County Council | 25 August 2020 | CoCC review of Trip Generation and Trip Distribution technical note issued on 13 August 2020 | <p>The demand forecast is acceptable for use within the Transport Assessment. The trip generation and distribution are agreed.</p> <p>The mode share presented is acceptable for use.</p> <p>Check assignment routing assumptions to ensure the assumptions are robust and credible.</p> |
| Cambridgeshire County Council | 9 February 2021 | CCoC review of draft TA | Comments on draft TA. The mode share, trip generation and distribution, peak hour trip rate, level of cycle parking, provision for taxis and pick up/drop off bay are agreed. |
| Cambridgeshire County Council | 2 March 2021 | Meeting to discuss CCoC comments on draft TA. Included cycle access and cycle parking, road safety, CSET interface, station access junction arrangement, cycle/ped access across Hobsons Park, bus interchange. | <p>CCoC comments incorporated in final TA issued in May 2021.</p> <p>CSIE project must align with CSET project so station highway access should be relocated towards south as a priority junction.</p> |
| Cambridgeshire County Council and Cambridge City Council | 8 December 2021 | Meeting to discuss segregated path across Hobsons Park to provide access to western forecourt and new pedestrian crossing across Guided Busway between Hobsons Park and Active Recreation Area | CCoC to provide pavement specification for segregated path and confirm lighting requirements. CCoC contractor will construct new pedestrian crossing across Guided Busway |
| GCP for CSET | 8 July 2020 | Initial meeting to introduce and discuss interface between CSIE and CSET schemes to integrate projects and minimise impacts during construction | NR presented current CSIE project proposals. Discussions included station highway access, CSET proposals at FCA/Guided busway junction, consultation, CSET stop on FCA, traffic modelling, construction programme overlap and agreement to continue interface meetings. |
| GCP for CSET | 14 August 2020 | CSIE and CSET design integration meeting | Topics included public realm integration, drainage strategy and revised CSET layout, including junction of FCA/Guided Busway, update on programme and consultation. Discussion around construction compounds for both projects south of FCA and the potential temporary diversion of NCN 11. |

| Consultee | Contact/ Date | Summary of Issues Raised/Agreed | Response/Action |
|------------------|-------------------|---|---|
| GCP for CSET | 10 September 2020 | CSIE and CSET design integration meeting | <p>CSET confirmed drainage strategy would remove need for mid attenuation basin in station forecourt area, which enables station highway access to be relocated to south to tie in with CSET scheme.</p> <p>Discussion around latest CSET layout for junction of FCA/Guided Busway including Sawston Greenway ped/cycle scheme along west side of FCA</p> <p>Discussion about construction programme overlap and access to compounds for both projects south of FCA and the potential temporary diversion of NCN 11. CAD files to be shared</p> |
| GCP for CSET | 27 January 2021 | CSIE and CSET EIA meeting | Update on EIA programmes for each scheme. -Agreement on the areas of the design where the two schemes overlap to ensure consistency when preparing the Environmental Statement (ES) for both schemes. Joint approach to construction cumulative impacts. |
| GCP for CSET | 6 July 2021 | CSIE and CSET design integration meeting | Design and interaction of the Orders. Land requirements, utilities protective provisions and SoCG. |
| GCP for CSET | 7 September 2021 | CSIE and CSET design integration meeting | <p>Co-ordination between construction compounds to the south of FCA. Integration of Cambridge South station access into the CSET major junction modification at FCA/Guided Busway junction.</p> <p>Further co-ordination required for drainage strategy for both schemes.</p> |
| GCP for CSET | 4 November 2021 | CSIE and CSET design integration meeting | Discussion around design interface table. |
| GCP for CSET | 3 December 2021 | CSIE and CSET design integration meeting | Agreed outstanding design integration issues for highways, drainage, landscaping and construction compounds. |
| CBC Stakeholders | 22 April 2020 | CSIE station location options briefing meeting with CBC Stakeholders including AZ, UoC, CUH, Countryside Properties | <p>CBC stakeholders briefed on 3 options for station location, including access arrangements.</p> <p>Discussion about potential construction compounds.</p> |
| CBC Stakeholders | 20 May 2020 | CSIE station location options briefing meeting with CBC Stakeholders including AZ, UoC, CUH, Countryside Properties | <p>Update on 3 station options.</p> <p>Discussion about a wider taxi strategy for the Campus, there is a long-term plan to establish a taxi rank on the Campus, taxis tend to wait on local roads away from CBC.</p> |

| Consultee | Contact/ Date | Summary of Issues Raised/Agreed | Response/Action |
|-------------------------------|--|---|---|
| | | | <p>No stopping on FCA allowed now or in the future, controlled by ANPR.</p> <p>Arrange a separate meeting on bus stops.</p> |
| CBC Stakeholders | 5 June 2020 | Bus interchange meeting with CBC Stakeholders | <p>Station needs to be integrated with CSET to provide good bus interchange. Bus facilities should include real-time information, shelter, lighting, space and size of interchange.</p> <p>No current plans or funding for an orbital bus service and the current bus distribution may be different in the future</p> <p>The Cambridge South Station sponsor and design teams are involved in ongoing liaison with GCP and the CSET design team in order to integrate the two schemes and to maximise potential benefits to users of both schemes</p> |
| CBC Stakeholders | 10 June 2020 | CSIE option selection meeting with CBC Stakeholders including AZ, UoC, CUH, Countryside Properties | <p>CBC stakeholders briefed on selection of northern station location. Discussions about integration with CSET scheme, maintenance access to Active Recreation Area and ES Scoping.</p> <p>Opportunity to reinstate Campus Contractors' and Stakeholders' Forum to manage logistics</p> |
| CBC Stakeholders | 30 July 2020 | CSIE stakeholder meeting with CBC Stakeholders including AZ, UoC, CUH, Countryside Properties, CSET | CSET presented their scheme to stakeholders. NR presented Cambridge South station space planning including transport facilities, construction phasing/methodology and temporary diversion of NCN 11 during construction. |
| CBC Stakeholders | Regular liaison meetings commencing 11 November 2020, latest on 24 November 2021 | CSIE stakeholder meeting with CBC Stakeholders including AZ, UoC, CUH, Countryside Properties, Prologis, CSET | CSET presented their updated design for the FCA/Guided busway junction. Drainage strategies to be shared. Updates on consultation for both CSIE and CSET. |
| CBC Estate Management and CML | Regular liaison meetings commencing 11 July 2020, latest on 16 December 2021 | Discuss ANPR matters on Cambridge Biomedical Campus in relation to Cambridge South Station | Review ANPR journey time parameters and assess if parameters sufficient for station journey such as drop-off. Timings confirmed as suitable since ANPR is calibrated for rat-running journeys through CBC at speeds greater than 30mph. |
| Countryside Properties | 31 July 2020 | Discuss CSIE project impacts on Hobsons Park | Landscape proposals for park, existing maintenance access and land ownership. |
| Sustrans | 12 May 2020 | Discussion around station options and cycle facilities/access, together | Northern station option selected with 1000 cycle parking spaces plus improved |

| Consultee | Contact/ Date | Summary of Issues Raised/Agreed | Response/Action |
|------------------|--|---|---|
| | | with temporary diversion of NCN 11 during construction | access. Temporary diversion of NCN 11 during construction no longer required. |
| Camcycle and CTC | 15 May 2020 | Discussion around station options and cycle facilities/access, together with temporary diversion of NCN 11 during construction. | Northern station option selected with 1000 cycle parking spaces plus improved access. Temporary diversion of NCN 11 during construction no longer required. Segregated cycle/pedestrian path should be provided across Hobsons Park. Security and accessibility of cycle parking is key. |
| Camcycle and CTC | 5 August 2020 | Confirmation of northern station option. Temporary diversion of NCN 11 during construction. | Northern station option selected with 1000 cycle parking spaces plus improved access. Temporary diversion of NCN 11 during construction no longer required. Sawston Greenway will improve connectivity to south. Run ped/cycle phase across FCA/Guided busway junction in parallel with bus phases to increase crossing times. Hobsons Park cycle/ped path must comply with LTN 1/20. |
| Camcycle and CTC | 15 October 2020 | Cycle facilities at the station and cycle links | Hobsons Park cycle/ped should be segregated. Discussion around improved crossing across guided busway between Trumpington and Hobson's Park. Pedestrian and cycle route should be segregated from eastern forecourt. Cycle parking could be expanded on west side of station at a later date. |
| AstraZeneca | Regular liaison meetings commencing 14 July 2020, latest on 14 December 2021 | Interface between CSIE, CSET and AZ development | Ongoing discussions between CSET and AZ design teams to integrate projects, particularly boundaries, site access, drainage, landscape. |

5.1.3 Engagement with the CSIE Project's stakeholders has continued following the submission of the CSIE Order application and is currently ongoing. A 'relationship manager' has been appointed for each organisation or individual who has raised an objection or representation in relation to the Order application. These relationship managers provide a consistent and direct point of contact to the project team and enable questions and concerns to be promptly considered and addressed. Regular meetings have been and are being held and correspondence exchanged thereby maintaining an ongoing dialogue with parties. The post-application meetings held with traffic and transport stakeholders are identified and captured within the table above.

6 Methodology for the traffic and transport assessment

- 6.1.1 The assessment methodology for the ES traffic and transport assessment is described in detail in section 17.2 of the ES and summarised below.
- 6.1.2 The following relevant guidance is referred to in the environmental assessment:
- The Design Manual for Roads and Bridges (DMRB) LA 104 Environmental Assessment and Monitoring (2019) (**D33**); and
 - Guidelines for the Environmental Assessment of Road Traffic ((Institute of Environmental Management and Assessment (IEMA), 1993) ('IEMA Guidelines') (**D34**))
- 6.1.3 For consideration of traffic impacts the Study Area for the proposed Development is focused upon the highway network to be used by construction vehicles and highway network associated with the operational phase, the adjacent land uses and sensitive receptors.

Methodology for Establishing Baseline Conditions

- 6.1.4 The existing baseline data has been derived from multiple sources and a desktop-review undertaken together with site visits. Sources of baseline data are provided below:
- Department for Transport (DfT) counts from 2019 (as agreed with CCoC) along the construction routes to obtain Average Annual Daily Traffic (AADT) flows;
 - DfT's statistics table TRA0307 Motor vehicle traffic distribution by time of day and day of the week on all roads was used to apportion AADT data to derive 12-hour (07:00-19:00hrs) traffic flows;
 - Calculation of traffic increases above the baseline;
 - Height and width restrictions for construction vehicles across all the designated construction routes;
 - Pedestrian and cycle facilities along the construction routes;
 - Traffic flow data from the TA (NR-16, Appendix 17.2) for the Netherhall Farm (20/01972/OUT) development in the vicinity of the CSIE Project;
 - Site investigations undertaken in January, March, August 2020 and October 2021;
 - Bus and rail timetable and routing information obtained from the CCoC website;
 - Analysis of committed development schemes in CBC and South Cambridge to capture potential traffic growth and proposed construction routes;
 - Road collision data for the latest 60-month for all roads on the construction and operational routes and connecting junctions;
 - Information about PRow obtained from the CCoC website; and
 - Online mapping and aerial photographs from Google maps.
- 6.1.5 Due to COVID-19 restrictions current and recent traffic flows and travel patterns are not representative of normal traffic conditions. Therefore, historical traffic flow data have been obtained from DfT traffic counters and from the TA for the Netherhall Farm (20/01972/OUT) development in the vicinity of the proposed Development, for links along the proposed construction routes, to capture and complete an initial analysis of baseline traffic flows.

- 6.1.6 The TEMPro (Trip End Model Presentation Program) software (version 7.2b) has been used to obtain the traffic flow growth factor from 2019 to 2023 within a geographical area of the study area. The TEMPro software tool is based on the National Trip End Model (NTEM) forecasts and traffic growth from the National Traffic Model (NTM). TEMPro includes projected population and employment growth and is based on information provided by local planning authorities based on committed developments. The software tool enables the calculation of traffic growth factors for specified time periods for selected areas.
- 6.1.7 The obtained traffic growth factor was then applied to the 2019 DfT count data to estimate the 2023 future baseline traffic flows during the peak construction period along all vehicle routes to construction compounds in accordance with standard industry practice.
- 6.1.8 Traffic Growth forecasts for 2031 future baseline for the operational phase have been based on the estimates carried out for the CBC Transport Needs Review report (**D30**). This report included detailed calculations for planned and predicted growth in staff and visitors to the CBC up to 2031 and associated additional vehicular trips that would take place as a result of this increase. Additional trips were then added to the 2017 Baseline traffic flows to estimate the future baseline traffic flow. This approach is more robust as it uses a higher growth factor compared to growth factors derived from TEMPro and it takes into account all committed and planned developments in the CBC up to 2031.
- 6.1.9 The methodology for establishing the baseline conditions was agreed with CCoC as part of the TA Scoping (See p.2 of Appendix B of this note).

Methodology for Assessing Impacts

- 6.1.10 The assessment methodology is broadly based on assessment criteria developed for similar major infrastructure projects.
- 6.1.11 The assessment addresses potential effects relating to impacts from construction and operational traffic during the peak construction period (2023) and the operational assessment year (2031) and considers the following broad receptor groups or categories in relation to traffic and transport effects:
- Transport users: drivers and passengers; pedestrians; cyclists; equestrians (if applicable); public transport users; operators and employees; commercial vehicle users; emergency vehicles users and freight users;
 - Sensitive receptors: such as schools, playgrounds, hospitals, tourist attractions etc; and
 - Transport infrastructure: road network, CGB network, and pedestrian and cycle networks.
- 6.1.12 This assessment has been informed by a desk-based study, and discussions with the design team, in particular around anticipated construction traffic movements and proposed mitigation measures. Discussions have also been held with key consultees to incorporate their requirements, particularly CCoC. Professional judgement has been applied to determine whether significant effects may arise which have not been identified by the use of the assessment criteria.
- 6.1.13 The assessment examines a robust case in terms of traffic and transport effects. The assessment of construction phase effects was undertaken for 2023 as this is the year when the highest predicted levels of construction traffic are expected to occur. The 2023 construction assessment year was agreed as part of the ES Scoping. The assessment of the operational phase was undertaken for 2031 as this is the year when the projected passenger numbers using the station will be reached and CBC

is fully developed. The 2031 operational assessment year has also been agreed with CCoC (See p.31 of Appendix B) and aligns with the assessments in the TA (NR-16, Appendix 17.2).

6.1.14 For road users, the following rules taken from the IEMA Guidelines are used to define the scale and extent of the assessment:

- Rule 1: Include highway links where the total traffic flows are predicted to increase by more than 30% (or where the number of Heavy Good Vehicles (HGVs) is predicted to increase by more than 30%); and
- Rule 2: Include any other specifically sensitive areas where traffic flows are predicted to increase by 10% or more.

6.1.15 Increases below 10% are generally considered 'not significant' given that daily variations in background traffic flow would usually fluctuate by this amount. Therefore, changes in traffic flow below this level are assumed to result in no discernible environmental impact.

6.1.16 Where Rule 1 and Rule 2 would apply, the following potential environmental effects on 'existing road users' would be considered and likely would need to be addressed.

- Severance (reduced ability for pedestrians and cyclists to crossroad links);
- Pedestrian and cyclist delay (changed journey times and distances for pedestrians and cyclists);
- Driver delay (Changed journey times and distances for private and commercial vehicle occupants);
- Public transport users delay (Changed journey times, distances or frequencies for public transport);
- Pedestrian and cycle amenity (loss of amenity for vulnerable road users);
- Fear and intimidation (fear and intimidation issues for pedestrians and cyclists due to increased traffic flows and change in composition);
- Accidents and safety (Reduction in road safety for all road users); and
- Parking (temporary loss of parking and loading facilities due to the need to accommodate construction traffic and holding areas).

Significance Assessment Criteria

6.1.17 In accordance with the IEMA Guidelines, the assessments have been based upon the relative change between the baseline conditions and the situation during the construction and operational phases. The effects along key road links of the adjacent road network affected by traffic associated with the proposed development have been assessed.

6.1.18 The significance of an environmental effect is a function of the value (sensitivity) of the receptor and the magnitude or scale of the impact (change).

6.1.19 The significance of the effects have been determined from a combination of receptor sensitivity and the magnitude and duration of the impact on receptors. The DMRB LA 104 provides advice on typical descriptors of environmental value, magnitude of change, and significance of effects and this has been used to develop appropriate sensitivity criteria.

6.1.20 For the purposes of this assessment, and in line with DMRB LA 104 effects of moderate or greater significance are considered to be significant in EIA terms.

6.1.21 The impacts of traffic may be on the following receptors (as set out in the 'IEMA Guidelines')

- People at home;
- People at work;
- Sensitive groups including children, the elderly and the disabled;
- Sensitive locations such as hospitals, churches, schools, and historical buildings;
- People walking;
- People cycling;
- Open spaces, recreational areas, shopping areas;
- Sites of ecological/nature conservation value; and
- Sites of tourist/visitor attraction.

6.1.22 The assessment sensitivity criteria based on DMRB and IEMA guidance and professional judgement is shown in Table 6.1.

Table 6.1 Receptor Sensitivity

| Sensitivity | Type |
|-------------------|---|
| High | Receptors of greatest sensitivity to traffic flows: schools, colleges, nurseries, playgrounds, accident blackspots, retirement homes, urban/residential roads without footways that are used by pedestrians. |
| Medium | Traffic flow sensitive receptors, including: congested junctions, doctors' surgeries, hospitals, shopping areas with roadside frontage, roads with narrow footways, un-segregated cycle ways, community centres, townhalls, parks, recreation facilities. |
| Low | Receptors with some sensitivity to traffic flows: places of worship, public open space, nature conservation areas, listed buildings, tourist attractions and residential areas with adequate footway provision. |
| Negligible | Receptors with low sensitivity to traffic flows and those sufficiently distant from affected roads and junctions. |

6.1.23 The methodology proposed for determining the magnitude of impact follows guidance set out by the DMRB LA 104 (Ref 17-2) together with professional judgement. The order of magnitude criteria is shown in Table 6.2

Table 6.2 Magnitude of Change (Impact) Categories

| Magnitude of Change | Change from Baseline |
|---------------------|---|
| Major | Total loss or major alteration to key elements or features of the baseline conditions to the extent that post-scenario character or composition of baseline conditions will be fundamentally changed. |
| Moderate | Loss or alteration to one or more key elements or features of the baseline conditions to the extent that post-scenario character or composition of the baseline conditions will be materially changed. |
| Minor | Minor shift away from baseline conditions. Changes arising will be detectable but not material; the underlying character or composition of the baseline conditions will be similar to the pre-scenario situation. |
| Negligible | Very little change from baseline conditions. Change is barely distinguishable, approximating to a 'no change' situation. |

6.1.24 The following parameters have been considered when assessing significance of effects:

- Beneficial, adverse or neutral;
- Extent (the area over which the effect occurs);
- Duration (the time for which the effect is expected to last);
- Reversibility (permanent or temporary); and
- Timing and frequency.

6.1.25 The significance of transport effects has been determined by considering the identified impact magnitudes on the receptors affected by those impacts (taking account of their sensitivity) to determine the significance of effects. The potential significance of effect could be neutral, slight, moderate or large. Moderate and Large adverse/beneficial effects are assumed to represent Significant effects. Slight and Neutral adverse/beneficial effects are assumed to represent Not Significant effects.

6.1.26 Table 6.3 provides a matrix of magnitude of impact against sensitivity of receptors to identify where significant effects are anticipated to occur. The significance matrix is based on Table 3.8.1 presented in the DMRB's LA 104 Environmental Assessment and Monitoring guidance and professional judgement.

Table 6.3 Significance of Effect Matrix

| Sensitivity of Receptor | Magnitude of Impact | | | |
|-------------------------|---------------------|-------------------|--------------------|-------------------|
| | Major | Moderate | Minor | Negligible |
| High | Large | Large or Moderate | Slight or moderate | Slight |
| Medium | Large or Moderate | Moderate | Slight | Neutral or slight |
| Low | Slight or moderate | Slight | Slight | Neutral or slight |
| Negligible | Slight | Neutral or slight | Neutral or slight | Neutral |

6.1.27 Sensitivity of roads along the proposed construction routes and station access routes was assigned based on the presence of sensitive receptors and level of provision and quality of existing facilities, such as narrow well-used footways along busy roads or accident black spots and is shown in Table 6.4. The scope of the EIA and its methodology were agreed with the Transport Infrastructure Planning Unit of the DfT, including the environmental receptors and their value.

Table 6.4 Sensitivity of Roads

| Road Name | Sensitivity |
|--|---------------|
| Addenbrooke's Road | Sensitive |
| A1309 Hauxton Road (between M11J11 and the junction with Addenbrooke's Road) | Not Sensitive |
| A1309 Hauxton Road (north of the junction with Addenbrooke's Road) | Sensitive |
| A1309 High Street | Sensitive |
| A1134 Long Road | Sensitive |

| Road Name | Sensitivity |
|------------------------------------|---------------|
| A1307 Babraham Road/Cambridge Road | Not Sensitive |
| Granham's Road | Not Sensitive |
| Francis Crick Avenue | Sensitive |
| Robinson Way | Sensitive |

Transport Assessment

- 6.1.28 The TA (NR-16, Appendix 17.2) has been produced to support the Environmental Impact Assessment (EIA) and subsequent Environmental Statement (ES) which forms part of the CSIE Order application.
- 6.1.29 The TA assesses the potential transport impacts of the proposed development and proposes appropriate mitigation measures. It adopts the national guidelines and approaches where possible, taking account of the specific nature of the development. The TA broadly follows the structure and content identified in Transport Assessment Requirements (2019), produced by CCoC.
- 6.1.30 Discussions have been held with CCoC on various elements of the TA scope as a means of agreeing on and finalising the scope of the assessment. An initial project briefing and TA Scoping meeting took place in March 2020 and the TA Scoping Report was amended to incorporate CCoC comments. The report provided a description of the work proposed to be undertaken as part of the TA and set out the proposed technical, spatial and temporal scope of the assessment.
- 6.1.31 A draft TA was issued to CCoC in November 2020. Further meetings took place with CCoC in August 2020 and March 2021 to discuss embedded mitigation and improvement measures with the highways team including the station highway access junction. The TA (NR-16, Appendix 17.2) was issued in May 2021.

Challenges to traffic and transport modelling and assessment work

- 6.1.32 A number of objectors to the CSIE Order have challenged or questioned some of the traffic and transport modelling and assessment work undertaken by Network Rail. Responses to these challenges can be found in Section 9 below together with Appendices E, G and H.

7 Traffic and Transport impacts and Effects during Construction

7.1.1 This section summarises the potential traffic and transport impacts and effects of the CSIE Project during the construction phase, the mitigation proposed, and any residual effects anticipated.

Construction Compounds and Construction Traffic Forecasts and Routes

7.1.2 Proposed construction compound locations are shown in Figure 7.1 below.

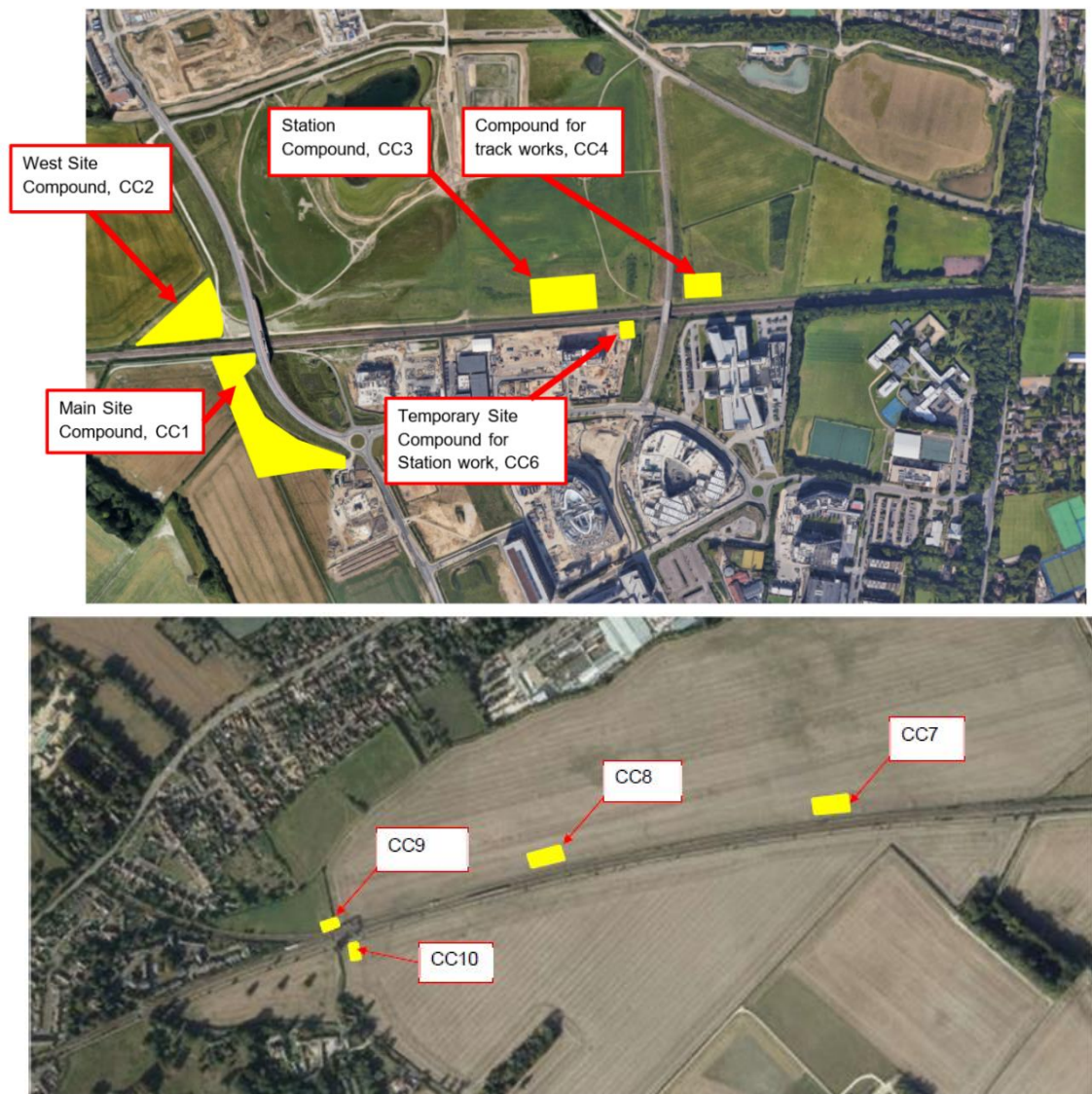


Figure 7.1 Construction Compounds

7.1.3 Identified construction access points to the site from the public highway are required as follows:

- AP1 provides access to Construction Compound (CC)1 from Addenbrookes Road to east of the railway on the Addenbrookes Road/Dame Mary Archer Way roundabout at the end of Francis Crick Avenue;
- AP2 provides access to CC2, CC3, CC7, CC8 and CC9 from Addenbrookes Road to west of the railway via a track just east of Hobsons Brook to the south of Nine Wells Bridge, 1544C. The junction entrance will need to be widened to accommodate passing vehicles in the entrance;
- AP3 provides access to CC5 and CC6 from Long Road, between the railway and the guided busway corridor;
- AP4 provides access from Francis Crick Avenue north of the adjacent Guided Bus corridor the east of the railway;
- AP5 provides access to CC6 from Francis Crick Avenue south of the adjacent Guided Bus corridor the east of the railway; and
- AP6 provides access to CC10 from Granham's Road.

7.1.4 The proposed construction compound access points and construction traffic routes are shown in Appendix C.

7.1.5 Table 7.1 shows estimated construction vehicle movements per construction access point per weekday during the peak construction period in 2023.

Table 7.1 Estimated Construction Vehicle Movements, per Access Point, per Weekday

| Access Point | Car/Vans (Staff) | HGVs (Materials) | HGVs (Other) | Vans (Other) | Total HGV Movements | Total Car/Van Movements |
|--------------|------------------|------------------|--------------|--------------|---------------------|-------------------------|
| AP1 | 76 | 46 | 52 | 156 | 98 | 232 |
| AP2 | 76 | 46 | 52 | 156 | 98 | 232 |
| AP3 | 0 | 4 | 8 | 22 | 12 | 22 |
| AP4 | 0 | 0 | 2 | 4 | 2 | 4 |
| AP5 | 0 | 4 | 8 | 22 | 12 | 22 |
| AP6 | 0 | 0 | 2 | 4 | 2 | 4 |
| Total | 152 | 100 | 124 | 364 | 224 | 516 |

7.1.6 As can be seen from Table 7.1 in total 224 HGV movements per day (112 vehicles/deliveries) and 516 car/van movements per day (258 vehicles) will occur on the local road network as a result of construction activities for the proposed development during the peak construction period.

7.1.7 An assessment has been undertaken to identify the likely percentage increase in HGV and in total traffic due to construction on the local road network using 2023 baseline traffic flow data. The predicted increase has been assessed against 12-hour weekday flows (07:00-19:00 hrs).

7.1.8 Table 7.2 sets out the predicted increase in 12-hour (07:00-19:00 hrs) weekday traffic on local roads that could potentially form the proposed construction routes, associated with predicted average construction HGV traffic flows.

Table 7.2 Predicted increase in 12-hour (07:00-19:00) traffic against future 2023 baseline

| DfT Traffic Count Number | Road Name | 2023 Future Baseline, 12-hour (07:00-19:00) Mon-Fri flows | | 2023 Peak Construction Traffic | | | | 2023 Future Baseline + Development, 12-hour (07:00-19:00) Mon-Fri flows | | % Increase in 12h flows (07:00 - 19:00) | |
|-----------------------------------|------------------------------------|---|------------------|--------------------------------|------|-------------------------------|------------------|--|------------------|--|------------------|
| | | Total Vehicle Movements | HGV Movements | Total Vehicles | HGVs | Total Vehicle Movements | HGV Movements | Total Vehicle Movements | HGV Movements | Total Vehicle movements | HGV Movements |
| 807621 | Addenbrooke's Road | 10,605 | 134 | 243 | 105 | 486 | 210 | 11,301 | 344 | 6.6% | 156% |
| 81426 | Addenbrooke's Road | 13,602 | 300 | 243 | 105 | 486 | 210 | 14,298 | 510 | 5.1% | 70% |
| 81422 | A1309 Hauxton Road | 27,435 | 609 | 254 | 111 | 508 | 222 | 28,165 | 831 | 2.7% | 36% |
| 81423 | A1309 Hauxton Road | 15,140 | 517 | 11 | 6 | 22 | 12 | 15,174 | 529 | 0.2% | 2% |
| 47586 | A1309 High Street | 16,687 | 480 | 11 | 6 | 22 | 12 | 16,721 | 492 | 0.2% | 2% |
| 7990 | A1134 Long Road | 12,026 | 320 | 11 | 6 | 22 | 12 | 12,060 | 332 | 0.3% | 4% |
| 77145 | A1307 Babraham Road/Cambridge Road | 13,445 | 307 | 2 | 1 | 4 | 2 | 13,451 | 309 | 0.0% | 1% |
| NA* | Granham's Road | 4,124 | 82 | 2 | 1 | 4 | 2 | 4,130 | 84 | 0.1% | 2% |
| NA** | Francis Crick Avenue | 4,627 | 126 | 13 | 7 | 26 | 14 | 4,667 | 140 | 0.9% | 11% |

* 2019 Baseline flows were taken from the ES for Land at Newbury Farm development (19/1168/OUT)

** Traffic flows were estimated using survey data from Thursday 10 October 2019 provided by the CBC

- 7.1.9 As can be seen from Table 7.2, the predicted increase for 12-hour (07:00-19:00 hrs) total traffic flows is below 10% for all assessed roads.
- 7.1.10 As can be seen from Table 7.2, the predicted increase for 12-hour (07:00-19:00 hrs) HGV flows exceeds 10% threshold (Rule 2) for Addenbrooke's Road and Francis Crick Avenue (roads identified as Sensitive) and the 30% threshold (Rule 1) for A1309 Hauxton Road, between M11J11 and the junction with Addenbrooke's Road (identified as Not Sensitive). Therefore, the predicted increase triggered the need for further assessment for these roads as summarised in Tables 7.3, 7.4 and 7.5.

Construction Approach and Mitigation of Construction Effects

- 7.1.11 The design and mitigation measures outlined in this section will be applied throughout the construction phase of the proposed development. The assessment of residual and cumulative effects has been undertaken assuming these measures are in place. The identified measures would be also included in the outline Code of Construction Practice (CoCP Part A) (Appendix 2.4 of the ES) with further detail to follow in CoCP Part B which will be secured as a planning condition of the planning consent as identified in Schedule 1 of the Request for Deemed Planning Permission (NR12).
- 7.1.12 The Code of Construction Practice (Part B) shall include a Construction Traffic Management Plan (CTMP) as identified in Schedule 1 of the Request for Deemed Planning Permission (NR12). This planning condition needs to be formally discharged before work on site can commence. The CTMP would be prepared by the appointed contractor and submitted to CCoC to ensure that all traffic associated with the project's construction works operate in a safe and compliant manner at all times. The CTMP would provide a framework to manage all types of vehicle movement to and from the site. It will provide details of the proposed traffic management of delivery vehicles and other traffic generated during the construction phase and would identify measures designed to avoid and reduce the impact wherever possible between construction site traffic and other road users.
- 7.1.13 The CTMP would form part of CoCP Part B and would be prepared by the Contractor in accordance with CCoC guidance. Proposed measures to be included in the CTMP are outlined below.

General Mitigation Measures

- 7.1.14 The appointed contractor would schedule and manage works traffic in order to minimise impacts on other road users along the proposed construction routes, including taking all reasonable steps to ensure that, where possible, construction traffic travels to and from the site via the strategic road network, so as to limit any effect on local roads.
- 7.1.15 The appointed contractor will comply with safety standards and practices related to Construction Logistics and Community Safety (CLOCS).
- 7.1.16 All construction HGVs would adhere to the designated construction routes to and from the site, details of which are provided in Appendix C. Construction traffic route signage will direct vehicles to the specific construction compound access points
- 7.1.17 A copy of the construction route plan would be provided to all suppliers and haulage operators when orders are placed to ensure that drivers are fully briefed on the required route to take.
- 7.1.18 Construction HGV movements would be planned to avoid network peak hours.

- 7.1.19 Network Rail has included as part of the proposals haul roads between construction compounds to reduce construction traffic on the road network.
- 7.1.20 Appropriate temporary road markings and construction site signage will be erected on the local road network in the vicinity of each of the proposed construction accesses, and at other locations as considered necessary, to warn other road users of construction activities and associated construction vehicles. An example of signage to be installed is “Caution Site Access”.
- 7.1.21 If required, traffic marshals and other staff will be used to marshal HGVs into position at the access point from and onto the highway and from and into the construction compound sites.
- 7.1.22 All drivers would be under instruction to drive at or under the speed limits, to pay specific attention to pedestrians and cyclists and give way to pedestrians and cyclists using uncontrolled crossings on Addenbrooke’s Road and at the Francis Crick Avenue/Addenbrooke’s Road/Dame Mary Archer Way roundabout.
- 7.1.23 Temporary traffic management for the construction of the station access road would be designed to minimise delay to all vehicles on Francis Crick Avenue.
- 7.1.24 Adherence to procedures would be monitored by a suitably qualified person.
- 7.1.25 All construction HGV movements to / from the site would be limited to the following hours:
- Monday to Friday 07:00-19:00 hrs (this includes up to an hour before and after core working hours to allow vehicles to arrive on site on time for commencement of daily construction activities and leave site at the end of the day;
 - Saturday 08.00 hrs - 13.00 hrs; and
 - No Sunday, bank holiday or public holiday working.
- 7.1.26 Work would be permitted outside of these hours only in exceptional circumstances (and only by prior agreement with CCoC).
- 7.1.27 The surrounding land uses will continue to operate during the planned construction period; therefore, the site operations and proposed construction routes have been developed so as to minimise the impact on the surrounding area, other road users and receptors. All reasonable measures would be taken to enable full access to neighbouring properties.
- 7.1.28 Emergency access protocols would be put in place and would be identified within the site health and safety plan.
- 7.1.29 All construction works will be undertaken with strict adherence to the current CDM regulations.
- 7.1.30 On a typical day, heavy plant, cranes and Abnormal Indivisible Load (AIL) vehicles are not expected to visit the site. There may be occasions when these types of vehicles are required. These movements will be coordinated to arrive and depart the site during quieter periods (i.e. outside of the network peak periods).
- 7.1.31 During ground works operations, vehicles exiting the site may inadvertently carry deposits of material trapped on their tyres. To ensure that this does not occur, a wheel-cleaning regime will be implemented throughout the duration of the construction phase. The contractor will undertake to

sweep the roads on the local highway network, as is reasonably necessary, to remove any spoil or debris deposited on the highway resulting from the construction period.

Staff Travel

- 7.1.32 As a worst-case estimate, the proposed development is likely to have an average of 150-200 workers and staff on site during the project. There will be some car parking at the two main compounds. At present, site compounds have been envisaged to have a maximum of around 75 car parking spaces. If required, crew buses will ferry workers to the satellite compounds.
- 7.1.33 In addition, a construction workforce Green Travel Plan would be prepared by the appointed contractor as part of the CoCP Part B with the aim of encouraging the use of sustainable modes of transport to reduce the impact of workforce travel on local residents and businesses. This will be secured as a planning condition of the planning consent as identified in Schedule 1 of the Request for Deemed Planning Permission (NR12).

Assessment of Effects

- 7.1.34 Taking into account the proposed construction design and mitigation measures outlined above, potential effects on the identified receptors and existing road users, the potential magnitude of impact has been established.
- 7.1.35 The potential magnitude of impact has also been informed by the fact that the potential impacts would have limited extent (would only affect receptors and users of roads along the proposed construction routes); be temporary in nature and occur only during the construction phase.
- 7.1.36 Table 7.3, Table 7.4 and Table 7.5 summarise the assessed effects. It can be seen that the predicted effects on existing road users along Addenbrookes Road, Francis Crick Avenue and Hauxton Road between M11J11 and the junction with Addenbrooke's Road are assessed as Not Significant due to the temporary nature of this impact and the mitigation measures set out above to be implemented in the CTMP.

Table 7.3 Assessment of Effects Summary – Addenbrooke's Road

| Effect | Description of Effect | Assessment of Effect | Significance of effect |
|------------------------------|--|--|--|
| Severance | Reduced ability for pedestrians and cyclists to cross the road. | <p>Trip attractors and generators in the vicinity of Addenbrooke's Road are located mostly on the northern side of the road. On the southern side the road is mostly fronted by agricultural land and open space. The road acts as a main route to the CBC from the west and the wider area via the M11.</p> <p>Identified main desire lines across Addenbrooke's Road include:</p> <ul style="list-style-type: none"> • a desire line between two parts of Clay Farm development located on both sides of the road; and • a desire line from the north to Great Shelford and trip generators along the A1301 Shelford Road. <p>These and other desire lines are served by the existing controlled crossings. This includes signalised crossings at the junctions with the A1309 Hauxton Road, Glebe Farm Drive and A1301 Shelford Road and the crossing directly east of the junction with Kingfisher Gardens. These crossings will ensure that the effect on pedestrian and cyclist delay and severance associated with construction traffic will not be significant.</p> | Slight Adverse Not Significant |
| Pedestrian and cyclist delay | Changed journey times and distances for pedestrians and cyclists | <p>Nevertheless, drivers will be instructed to pay special attention to pedestrians and cyclists, particularly when driving through residential areas and when undertaking turning movements at the construction site access and egress points. They will also be instructed to give way to pedestrians and cyclists waiting to cross the road at the uncontrolled crossings, including at the Addenbrooke's Road/Hobson Avenue Roundabout and Addenbrooke's Road/Francis Crick Avenue/Dame Mary Archer Way Roundabout and at the uncontrolled crossing on the bridge over Hobson's Brook. These measures would be included in the CTMP which will form part of the CoCP Part B which will be submitted to the Local Planning Authority to discharge a deemed planning condition as identified in Schedule 1 of the Request for Deemed Planning Permission (NR12).</p> <p>Taking the above into account, the potential magnitude of impact on severance and pedestrian and cycle delay along Addenbrooke's Road is judged to be Negligible. Given presence of a number of sensitive receptors with High assigned value, the potential effect is reported as being reported as Slight Adverse. For these reasons, the predicted effect on pedestrian and cyclist delay is unlikely to be significant.</p> | |
| Driver delay | Changed journey times and distances for private and commercial vehicle occupants | <p>No road closures or diversions are required as a result of the proposed development. Potential delay will be associated with vehicles needing to give way to construction traffic at the roundabout and side road junctions, and with delay associated with additional traffic demand for signalised junctions.</p> <p>Addenbrooke's Road is expected to continue to operate well under capacity in 2023 (with approx. 1000 vehicles per hour in both directions, or 500 vehicles per direction, versus theoretical capacity of 2,600 vehicle per hour in both directions, or 1,300 vehicles per direction associated with this road type and carriageway width.</p> | Slight Adverse Not Significant |
| Public transport users delay | Changed journey times, distances or frequencies for public transport | <p>In addition, construction HGV movements would be planned to avoid peak hours, thus further reducing driver and public transport users delay effects during these hours. These measures would be included in the CTMP which will form part of the CoCP Part B which will be submitted to the Local Planning Authority to discharge a deemed planning condition as identified in Schedule 1 of the Request for Deemed Planning Permission (NR12).</p> | |

| Effect | Description of Effect | Assessment of Effect | Significance of effect |
|------------------------------|--|---|--|
| | | Taking the above into account, the potential magnitude of impact on driver and public transport users delay along Addenbrooke's Road is judged to be Negligible. Given presence of a number of sensitive receptors with High assigned value, the potential effect is reported as being reported as Slight Adverse. For these reasons, the predicted effect on driver and public transport delay is unlikely to be significant. | |
| Pedestrian and cycle amenity | Loss of amenity for vulnerable road users | <p>The predicted increase in traffic associated with construction traffic would not lead to doubling of the existing total traffic, however HGV traffic is predicted to more than double along the eastern section of Addenbrooke's Road, between the Addenbrooke's Road/Hobson Avenue roundabout and Addenbrooke's Road/Francis Crick Avenue/Dame Mary Archers Way Roundabout. The additional HGV movements on this section of Addenbrookes Road, during the peak construction period, will equate to 9 movements per hour in each direction, or 1 HGV every 7 minutes.</p> <p>The existing pedestrian and cycle infrastructure along Addenbrooke's Road is of sufficient width and/or includes a buffer to ensure that pedestrians and cyclists are not in close proximity to traffic. There is a footway with a segregated two-way cycle track running on the northern side of the 40mph section of Addenbrooke's Road. The footway and cycle track are separated from the carriageway with an approximately 4m wide grass verge. The footway and segregated two-way cycle track continue along the 30mph section of the road, where they run next to the carriageway.</p> <p>A number of measures designed to minimise impact on vulnerable road users are proposed. These include appropriate markings and signs, planning HGV movements to avoid peak hours and, use of traffic marshals if required. Drivers would be under instruction give way to pedestrians and cyclists using uncontrolled crossings on Addenbrooke's Road. These measures would be included in the CTMP which will form part of the CoCP Part B which will be submitted to the Local Planning Authority to discharge a deemed planning condition as identified in Schedule 1 of the Request for Deemed Planning Permission (NR12).</p> <p>Taking the above into account, the potential magnitude of impact on pedestrian and cycle amenity along Addenbrooke's Road is judged to be Minor. Given presence of a number of sensitive receptors with High assigned value, the potential effect is reported as being reported as Slight Adverse. For these reasons, the predicted effect on loss of amenity for vulnerable road users is unlikely to be significant.</p> | Slight Adverse Not Significant |
| Fear and Intimidation | Potential issues for pedestrians and cyclists due to increased traffic flows and change in composition | <p>The predicted increase in 18-hour total traffic and HGV traffic associated with construction activities would be significantly lower than thresholds noted in the IEMA guidelines and summarised in Table 7.2.</p> <p>In addition, a number of measures designed to minimise impacts on vulnerable road users are proposed as identified in Section 17.4 of the ES. These include adherence to the designated construction routes, planning HGV movements to avoid peak hours, use of traffic marshals if required and instructions to drivers to pay special attention to pedestrians and cyclists. These measures would be included in the CTMP which will form part of the CoCP Part B which will be submitted to the Local Planning Authority to discharge a deemed planning condition as identified in Schedule 1 of the Request for Deemed Planning Permission (NR12).</p> <p>Taking the above into account, the potential magnitude of impact on pedestrian and cycle fear and intimidation along Addenbrooke's Road is judged to be Negligible. Given presence of a number of sensitive receptors with High assigned value, the potential effect is reported as being reported as Slight Adverse. For these reasons, the predicted effect on fear and intimidation for pedestrian and cyclists is unlikely to be significant.</p> | Slight Adverse Not Significant |

| Effect | Description of Effect | Assessment of Effect | Significance of effect |
|----------------------|--|---|--|
| Accidents and safety | Reduction in road safety for all road users | <p>The obtained collision data indicate that there were two collisions recorded as serious and four collisions recorded as slight along Addenbrooke's Road during the 60-month period to December 2020. Of those recorded collisions, one serious and one slight collision involved a cyclist casualty. No recorded collisions involved a pedestrian casualty.</p> <p>Construction HGV drivers would be under instruction to drive at or under the speed limits and to pay specific attention to pedestrians and cyclists. Other mitigation measures would include appropriate traffic management signage, planning HGV movements to avoid peak hours, compliance with safety standards and practices related to Construction Logistics and Community Safety (CLOCS). These measures would be included in the CTMP which will form part of the CoCP Part B which will be submitted to the Local Planning Authority to discharge a deemed planning condition as identified in Schedule 1 of the Request for Deemed Planning Permission (NR12).</p> <p>Taking the above into account, the potential magnitude of impact on accidents and safety along Addenbrooke's Road is judged to be Negligible. Given presence of a number of sensitive receptors with High assigned value, the potential effect is reported as being reported as Slight Adverse. For these reasons, the predicted effect on accidents and safety is unlikely to be significant.</p> | Slight Adverse Not Significant |
| Parking | Temporary loss of parking and loading facilities due to the need to accommodate construction traffic | No temporary loss of parking and loading facilities along Addenbrooke's Road would be required to accommodate construction traffic. | Neutral Not Significant |

Table 7.4 **Assessment of Effects Summary – Francis Crick Avenue**

| Effect | Description of Effect | Assessment of Effect | Significance of effect |
|------------------------------|--|--|-----------------------------------|
| Severance | Reduced ability for pedestrians and cyclists to cross the road. | <p>Predicted maximum HGV movements during the peak construction period will equate to approximately one HGV movement every hour or one vehicle movement every 20 minutes, if light goods vehicles and vans are considered.</p> <p>The existing controlled crossings at the CGB and Francis Crick Avenue junction and the zebra crossing south of it, would be retained to serve the existing crossing desire lines, ensuring that there is no significant effect on pedestrian and cycle severance and delay in this location.</p> | Neutral Not Significant |
| Pedestrian and cyclist delay | Changed journey times and distances for pedestrians and cyclists | <p>Drivers will also be instructed to pay special attention and give way to pedestrians and cyclists using uncontrolled crossings at the Francis Crick Avenue/Addenbrooke's Road roundabout. These measures would be included in the CTMP which will form part of the CoCP Part B which will be submitted to the Local Planning Authority to discharge a deemed planning condition as identified in Schedule 1 of the Request for Deemed Planning Permission (NR12).</p> | |

| Effect | Description of Effect | Assessment of Effect | Significance of effect |
|------------------------------|--|---|-----------------------------------|
| | | Taking the above into account, the potential magnitude of impact on severance and pedestrian and cycle delay along Francis Crick Avenue is judged to be Negligible. Given presence of a number of sensitive receptors including one with Medium assigned value, the potential effect is reported as being reported as Neutral. For these reasons, the predicted effect on severance and pedestrian and cycle delay is unlikely to be significant. | |
| Driver delay | Changed journey times and distances for private and commercial vehicle occupants | <p>No road closures or diversions are required as a result of the development. Potential delay will be associated with temporary traffic management to construct the station access road, vehicles needing to give way to construction traffic at the Francis Crick Avenue/Addenbrooke's roundabout and with delay associated with additional demand for the signalised junction of CGB and Francis Crick Avenue.</p> <p>Francis Crick Avenue is expected to continue to operate under capacity in 2023. Predicted maximum HGV movements during peak construction periods will equate to approximately one HGV movement per hour or one total vehicle movement every 20 minutes, if light goods vehicles and vans are considered.</p> | Neutral Not Significant |
| Public transport users delay | Changed journey times, distances or frequencies for public transport | <p>Temporary traffic management for the construction of the station access road would be designed to minimise delay to all vehicles on Francis Crick Avenue.</p> <p>In addition, construction HGV movements would be planned to avoid peak hours, thus further reducing driver and public transport users delay effects during these hours. These measures would be included in the CTMP which will form part of the CoCP Part B which will be submitted to the Local Planning Authority to discharge a deemed planning condition as identified in Schedule 1 of the Request for Deemed Planning Permission (NR12).</p> <p>Taking the above into account, the potential magnitude of impact on driver and public transport users delay along Francis Crick Avenue is judged to be Negligible. Given presence of a number of sensitive receptors including one with Medium assigned value, the potential effect is reported as being reported as Neutral. For these reasons, the predicted effect on driver and public transport delay is unlikely to be significant.</p> | |
| Pedestrian and cycle amenity | Loss of amenity for vulnerable road users | <p>Francis Crick Avenue is subject to a 20mph speed limit. The road has 1.5m mandatory cycle lanes on carriageway and 1.5m footways on both sides of the carriageway. Footways are separated from the carriageway by a 2m grass verge.</p> <p>Given the relatively low predicted increase in traffic associated with construction traffic (one HGV movement every hour or one total vehicle movement every 20 minutes, if light goods vehicles and vans are considered), construction traffic would not lead to doubling of the existing traffic and as such, according to IEMA guidelines would not lead to a significant adverse effect.</p> <p>Nevertheless, when driving along Francis Crick Avenue and turning into and out of the proposed access route to the construction compound off Francis Crick Avenue, drivers will be instructed to pay special attention to cyclists using mandatory cycle lanes. Drivers will also be instructed to give way to pedestrians and cyclists using uncontrolled crossings at the Addenbrooke's Road roundabout. Traffic marshalls may be provided at the construction site access points. These measures would be included in the CTMP which will form part of the CoCP Part B which will be submitted to the Local Planning Authority to discharge a deemed planning condition as identified in Schedule 1 of the Request for Deemed Planning Permission (NR12).</p> <p>Taking the above into account, the potential magnitude of impact on pedestrian and cycle amenity along Francis Crick Avenue is judged to be Negligible. Given presence of a number of sensitive receptors including one with Medium assigned value, the</p> | Slight Adverse Not Significant |

| Effect | Description of Effect | Assessment of Effect | Significance of effect |
|-----------------------|--|--|--|
| | | potential effect is reported as being reported as Slight Adverse. For these reasons, the predicted effect on loss of amenity for vulnerable road users is unlikely to be significant. | |
| Fear and Intimidation | Potential issues for pedestrians and cyclists due to increased traffic flows and change in composition | <p>Francis Crick Avenue is subject to a 20mph speed limit. The road has approximately 1.5m mandatory cycle lanes on carriageway and 1.5m footways on both side of the carriageway. Footways are separated from the carriageway by a 2m grass verge.</p> <p>The predicted increase in 18-hour total traffic and HGVs traffic associated with construction activities would be approximately 19 HGV movements, or 61 total vehicle movement every 20 minutes if cars and vans are considered. This is significantly lower than thresholds noted in the IEMA guidelines and summarised in Table 7.2</p> <p>In addition, a number of measures designed to minimise impact on vulnerable road users are proposed as identified in Section 17.4 of the ES These include adherence to the designated construction routes, planning HGV movements to avoid peak hours, use of traffic marshals if required and instructions to drivers to pay special attention to pedestrians and cyclists. These measures would be included in the CTMP which will form part of the CoCP Part B which will be submitted to the Local Planning Authority to discharge a deemed planning condition as identified in Schedule 1 of the Request for Deemed Planning Permission (NR12).</p> <p>Taking the above into account, the potential magnitude of impact on pedestrian and cycle fear and intimidation along Francis Crick Avenue is judged to be Negligible. Given presence of a number of sensitive receptors including one with Medium assigned value, the potential effect is reported as being reported as Slight Adverse. For these reasons, the predicted effect on fear and intimidation for pedestrians and cyclists is unlikely to be significant.</p> | Slight Adverse Not Significant |
| Accidents and safety | Reduction in road safety for all road users | <p>The obtained collision data indicates that there was one collision recorded in the assessed 60-month period up to December 2020, the collision was recorded as serious and involved a cyclist casualty. No recorded collisions involved a pedestrian casualty.</p> <p>When driving along Francis Crick Avenue and turning into and out of the proposed access route to the construction compound off Francis Crick Avenue, drivers will be instructed to pay special attention to cyclists using the mandatory cycle lanes.</p> <p>Drivers will also be instructed to give way to pedestrians and cyclists using uncontrolled crossings at the Francis Crick Avenue/Addenbrooke's Road roundabout.</p> <p>Other mitigation measures would include appropriate traffic management signage, planning HGV movements to avoid peak hours, traffic marshals, compliance with safety standards and practices related to Construction Logistics and Community Safety (CLOCS). All these measures would ensure that the effect would not be significant. These measures would be included in the CTMP which will form part of the CoCP Part B which will be submitted to the Local Planning Authority to discharge a deemed planning condition as identified in Schedule 1 of the Request for Deemed Planning Permission (NR12).</p> <p>Taking the above into account, the potential magnitude of impact on accidents and safety along Francis Crick Avenue is judged to be Negligible. Given presence of a number of sensitive receptors including one with Medium assigned value, the potential effect is reported as being reported as Neutral. For these reasons, the predicted effect on accidents and safety is unlikely to be significant.</p> | Neutral Not Significant |

| Effect | Description of Effect | Assessment of Effect | Significance of effect |
|---------|--|---|-----------------------------------|
| Parking | Temporary loss of parking and loading facilities due to the need to accommodate construction traffic | No temporary loss of parking and loading facilities along Francis Crick Avenue would be required to accommodate construction traffic. | Neutral Not Significant |

Table 7.5 **Assessment of Effects Summary – Hauxton Road between M11J11 and the junction with Addenbrooke's Road**

| Effect | Description of Effect | Assessment of Effect | Significance of effect |
|------------------------------|--|--|--|
| Severance | Reduced ability for pedestrians and cyclists to cross the road. | There is only one natural desire line along the assessed section of the road, given its nature (a rural connector road subject to 40mph speed limit, fronted by fields) and existing pedestrian and cycle facilities along it (shared use path along the western side). The identified crossing desire line is between western side of Hauxton Road and Addenbrooke's Road. This desire line is currently served by a controlled crossing which is part of the signalised Hauxton Road/Addenbrooke's Road junction. Taking the above into account, the potential magnitude of impact on severance and pedestrian and cycle delay along Hauxton Road is judged to be Negligible. Given the absence of sensitive receptors, the potential effect is reported as being reported as Neutral. For these reasons, the predicted effect on severance and pedestrian and cycle delay is unlikely to be significant. | Neutral Not Significant |
| Pedestrian and cyclist delay | Changed journey times and distances for pedestrians and cyclists | | |
| Driver delay | Changed journey times and distances for private and commercial vehicle occupants | No road closures or diversions are required as a result of the Development. Potential delay will be associated with delay associated with additional demand for the signalised junction of Addenbrooke's Road. As a link, the A1309 Hauxton Road is expected to continue to operate under capacity in 2023 including additional construction traffic generated by the development. In addition, construction HGV movements would be planned to avoid peak hours, thus further reducing driver and public transport users delay effects during these hours. These measures would be included in the CTMP which will form part of the CoCP Part B which will be submitted to the Local Planning Authority to discharge a deemed planning condition as identified in Schedule 1 of the Request for Deemed Planning Permission (NR12). | Slight Adverse Not Significant |
| Public transport users delay | Changed journey times, distances or frequencies for public transport | Taking the above into account, the potential magnitude of impact on driver and public transport users delay along Hauxton Road is judged to be Minor. Given the absence of sensitive receptors, the potential effect is reported as being reported as Slight Adverse. For these reasons, the predicted effect on driver and public transport delay is unlikely to be significant. | |

| Effect | Description of Effect | Assessment of Effect | Significance of effect |
|------------------------------|--|--|-----------------------------------|
| Pedestrian and cycle amenity | Loss of amenity for vulnerable road users | <p>The A1309 Hauxton Road is a very busy road with predicted 12-hour (07:00-19:00hrs) flows in 2023 of approximately 27,000 vehicle movements. Additional vehicle movements generated by the development as a result of construction activities would lead to the predicted traffic increase of 2.7%. This increase would not lead to doubling of the existing traffic and as such, based on the IEMA guidelines unlikely to lead to a significant adverse effect.</p> <p>Nevertheless, drivers will be instructed to pay special attention to cyclists using the shared use path on the western side of the carriageway. These measures would be included in the CTMP which will form part of the CoCP Part B which will be submitted to the Local Planning Authority to discharge a deemed planning condition as identified in Schedule 1 of the Request for Deemed Planning Permission (NR12).</p> <p>Taking above into account, the potential magnitude of impact on pedestrian and cycle amenity along Hauxton Road is judged to be Negligible. Given the absence of sensitive receptors, the potential effect is reported as being reported as Neutral. For these reasons, the predicted effect on loss of amenity for vulnerable road users is unlikely to be significant.</p> | Neutral Not Significant |
| Fear and Intimidation | Potential issues for pedestrians and cyclists due to increased traffic flows and change in composition | <p>The assessed section of the road is subject to a 40mph speed limit. The road has approximately 3m wide share use path on the western side of the carriageway.</p> <p>As indicated in Table 7-2, the predicted increase in 18-hour total traffic and HGVs traffic associated with construction activities would be significantly lower than thresholds noted in the IEMA guidelines.</p> <p>In addition, a number of measures designed to minimise impact on vulnerable road users are proposed as identified in Section 17.4. These include adherence to the designated construction routes, planning HGV movements to avoid peak hours and instructions to drivers to pay special attention to pedestrians and cyclists. These measures would be included in the CTMP which will form part of the CoCP Part B which will be submitted to the Local Planning Authority to discharge a deemed planning condition as identified in Schedule 1 of the Request for Deemed Planning Permission (NR12).</p> <p>Taking the above into account, the potential magnitude of impact on pedestrian and cycle fear and intimidation along Hauxton Road is judged to be Negligible. Given the absence of sensitive receptors, the potential effect is reported as being reported as Neutral. For these reasons, the predicted effect on fear and intimidation for pedestrian and cyclists is unlikely to be significant.</p> | Neutral Not Significant |
| Accidents and safety | Reduction in road safety for all road users | <p>The obtained collision data indicate that there were three collisions recorded in the assessed 60-month period up to December 2020, the collisions was recorded as slight and did not involve cyclist or pedestrian casualty. Construction HGV drivers would nonetheless be under instruction to pay specific attention to pedestrians and cyclists. Other mitigation measures would include appropriate traffic management signage, planning HGV movements to avoid peak hours, compliance with safety standards and practices related to Construction Logistics and Community Safety (CLOCS). This would ensure that the effect is unlikely to be significant. These measures would be included in the CTMP which will form part of the CoCP Part B which will be submitted to the Local Planning Authority to discharge a deemed planning condition as identified in Schedule 1 of the Request for Deemed Planning Permission (NR12).</p> <p>Taking the above into account, the potential magnitude of impact on accidents and safety along Hauxton Road is judged to be Negligible. Given the absence of sensitive receptors, the potential effect is reported as being reported as Neutral. For these reasons, the predicted effect on accidents and safety is unlikely to be significant.</p> | Neutral Not Significant |

| Effect | Description of Effect | Assessment of Effect | Significance of effect |
|---------|--|---|-----------------------------------|
| Parking | Temporary loss of parking and loading facilities due to the need to accommodate construction traffic | No temporary loss of parking and loading facilities along the A1309 Hauxton Road would be required to accommodate construction traffic. | Neutral Not Significant |

8 Traffic and Transport impacts and Effects during Operation

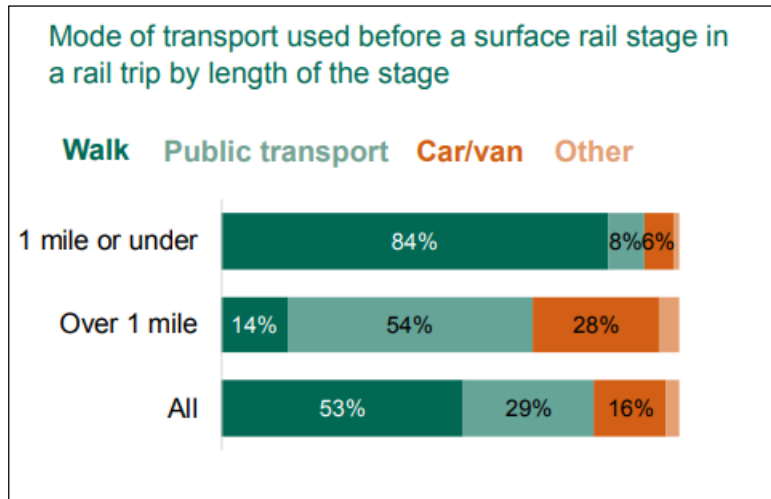
- 8.1.1 To provide full integration of the station within the existing urban environment, with good access to local populations and services, the station has been designed to provide direct access and interchange with key transportation modes. The access has also been designed to prioritise sustainable onward journeys for passengers
- 8.1.2 During the operational phase, the station users and staff will be encouraged to walk, cycle or use public transport to travel to/from the proposed development. Vehicle trips to and from the station would account for a small percentage of trips.
- 8.1.3 The station will provide sufficient cycle parking for passengers, appropriate access for disabled passengers, and safe and convenient cycle and pedestrian access. It is anticipated that 95% of passengers will use sustainable non-vehicular travel modes (walking, cycling and public transport) to travel to and from the station. Furthermore, the scheme will promote sustainable modes of travel by its very nature of being a rail station and is predicted to result in a reduction in traffic on the local and strategic road networks.
- 8.1.4 Section 6.4 of the TA (NR-16, Appendix 17.2) provides estimates of the trip generation to and from the station and the predicted mode share of passengers using the station. Table 8.1 shows the predicted mode share and number of trips on a typical weekday in 2031 associated with the proposed development,

Table 8.1 Mode share and Trip Generation for each Mode

| Mode | Total trips | Mode Share |
|------------------------------------|-------------|------------|
| Car Passenger (Drop off / Pick up) | 146 | 2% |
| Car Passenger (Taxi) | 171 | 3% |
| Public Transport | 678 | 11% |
| Cycle | 1565 | 24% |
| Walk | 3868 | 60% |
| All modes | 6428 | 100% |

- 8.1.5 As can be seen from Table 8.1, on a typical weekday, there will be additional 317 vehicular trips (634 vehicular movements) on the road network as a result of passengers being dropped off, picked up and taking a taxi to/from the proposed development.
- 8.1.6 It is predicted that up to 95% of passengers will use sustainable non-vehicular travel modes (walking, cycling and public transport) to travel to and from the station. Some of the rationale behind the level of sustainable, non-vehicular modes are as follows:
- The station is primarily a destination station for people working or visiting CBC and the hospitals which are within easy walking distance of the station.
 - The only parking provided at the station would be five places for Blue Badge holders.

- Most of the trips to and from the station are predicted to be to/from Trumpington, CBC and Red Cross areas, which are located close to the station, mostly within a 15 min walk or 5 to 10 minute cycle ride (see section 9.3 and 9.4 of the TA).
- National Travel Survey 2014: Multi-stage trips indicates that 84% of trips under 1 mile to a rail station are walking trips.



- The use of sustainable modes is generally much greater in Cambridge than in Cambridgeshire as a whole and in the rest of the UK (based on Census 2011 data with regard to Method of Travel to Work).
- For comparison, the Cambridge North Station TA predicted a 7% taxi and car pick up/drop off with more bays provided. It should be also noted that the road network providing connection to Cambridge North station is less constrained and more suitable for vehicular access than the private road network leading to Cambridge South which includes restrictions on through traffic.
- International evidence with regard to modal shares of access modes to railway stations also shows that the predicted car passenger (pick up, drop off and taxi) mode share for Cambridge South is in line with European countries where cycle use is common and high, as it is in Cambridge¹. The referenced peer reviewed article is contained in Appendix D (specifically, see Table 7 on page 14).

8.1.7 The modal share was agreed with CCoC (see Appendix B). For these reasons, the predicted 95% sustainable trip mode share and 5% car passenger and taxi trip mode share is judged to be robust.

8.1.8 At the same time, based on the estimates undertaken for the CBC Transport Needs Review report (D32) commissioned by CCoC (contained in the TA (NR-16, Appendix 17.2) as Appendix R), it is predicted that, in 2031, the availability of Cambridge South Station would result in the gross reduction of 746 daily two-way vehicular trips to the CBC. This equates to the reduction of 1,492 vehicle trips per day on the local road network. Taking into account the additional 634 vehicular movements on the road network as a result of passengers being dropped off, picked up and taking taxis to/from the Station, the proposed development is predicted to lead to the net daily reduction of 858 vehicular movements on the local road network. It is assumed that each drop off, pick up and taxi mode trip will involve two vehicular movements – one movement to and one movement from the station. However, in reality some taxi trips will involve only one movement, as the same taxi could potentially drop off one passenger at the station and then immediately pick up another passenger. As such, the vehicular

¹ Hasiak, S. (2019). Access mobility to local railway stations: current travel practices and forecast. *Cybergeog: European Journal of Geography*.

trips generated by the station are potentially overestimated, ensuring that the assessment of the impact is robust.

8.1.9 The proposed development has been designed to limit the impact associated with trips generated by the station and to improve accessibility. Proposed mitigation and embedded design measures of operational effects include:

- The station access road off Francis Crick Avenue would be integrated within the existing signalised Francis Crick Avenue/CGB junction Method of Control (MOC). The access road would be provided directly south of the junction and would introduce a new junction arm with traffic signal modifications.
- The project will provide a total of 1,000 cycle parking spaces for passengers to encourage sustainable travel, appropriate access and five parking spaces for Blue Badge holders, connectivity with bus services and safe and convenient cycle and pedestrian access.
- To facilitate access to the station and to promote sustainable transport modes for passengers, a number of additional improvements to the existing transport infrastructure are proposed:
 - Widening the existing crossings at the Francis Crick Avenue/Guided Busway junction;
 - Widening the shared use cycle path on the west side of Francis Crick Avenue from the north of the Guided Busway;
 - Widening the existing crossing across the Guided Busway connecting the Trumpington residential area and Hobson's Park;
 - Providing a segregated pedestrian and cycle path through Hobson's Park approximately parallel to the Guided Busway;
 - Providing cycle and pedestrian access from both the east and west (with cycle parking provided on both sides of the railway); and
 - Providing high-quality wayfinding to the station for all transport modes.

8.1.10 The CSIE Project would therefore have overall positive effects during the operational phase via the reduction in vehicular trips on the local road network, through encouraging more people to travel by rail to and from the CBC and surrounding area and through encouraging sustainable travel. For these reasons, it is anticipated that the proposed development would result in net beneficial effects on transport networks, transport networks users and sensitive receptors during the operational phase.

9 Responses to Objections

- 9.1.1 In this section of my evidence, I summarise the key objections received on traffic and transport issues in response to the CSIE Project and provide a response to those objections. Network Rail has contacted all statutory objectors and remains willing to meet with them to discuss the concerns raised. A number of meetings have already taken place.
- 9.1.2 Network Rail also continues to engage with statutory bodies such as CCoC and the GCP. Good working relationships have already been established with these bodies through engagement and consultation prior to the submission of the application for the Order.
- 9.1.3 Network Rail are holding regular meetings with these statutory bodies to address grounds of objection (or other representations) made with the aim of agreeing a Statement of Common Ground and securing the withdrawal of objections (where applicable). Network Rail are negotiating a Protocol Agreement with GCP to manage the interfaces between the two projects that confirm that both schemes can be delivered concurrently in order to minimise construction impacts on the local area. The agreement also demonstrates how both schemes will interact during operational phases and maximise intended benefits of each scheme by complementing each other.
- 9.1.4 The majority of the objections received include statements of qualified support for the project.
- 9.1.5 The following section summarises the principal traffic and transport themes raised in the objections and outlines a summary response in relation to each objector.

OBJ04 – Saba Infra Cambridgeshire Limited (Saba)

- 9.1.6 The Saba Objection raises the following issues relevant to my area of expertise:
- Impact on traffic flows and volumes on the Multi Storey Car Park (MSCP);
 - Short term impacts on the MSCP; and
 - Long term impacts on the MSCP.
- 9.1.7 I deal with each of these issues in turn; first summarising the issues raised, before setting out my response.
- 9.1.8 ***Impact on traffic flows and volumes on the MSCP.*** *The impact on traffic flows and volumes on the MSCP have not been adequately considered. The traffic report (NR16 Environmental Statement at Volume 1 Non-Technical Summary Report at Chapter 19 Transport, Volume 2 Main Environmental Statement at Chapter 17 Transport, and Volume 3 Appendices and Figures at Appendices 17.1 Transport Figure and 17.2 Transport Assessment) contain no significant data having regard to or in relation to the Scheme's impact on the MSCP.*
- 9.1.9 The data within Section 6 of the Transport Assessment predicts that vehicular traffic trips (private vehicles and taxis) to the station are estimated to be 35 into and out of the station during the AM Peak (08:00-09:00) and 35 into and out of the station during the PM Peak (17:00-18:00), equating to 70 vehicle movements in total for each peak hour.

- 9.1.10 With regard to traffic flows and volumes that could potentially affect access to the MSCP, the Transport Assessment provides an assessment of the anticipated impact of the proposed station on the highway network as a result of vehicular traffic generated by the proposed station. The Transport Assessment shows that the proposed station traffic flows through Francis Crick Avenue/Robinson Way roundabout junction and Francis Crick Avenue/Dame Mary Archer Way/Addenbrooke's Road Roundabout Junction (junctions that are also used by vehicles accessing the MSCP) would be 36 and 35 vehicle movements during the peak hour, respectively. This level of vehicle movements is below the threshold of 60 two-way vehicle movements during peak hours identified as requiring assessment in the Transport Assessment Requirements (2019) guidance produced by Cambridgeshire County Council (CCoC). As such, the impact on these junctions and therefore upon MSCP is not predicted to be significant.
- 9.1.11 It must also be noted that the station will result in a modal shift from car to rail and will reduce the background vehicle trips on the local highway network. The response to the CUH's objection (**OBJ06**) technical observations of the TA provided in Appendix E of this note shows that in 2031 the station is predicted to result in a 2.8% reduction in traffic on Robinson Way and between 2.2% and 2.8% reduction in traffic on Addenbrooke's Road. As such, with regard to the potential impact of traffic flows and volumes on access to the MSCP, the proposed station would have a positive effect on access to the MSCP.
- 9.1.12 **Short Term Impact on the MSCP.** *Disruption on the road network will make it more difficult for users to get to the MSCP.*
- 9.1.13 The Transport Assessment has not identified any short-term impacts which would cause disruption to users accessing the MSCP. No temporary road closures or diversions are proposed to the immediate road network or access serving the MSCP. In addition, prior to commencement of construction a Construction Logistics Plan (CLP), Construction Travel Plan (CTP) and Construction Traffic Management Plan (CTMP) will be produced and submitted to the local planning authority for approval as part of the Code of Construction Practice Part B. The CLP, CTP and CTMP will take cognisance of the current users and access rights over Francis Crick Avenue and Robinson Way, in particular the 'blue light' route serving the hospitals.
- 9.1.14 **Long Term Impact on the MSCP.** *Impact on the investment value of the MSCP as user numbers fall.*
- 9.1.15 From a traffic and transport perspective, the access route to the MSCP for pedestrians and vehicles would not be affected by the proposed station. No road closures or diversions would be required during the operational phase of the proposed station. All existing potential routes to and from the MSCP and associated signage would remain as existing.
- 9.1.16 Any financial impact upon Saba is considered in the Proof of Evidence of Mr Simms (**NRE 10.2**)

OBJ06 – Cambridge University Hospital

- 9.1.17 The CUH Objection raises the following issues relevant to my area of expertise:

- Cycle parking provision;
- Motorcycle parking provision;
- Impacts on Blue Light Routes;
- Avoiding through traffic;

- Personal Safety of Cycle Routes;
- Integration of Transport Projects and Solutions;
- Cumulative Impacts of CSET and Cambridge South;
- Accessibility for All;
- Disruption and Impacts during Construction; and
- Enforcement and Monitoring;

9.1.18 In addition, CUH has reviewed the Transport Assessment and Transport Chapter of the Environmental Statement supporting the proposals and made a number of technical observations.

9.1.19 I deal with each of these issues in turn; first summarising the issues raised, before setting out my response. The response to Transport Assessment and Environmental Statement observations is provided in Appendix E.

9.1.20 **Cycle parking provision.** *Objections were raised about the level of cycle parking to be provided at the station and the east/west split of cycle parking, suggesting that it is not adequate to serve identified needs. The objection also included a request for supporting cycling infrastructure (repair station and cycle pumps) and a request for a review of the volume of cycle parking provided,*

9.1.20.1 As shown in Table 8.1 of this note, it is predicted that 24% of trips to/from the station will be cycling trips which equates to about 780 return trips per day in 2031. 1000 cycle parking spaces will be provided on both sides of the station and improved cycle links will be provided to access the station. These measures include:

- Providing cycle and pedestrian access from both the east and west (with cycle parking provided on both sides of the railway);
- Widening the existing crossings at the Francis Crick Avenue/Guided Busway junction;
- Widening the shared use cycle path on the west side of Francis Crick Avenue from the north of the Guided Busway;
- Widening the existing crossing across the Guided Busway connecting Trumpington residential area and Hobson's Park;
- Providing a segregated pedestrian and cycle path through Hobson's Park approximately parallel to the Guided Busway;

9.1.21 As indicated in Table 6.4 of the TA (**NR-16**, Appendix 17.2), 75% of **total trips** will be arriving and departing from the east and 25% arriving and departing from the west of the station. The east/west split for different modes, including cycle trips, has been calculated using methodology described in Section 6.4 Predicted Modal Split and Table 6.7 of the TA (**NR-16**, Appendix 17.2).

9.1.22 It is predicted that about 48% of **cycle trips** will be to/from the west and 52% to/from the east, equating to 373 return trips from the west and 410 return trips from the east. The current proposal has 442 cycle parking spaces in the east forecourt and 558 cycle parking spaces in the west forecourt. The east forecourt is very constrained in terms of available space. However, cycle access and cycle parking are subject to detailed design arrangements which could result in changes to the balance of provision on either side. Such details will also include supporting cycle infrastructure such as a repair station and cycle pumps. The final design will be submitted to Greater Cambridge Shared Planning for approval as part of a discharge of conditions application, as set out in draft planning condition 19 within document **NR12** Request for Deemed Planning permission of the TWAO application.

9.1.23 **Motorcycle Parking.** *It is unclear from the consultation documents whether any motorcycle access and parking is to be provided.*

- 9.1.24 The proposed Cambridge South Station has been designed to maximise the patronage by non-motorised users, as such vehicular parking has been limited to five blue badge parking bays, two maintenance staff parking bays and two station staff parking bays. There is no intention to provide parking for motorcycles, but they will be able to drop off passengers using the private vehicle drop-off facilities within the eastern forecourt.
- 9.1.25 **Impact on blue light routes.** *Blue light routes are very sensitive to congestion. The impact on the blue light routes should be acknowledged explicitly within the TA and ES. The TA and ES do assess growth at the Campus, but do not confirm that there would be no detrimental impacts on these blue light routes as a result of the Station proposals.*
- 9.1.26 Dame Mary Archer Way, Addenbrooke's Road and Francis Crick Avenue are identified in Section 4.5 of the TA (NR-16, Appendix 17.2) as blue routes for emergency vehicles. Section 8.3 of the TA (NR-16, Appendix 17.2) provides an assessment of the anticipated impact of the proposed station on the highway network, including blue light routes.
- 9.1.27 The blue light routes have been taken into consideration during the development of the outline design of the station and the proposed construction methodologies. Due to mode shift from road to rail, it is predicted that the operation of Cambridge South Station would result in the gross reduction of 746 daily two-way vehicular trips to the CBC in 2031. This equates to the reduction of 1,492 vehicle trips per day on the local road network. Taking into account the additional 634 vehicular movements on the road network as a result of passengers being dropped off, picked up and taking taxis to/from the Station, the proposed development is predicted to lead to the net daily reduction of 858 vehicular movements on the local road network. This will reduce traffic demand and congestion on the highway network including the blue light routes.
- 9.1.28 During the construction of the station eastern forecourt most of the construction traffic will access the construction site via a haul road to be constructed along the eastern boundary of the railway between Addenbrookes Road (Nine Wells Bridge) and the Guided Busway bridge. This will minimise any impact with existing traffic and emergency services using Francis Crick Avenue.
- 9.1.29 Network Rail has met with the Cambridge University Hospitals NHS Foundation Trust to confirm the construction of the Project will have a minimal impact on blue light routes. Network Rail will continue to engage with the Trust to provide any necessary assurances it requires to protect blue light routes.
- 9.1.30 **Avoiding through traffic.** *CUH wants to ensure that the campus does not become a through-route and to work towards a solution that allows ANPR to continue to work effectively and enforce no-through routes within the Campus. It requests to be involved into conversations to find the best possible solution for all.*
- 9.1.31 Having been provided with the information on how the ANPR system currently operates (discussed further below in relation to 'Enforcement and monitoring'), I am satisfied that it can continue to operate as existing to enforce no-through routes within the Campus. NR is determined to continue to liaise with CUH including on the operation of the ANPR system, to ensure that the Campus would not become a through route.
- 9.1.32 **Personal Safety of Cycle Routes.** *Personal safety is a high priority for CUH. The objection includes advice that footpaths and cycle ways are designed to be in open, well laid out spaces which enable paths to be protected. Adequate street-style lighting; suitable CCTV coverage and pro-active monitoring of CCTV cameras along with good quality surfaces and on-going maintenance are essential to encourage users onto these routes and to support them in feeling safe whilst doing so.*

- 9.1.33 Street lighting and CCTV coverage will be provided in the station forecourt to ensure personal safety. Footpaths and cycle ways have been designed in an open landscaped area in the forecourt which link to the wider CBC pedestrian and cycle network. This will form part of the detailed design.
- 9.1.34 ***Integration of Transport Projects and Solutions.*** CUH request that further detailed consideration is given to the design of routes between modal interchange points between Guided Bus, Cambridge Station and CSET to ensure this is seamless and high-quality.
- 9.1.35 The station has been located and designed to maximise sustainable travel opportunities, including interchange with public transport. The existing Guided Busway runs along the northern boundary of the proposed station and includes services to Cambridge city centre and Trumpington park and ride. The closest Guided Busway stops in each direction are located outside Royal Papworth Hospital approximately 250m east of the proposed station. The Guided Busway stops have shelters and timetables and serve Guided Busway routes A and D.
- 9.1.36 The station entrance is located about 200 metres from bus stops A and D on the Guided Busway to the east of Francis Crick Avenue. The existing pedestrian crossing across the southern arm of the Francis Crick Avenue/Guided Busway junction will be widened from 3.8m to 8m to improve connectivity between the station and these bus stops. The possibility of providing real time information within the station for the bus services will be subject to further discussion and detailed design.
- 9.1.37 CSET will provide improved bus interchange with Cambridge South station with a bus stop located on Francis Crick Avenue just south of the eastern station access. As part of ongoing design development, the station highway access has been moved to the south to accommodate the major junction modifications proposed as part of the CSET scheme at the Francis Crick Avenue/Guided Busway junction. A controlled pedestrian crossing will be provided at the northern end of the CSET stop to provide seamless interchange between the railway station and CSET. The distance between the station entrance and the CSET stops is about 150m.
- 9.1.38 The Cambridge South Station project sponsor and design team are working closely with GCP and the CSET design team to integrate and to maximise potential benefits to users of both schemes. This includes providing access to the station from Francis Crick Avenue, while ensuring that CSET project design requirements are fully met.
- 9.1.39 NR are negotiating a Protocol Agreement with GCP to manage the interfaces between the two projects that confirm that both schemes can be delivered concurrently in order to minimise construction impacts on the local area. The agreement also demonstrates how both schemes will interact during operational phases and maximise intended benefits of each scheme by complementing each other.
- 9.1.40 ***Cumulative impact assessment with CSET.*** CUH request that a cumulative impact assessment is undertaken with CSET in place, particularly considering the impact of the additional pedestrian, cycle and public transport demands on crossings and at interchange points in the vicinity of the station to verify that the arrangements for the forecourt have capacity to accommodate the increased demand, and provide a high quality seamless interchange between modes, without detriment to CUH operations. This assessment should be consistent across both TWAOs and Deemed Planning Permissions, even though the procurement routes are separate.
- 9.1.41 The CSET scheme will involve a complete reconfiguration of the Francis Crick Avenue/ Guided Busway junction and Francis Crick Avenue, as well as the adjacent pedestrian and cycle infrastructure. The final junction layout is to be confirmed by GCP. As such, undertaking a cumulative

impact of the CSET scheme for the layout proposed as part of the CSIE Project would be meaningless (because it effectively involves replacing the current arrangements). Therefore, the cumulative impact taking into account both schemes will have to be undertaken by GCP as part of their TWAO application.

- 9.1.42 The station forecourt been designed to accommodate pedestrian and cycle movements to and from the station, including passengers interchanging with CSET.
- 9.1.43 *CUH would welcome the opportunity for a stakeholder group to be set up containing all parties involved with construction planning for both schemes with CUH. This would allow phase by phase construction proposals to be discussed and coordinated with ongoing CUH construction activities within the Campus.*
- 9.1.44 A stakeholder group is to be established and meetings would be held on a regular basis to discuss and co-ordinate construction planning and temporary traffic management for the CSIE project, CSET and CUH construction activities.
- 9.1.45 *The objection notes that the future year (2031) transport modelling work submitted for the junctions within the site apply highway trip reductions arising from CSETS completion within the baseline, as well as highway trip reductions associated with a range of other transport schemes at varying levels of progress which may or may not be in place by 2031. This acts to reduce background traffic volumes within the Campus within the assessment year, improving the operation of the junctions but without considering the volumes of additional walk, cycle or public transport trips and whether the current infrastructure has capacity to accommodate this.*
- 9.1.46 To facilitate access to the station and to promote sustainable transport modes for passengers, a number of additional improvements to the existing walking, cycling and public transport infrastructure are proposed.
- Widening the existing crossings at the Francis Crick Avenue/Guided Busway junction;
 - Widening the shared use cycle path on the west side of Francis Crick Avenue from the north of the Guided Busway;
 - Widening the existing crossing across the Guided Busway connecting the Trumpington residential area and Hobson's Park;
 - Providing a segregated pedestrian and cycle path through Hobson's Park approximately parallel to the Guided Busway;
 - Providing cycle and pedestrian access from both the east and west (with cycle parking provided on both sides of the railway); and
 - Providing high-quality wayfinding to the station for all transport modes.
- 9.1.47 A Viswalk microsimulation has been undertaken to assess the impact of the additional pedestrian, cycle and public transport demands on the key crossing across the southern arm of the Francis Crick Avenue/Guided Busway junction.
- 9.1.48 The 2031 Viswalk Without Station Base model features the existing layout at the Francis Crick Avenue/Guided Busway junction without the station. During the AM peak hour, queues of cyclists and pedestrians form very quickly on the shared use path which runs alongside the guided bus-way due to a lack of capacity to accommodate the eastbound cycling demand on the existing toucan crossing across the southern arm of Francis Crick Avenue.

- 9.1.49 With the proposed Cambridge South station in place, the toucan crossing across the southern arm of Francis Crick Avenue is widened from 3.8m to 8m to increase the crossing capacity for cyclists and pedestrians. The 2031 With Station Viswalk model indicates that during the AM peak hour the queuing issue is mitigated, with cyclists and pedestrians generally clearing within each crossing cycle.
- 9.1.50 Sensitivity testing was undertaken for the Francis Crick Avenue / Cambridge Guided Busway Junction. The testing included modelling of junction capacity in 2031 without taking into consideration the reduction in traffic flows associated with planned transport improvements and interventions identified in the TA. A summary of these capacity analysis results is provided in Appendix G4 of Appendix G (**NRE 2.3**). This demonstrates that the junction will operate within capacity for both assessed scenarios. The results also show that traffic generated by the proposed station will have a minimal impact on the highway network.
- 9.1.51 *Paragraph 17.5.52 of the ES states that although there is no information to evidence this, the cumulative impacts of CSETS and Cambridge South during construction are unlikely to generate a significant impact. Unless there is evidence to demonstrate this, these impacts should be considered “unknown”, not assumed to be insignificant as small aspects of construction have the potential to have a significant impact on operations within the Campus unless coordinated and communicated effectively.*
- 9.1.52 The most recent information received from the Mott Macdonald’s design team for the CSET project indicate that there could be potential overlap in construction activities and construction traffic between the CSIE project and CSET schemes. Table 9.1 summarises cumulative increase in traffic associated with these two projects.
- 9.1.53 It should be noted that the proposed construction peak period with regards to construction traffic will be 2023 for the CSIE project and 2024 for CSET. However, the assessment in Table 9.1 assumes that construction peaks would overlap, therefore presenting a worst-case scenario in terms of the cumulative impact assessment.

Table 9.1 Predicted increase in 12-hour (07:00-19:00) traffic against future 2023 baseline

| Road Name | 2023 Future Baseline, 12-hour (07:00-19:00) Mon-Fri flows | | 2023 Peak Construction Traffic (CSIE) | | 2024 Peak Construction Traffic (CSET) | 2023/2024 Future Baseline + Development, 12-hour (07:00-19:00) Mon-Fri flows | | % Increase in 12h flows (07:00 - 19:00) (without CSET) | | % Increase in 12h flows (07:00 - 19:00) (with CSET) | |
|---|---|------------------|--|------------------|--|---|------------------|---|------------------|--|------------------|
| | Total Vehicle Movements | HGV Movements | Total Vehicle Movements | HGV Movements | HGV Movements | Total Vehicle movements | HGV Movements | Total Vehicle movements | HGV Movements | Total Vehicle movements | HGV Movements |
| Addenbrooke's Road | 10,605 | 134 | 486 | 210 | 88 | 11389 | 432 | 6.6% | 156% | 7.4% | 222% |
| Addenbrooke's Road | 13,602 | 300 | 486 | 210 | 88 | 14386 | 598 | 5.1% | 70% | 5.8% | 99% |
| A1307 Babraham Road/Cambridge Road | 13,445 | 307 | 4 | 2 | 264 | 13715 | 573 | 0.0% | 1% | 2.0% | 87% |
| Granham's Road | 4,124 | 82 | 4 | 2 | 32 | 4162 | 116 | 0.1% | 2% | 0.9% | 41% |

- 9.1.54 As can be seen from Table 9.1, the biggest impact in terms of construction traffic associated with the CSET scheme will occur along the A1307 where the scheme will generate an additional 264 HGV movements during the day. However, the CSIE project will only generate additional two HGV movements and four total construction traffic movements on the A1307 and Granham's Road links, so the cumulative impact would be overwhelmingly associated with the CSET scheme.
- 9.1.55 On the Addenbrooke's Road link, the cumulative impact from two schemes would result in an additional 7.4% increase in total vehicle movements and a 222% increase in HGV movements, compared to a 6.6% increase in total vehicle movements and 156% increase in HGV movements without the CSET scheme. Given the temporary nature of this impact and proposed mitigation measures identified in Section 17.4 and 17.5 of the ES (**NR-16**), and assuming that the CSET scheme would employ comparable mitigation measures, it is judged that the potential magnitude of impact on users of vehicular, pedestrian and cycle infrastructure along Addenbrooke's Road would be Minor. Given presence of a number of sensitive receptors with High assigned value, the potential effect is reported as being Slight Adverse.
- 9.1.56 A statement of common ground is currently being finalised with GCP and further agreements are proposed to be entered into that confirm that both schemes can be delivered concurrently in order to minimise construction impacts on the local area.
- 9.1.57 A stakeholder group meeting would be held on a regular basis to discuss and co-ordinate construction planning and temporary traffic management for the CSIE project, CSET and CUH construction activities.
- 9.1.58 *There is limited evidence provided on the capacity of **Accessibility for All**. No commentary is provided on how deliveries will be accommodated to and from the new station and whether these are likely to be required, e.g. an onsite coffee shop. the design solution provided here should ensure taxis [etc] do not park within this turning head which would be of detriment to the blue light route...Furthermore there is limited evidence provided on the capacity of existing pedestrian and cyclist routes (and crossings) within the Campus to accommodate the additional pedestrian and cycle drawn through the Campus to access the station.*
- 9.1.59 As to deliveries and the potential for the blocking of the turning head, with limited retail facilities at the station, deliveries are likely to be infrequent. Swept path analysis indicates a car can pass a delivery vehicle temporarily parked in the turning head where delivery vehicles are proposed to be accommodated. The design includes a dedicated emergency vehicle area in the turning head to ensure taxis and cars do not stop or park in this area. As to evidence of the capacity of the existing pedestrian and cycle routes to access the station, the main impact will be on the key desire line between the station and CBC via the existing toucan crossing across the southern arm of the Francis Crick Avenue/Guided Busway junction.
- 9.1.60 A Viswalk microsimulation has been undertaken to assess the impact of the additional pedestrian, cycle and public transport demands on the key crossing across the southern arm of the Francis Crick Avenue/Guided Busway junction.
- 9.1.61 The 2031 Viswalk Without Station Base model features the existing layout at the Francis Crick Avenue/Guided Busway junction without the station. During the AM peak hour, queues of cyclists and pedestrians form very quickly on the shared use path which runs alongside the guided bus-way due to a lack of capacity to accommodate the eastbound cycling demand on the existing toucan crossing across the southern arm of Francis Crick Avenue.

- 9.1.62 With the proposed Cambridge South station in place, the toucan crossing across the southern arm of Francis Crick Avenue is widened from 3.8m to 8m to increase the crossing capacity for cyclists and pedestrians. The 2031 With Station Viswalk model indicates that during the AM peak hour the queuing issue is mitigated, with cyclists and pedestrians generally clearing within each crossing cycle.
- 9.1.63 ***Disruption during construction.*** Regarding the construction phase, CUH support the principle of preparing a Code of Construction Practice (CoCP) and a Construction Traffic Management Plan (CTMP). CUH request that alongside existing transport forums, a stakeholder forum is established as part of this process so construction proposals are discussed with CUH well in advance, enabling a collaborative approach to managing the impacts of construction across the Campus and to avoid unforeseen impacts on critical care operations of the hospital. This includes the consideration of wayfinding and construction signage.
- 9.1.64 The CTMP will form part of the CoCP Part B which will be submitted to the Local Planning Authority to discharge a deemed planning condition as identified in Schedule 1 of the Request for Deemed Planning Permission (**NR12**). The CTMP would include details of construction signage and wayfinding.
- 9.1.65 A stakeholder group is to be established and meetings would be held on a regular basis to discuss and co-ordinate construction planning and temporary traffic management for the CSIE project, CSET and CUH construction activities. This will ensure a collaborative approach to managing the impacts of construction across the Campus and to avoid unforeseen impacts on critical care operations of the hospital.
- 9.1.66 *CUH request that micro-simulation work is undertaken for the operational phase of the Station around the Station Access forecourt and Francis Crick Avenue / Guided Busway junction.*
- 9.1.67 The potential impact on Francis Crick Avenue/CGB junction, focusing on the pedestrian and cycle crossing across the southern arm of the junction has been assessed. Using the location of existing trip generators within the CBC and professional judgement, assumptions have been made to determine the predicted demand on the crossing generated by the station. To ensure that the assessment is robust, the assumptions erred on the side of caution, potentially overestimating pedestrian and cycle demand for the crossing generated by the station. In summary, it has been assumed that:
- Cyclists travelling to and from the CGB (East), cyclists travelling from the station to the south using the southbound cycle lane on Francis Crick Avenue (south) and cyclists travelling to the station from Francis Crick Avenue (north) are assumed to add to demand for the crossing;
 - Cyclists travelling to the station from Francis Crick Avenue (south), and from the station to Francis Crick Avenue (north) were not counted towards the demand for crossing; and
 - All pedestrians travelling to and from the CGB (East) are assumed to use the crossing.
- 9.1.68 Overall, in the AM and PM peaks, 80% of pedestrian and 85% of cycle trips generated by the station to/from the east are assumed to use the Francis Crick Avenue (south) crossing. Based on the above, the station is predicted to generate additional 277 pedestrian and 77 cycle movements on the Francis Crick Avenue (south) crossing during the peak hours.
- 9.1.69 The traffic signal specifications for the existing signal-controlled junction received from CCoC and signal timings for the proposed junction, indicate that approximately 35 pedestrian and cycle crossing stages are available per hour. As such, additional demand for crossing generated by the station equates to approximately two additional cycle movements and eight additional pedestrian movements per pedestrian stage in the AM and PM hours. Given that the proposed improvements to the junction

involve widening the crossing from the existing 3.8m to 8m, it is judged that the predicted increase in pedestrian and cycle demand could be easily accommodated within this increased crossing width.

- 9.1.70 A Viswalk microsimulation has also been undertaken to assess the impact of the additional pedestrian, cycle and public transport demands on the key crossing across the southern arm of the Francis Crick Avenue/Guided Busway junction.
- 9.1.71 The 2031 Viswalk Without Station Base model features the existing layout at the Francis Crick Avenue/Guided Busway junction without the station. During the AM peak hour, queues of cyclists and pedestrians form very quickly on the shared use path which runs alongside the guided bus-way due to a lack of capacity to accommodate the eastbound cycling demand on the existing toucan crossing across the southern arm of Francis Crick Avenue.
- 9.1.72 With the proposed Cambridge South station in place, the toucan crossing across the southern arm of Francis Crick Avenue is widened from 3.8m to 8m to increase the crossing capacity for cyclists and pedestrians. The 2031 With Station Viswalk model indicates that during the AM peak hour the queuing issue is mitigated, with cyclists and pedestrians generally clearing within each crossing cycle.
- 9.1.73 **Wayfinding for the station** once operational will also need close consideration prior to implementation so it is requested the CUH are involved within the development of any wayfinding and signage strategy for the Station within the Campus.
- 9.1.74 NR are only responsible for the wayfinding within the scheme boundary, all other elements would sit with the campus stakeholders.
- 9.1.75 **Enforcement and Monitoring.** CUH note there is an allowance for drop-offs within the Station Forecourt, although they anticipate this may trigger issues with the ANPR system and would ask whether drop offs could be provided away from the Station at the edge of the Campus. CUH have raised this in previous consultations, but this will need to be resolved if fines are to be avoided for those dropping off at the station and to keep traffic volumes through the campus sensible.
- 9.1.76 I have been advised that the ANPR cameras are set with timings of a journey where vehicles travelling straight through the Campus at 30 mph or more (the speed limit for the site is 20 mph) are issued with a ticket by Cambridgeshire Police. Vehicles stopping at the station to drop off or pick up passengers will therefore not generate a ticket.
- 9.1.77 CUH note that the TOC will have responsibility over the Station Forecourt and its operation. However, in the event that there are issues with the forecourt that unacceptably impact the campus and its operation, CUH wishes to understand what recourse they have to resolve these issues and whose responsibility the enforcement of proper use lies with. This is particularly of concern for taxis who currently park in unauthorised locations whilst waiting to pick up elsewhere across the Campus.
- 9.1.78 As shown in Table 8.1 it is predicted that 3% of trips to/from the station will involve taxi interchange. During the AM peak hour 18 passengers would be arriving and leaving the station by taxi; this equates to approximately one taxi every three minutes. Based on this level of demand, three taxi bays are anticipated to provide sufficient capacity to meet average demand. Similar demand is estimated during the PM peak. The TOC will have responsibility for operation and enforcement in the station forecourt.

OBJ07– Trumpington Residents’ Association

9.1.79 The Trumpington Residents’ Association Objection raises the following issues relevant to my area of expertise:

- Proposed shared use path to the western station building
- Proposed pedestrian access to the western station building;
- Cycle parking at the western side of the station building; and
- Highways and public transport.

9.1.80 I deal with each of these issues in turn; first summarising the issue raised, before setting out my response.

9.1.81 ***Proposed shared use path to the western station building.*** Trumpington Residents’ Association strongly objects to the alignment proposed by Network Rail for this part of the proposed shared cycle/pedestrian path from the Cambridge Guided Busway to the western station building. The Association proposes that the existing shared use path from the Cambridge Guided Busway to the beginning of Addenbrooke’s Bridge embankment is widened to provide necessary capacity at peak times, branching off to the western station building shortly before the ascent to Addenbrooke’s Bridge.

9.1.82 The proposed alignment of the segregated (not shared) path has been designed in accordance with the LTN 1/20 cycle design guidelines and follows the existing reinforced grass path which will be the most direct desire line between Trumpington, the Cambridge Guided Busway crossing and the proposed station. Using the existing shared use path along the southern side of the Cambridge Guided Busway would require deviation from this desire line, and pedestrians and cyclists would still use the existing reinforced grass path through the park.

9.1.83 *Of the two alternatives the Association proposed to Network Rail for this part of the proposed path during public consultation, they prefer it to run from the Addenbrooke’s Bridge embankment along the northern edge of North Ditch, thereby significantly reducing its intrusion into Hobson’s Park and avoiding any loss of existing trees and shrubs in the north east corner of the site.*

9.1.84 A meeting was held with CCoC, CCiC and GCP on 8 December 2021 to discuss the proposed path and the alternative alignment. CCoC stated that they do not want to introduce additional pedestrian and cycle demand on the existing shared use path to the south of the Guided Busway. Notes of the meeting are shown in Appendix F.

9.1.85 The proposed alignment of the shared use path is located close to the northern boundary of Hobsons Park to reduce intrusion whilst providing the most direct route between Trumpington, the Cambridge Guided Busway crossing and the proposed station.

9.1.86 ***Proposed pedestrian access to the western station building.*** Trumpington Residents’ Association objects to Network Rail’s proposed use of an existing pedestrian path through the heart of Hobson’s Park to provide access for “its users” to the western station building due to inadequate provision being made to prevent the path’s misuse by cyclists. They request Network Rail to ensure that measures are taken to prevent cyclists using the existing path as a shortcut through the Park, which would be unacceptably intrusive – and unnecessary when a good cycle path would be available nearby.

9.1.87 Within Hobson’s Park all paths are currently permissive allowing cyclists and pedestrians alike to use them. Network Rail is therefore remitted to providing similar. Signage would be provided to direct cyclists to the station on the new segregated path rather than using existing paths in the park.

Cambridgeshire County Council and South Cambridgeshire Council have aspirations for urban realm improvements such as lighting and planting around the proposed path that they have asked Network Rail to consider as part of the detailed design.

- 9.1.88 **Cycle parking at the western station building.** *The Association strongly objects to the proposal to provide 500 of the 1,000 total cycle spaces, including obtrusive two-tier racks, plus up to 50 spaces for gauge cycles, at the western station building. They consider this is an unwarranted intrusion into Hobson's Park that would encourage cyclists to misuse the Park's existing passive recreation paths rather than sticking to the dedicated cycle paths, thereby disrupting the tranquil space to which they attach great value.*
- 9.1.89 It is predicted that about 48% of cycle trips will be to/from the west and 52% to/from the east, equating to 373 return trips from the west and 410 return trips from the east. The current proposal has 442 cycle parking spaces in the east forecourt and 558 cycle parking spaces in the west forecourt. The east forecourt is very constrained in terms of available space and cannot realistically accommodate more cycle parking than is currently proposed. Therefore, to accommodate the predicted cycle trips from the areas to the west, including Trumpington, there is a need for cycle parking on the west side of the station.
- 9.1.90 However, cycle access and cycle parking are subject to detailed design. The final design will be submitted to Greater Cambridge Shared Planning for approval as part of a discharge of conditions application, as set out in draft planning condition 19 within document **NR12** Request for Deemed Planning permission of the TWAO application.
- 9.1.91 **Highways and public transport.** *The objection suggests that the application for Cambridge South station did not include measures to overcome deficiency in bus service provision. The Association objects to this situation and ask that the Order to include a condition that adequate bus stops are made available on both carriageways of Francis Crick Avenue to serve passengers wishing to enter or exit the new station.*
- 9.1.92 Bus stops are located on both sides of Francis Crick Avenue to the north and south of the station. The existing Guided Busway runs along the northern boundary of the proposed station and includes services to Cambridge city centre and Trumpington park and ride. The closest Guided Busway stops in each direction are located outside Royal Papworth Hospital approximately 250m east of the proposed station. The Guided Busway stops have shelters and timetables and serve Guided Busway routes A and D. The existing bus stops are adequate to serve passengers interchanging with the station.
- 9.1.93 Section 9.5 of the TA (**NR-16**) provides an assessment of predicted public transport trips generated by the station. The assessment indicated that additional demand for public transport services generated by the station could be easily accommodated by existing bus services along the CGB and Francis Crick Avenue. It is therefore judged that there are no deficiencies in bus service provision.
- 9.1.94 It should be noted that it is beyond the scope of the project to make major changes to the purpose of public transport assets owned and operated by external parties such as Cambridgeshire Guided Busway. Network Rail are working with campus stakeholders to improve transport integration where feasible within the project's remit.
- 9.1.95 CSET will provide improved bus interchange with Cambridge South station with a bus stop located on Francis Crick Avenue just south of the eastern station access. Network Rail are working closely with Greater Cambridge Partnership in respect of collaborative working to deliver both the Cambridge

South Station scheme and CSET. To that end, Network Rail are entering into a Statement of Common Ground with CSET and the Greater Cambridge Partnership to ensure that both schemes deliver the best possible outcome for users.

OBJ11 – Cambridge Medipark Limited

9.1.96 The Cambridge Medipark Limited Objection raises the following issues relevant to my area of expertise:

- Impact on Francis Crick Avenue;
- Additional maintenance and traffic management costs;
- Temporary road closures and diversions during construction works;
- Cycle parking and impact on cycle users of the CBC cycleways; and
- Impact on the Traffic Regulation Order used to prevent traffic to cut through the Campus.
- Cumulative impacts with the Greater Cambridge Partnership proposals for CSET.

I deal with each of these issues in turn; first summarising the issue raised, before setting out my response.

9.1.97 ***Impact on Francis Crick Avenue.*** *The Scheme proposes a very small number of drop off car parking spaces which appears to be insufficient for the volume of likely travellers to and from the station. The objection questions how Network Rail intend to avoid people waiting on Francis Crick Avenue and the other main routes within the Campus while they await trains to arrive.*

9.1.98 As shown in Table 6.8 of the TA (NR-16, Appendix 17.2), vehicular trips would account for 5% of total trips (2% car passenger drop off and pick up and 3% taxi) which equates to 36 vehicular trips during the peak hours, or one every 2 minutes. Most drop offs most likely will involve less than a minute dwell time, whilst pick-ups are likely to be limited to 10 minutes dwell time.

9.1.99 Given the above, 3 pick-up/drop off bays and 3 taxi bays will provide sufficient capacity for the predicted level of demand. For this reason, the possibility of vehicles stacking back onto Francis Crick Avenue and impacting upon through traffic is unlikely. The TOC will have responsibility for operation and enforcement in the station forecourt.

9.1.100 The above potential measures would ensure that the potential impact on Francis Crick Avenue is identified and addressed at an early stage.

9.1.101 *There is also no provision for buses to access the station car park directly, meaning passengers arriving by bus will be dropped at the nearest bus stop on Francis Crick Avenue which risks creating further delays and increased danger to pedestrians.*

9.1.102 The station has been located and designed to maximise sustainable travel opportunities, including interchange with public transport. The east forecourt of the station is very constrained in terms of available space and needs to accommodate disabled parking, staff parking, taxi bay and cycle parking. No space is available for bus stops in this area.

9.1.103 Bus stops are located on both sides of Francis Crick Avenue to the north and south of the station. The existing Guided Busway runs along the northern boundary of the proposed station and includes services to Cambridge city centre and Trumpington park and ride. The closest Guided Busway stops

in each direction are located outside Royal Papworth Hospital approximately 250m east of the proposed station. The Guided Busway stops have shelters and timetables and serve Guided Busway routes A and D.

- 9.1.104 Section 9.5 of the TA **(NR-16)** provides an assessment of predicted public transport trips generated by the station. The assessment indicated that additional demand for public transport services generated by the station could be easily accommodated by existing bus services along the CGB and Francis Crick Avenue.
- 9.1.105 The pedestrian crossing across the southern arm of the Francis Crick Avenue/Guided Busway junction will be widened which will improve safe connections between the station and local bus stops.
- 9.1.106 ***Additional maintenance and traffic management cost.*** *The objection suggests that a new station will undoubtedly increase the vehicular movements upon the existing highway infrastructure, namely Addenbrooke's Road, Francis Crick Avenue, Robinson Way and Dame Mary Archer Way, some of which are privately owned roads. This is likely to require additional maintenance to be carried out by Cambridge Medipark. In addition, the proposed access way into the station located near to the Guided Busway junction on Francis Crick Avenue and additional peak hour traffic may result in a need for additional traffic management to regulate the movement of vehicles along Francis Crick Avenue. The objection states that, Network Rail should be required to accept the burden of increased maintenance costs and any other costs relevant to their use authorised by the Draft Order.*
- 9.1.107 As stated previously, the station is likely to generate 36 vehicular trips during the peak hours, or one every 2 minutes. However, background traffic is likely to reduce on the CBC road network due to modal shift from road to rail.
- 9.1.108 As shown in Table 6.8 of the TA **(NR-16)**, vehicular traffic generated by the station, consisting of taxi and passenger drop-off trips, will equate to 317 daily two-way trips (634 vehicle movements). At the same time, it is predicted that the station will lead to reduction of 746 two-way vehicle trips per day (1,492) on the local road network (Table 5.7 of the TA), as the station will provide an alternative to travelling to and from the CBC by car.
- 9.1.109 Sensitivity testing has been carried out for a more conservative approach to the highway trip reduction forecast to be generated by Cambridge South. This involved assuming that the reduction in traffic will be equally split between three main accesses to the CBC (Addenbrooke's Road, Robinson Way and Main Drive) and for trips to and from Addenbrooke's Road are equally split between Francis Crick Avenue and Dame Mary Archer Way. Appendix E of this note includes a table that shows the resultant predicted gross and net reduction in traffic as a result of the proposed development, against the 2031 baseline, on the links and roads assessed for the operational traffic effects. The findings demonstrate that the proposed development would have overall positive effects in all scenarios during the operational phase via the reduction in vehicular trips on the local road network, through encouraging more people to travel by rail to and from the CBC and surrounding area and through encouraging sustainable travel.
- 9.1.110 As such the view that "a new station will undoubtedly increase the vehicular movements upon the existing highway infrastructure" is not correct. Furthermore, the assessment of the impacts presented in the TA **(NR-16)** does not support the claim that "*additional peak hour traffic may result in a need for additional traffic management to regulate the movement of vehicles along Francis Crick Avenue*". As presented in the Section 8 of the TA **(NR-16)**, the addition of the extra stage at the Francis Crick Avenue / Guided Busway junction for the station exit arm will result in degrees of saturation which are below the acceptable limit of 90% in all scenarios. The modelling results demonstrate that traffic

generated by the proposed station will have minimal impact on the proposed access junction. The proposed CSET scheme would incorporate an alternative station access to the south under priority junction control involving left in left out turning movement, which would have minimal impact on operation of Francis Crick Avenue (and which in any event is not an impact of the CSIE Project).

9.1.111 Network Rail is currently liaising with Cambridge Medipark Limited regarding potential contribution to maintenance costs and any other costs relevant to infrastructure use in the CBC.

9.1.112 ***Temporary road closures and diversions during construction works.*** *Temporary road closures and diversions during construction works are likely to have a serious impact and Cambridge Medipark Limited has particular safety concerns in regard to the impact on the Francis Crick Avenue junction with the Guided Busway during the construction of the new station access road. Medipark is also concerned that the limited area for construction will adversely impact the road network.*

9.1.113 In order to minimise potential impacts on users of Francis Crick Avenue and other roads within the CBC, the principal Contractor will ensure that the extent and duration of any required road closures during the construction are limited. Where required, temporary traffic management measures, including the use of traffic marshals, would be employed to address any potential safety concerns and to minimise impacts on other road users.

9.1.114 The proposed construction methodology, construction haul roads and construction areas were developed to ensure that all necessary construction activities could be undertaken within the identified construction areas and compounds, and to avoid as much as possible adversely impacting the road network and its users within the CBC. It should be noted that construction haul roads HR3 and HR 6 would remove most construction traffic from Francis Crick Avenue.

9.1.115 Design and mitigation measures designed to minimise negative effects during construction and operational phases are outlined in Section 17.4 of the ES (**NR-16**). The identified and other relevant mitigation measures will be included in the CTMP which will form part of the CoCP Part B. The CCoC will be submitted to the Local Planning Authority to discharge a deemed planning condition as identified in Schedule 1 of the Request for Deemed Planning Permission (**NR12**). The CTMP would include details of any temporary road closures and diversions during the construction works.

9.1.116 ***Cycle parking and impact on cycle users of the CBC cycleways.*** *Medipark notes that the proposal for 1,000 cycle parking spaces, whilst necessary, may not be sufficient, based on their experience of demand for cycle parking on the Biomedical Campus. This means that the Scheme may result in bicycles being left in the facilities provided by the occupiers of the Campus for use by their staff. The objection suggests that there is also likely to be an increased impact on the cycleways on the Campus which will require maintenance and may affect the usability of the routes for the Campus occupiers.*

9.1.117 As shown in Table 8.1, it is predicted that 24% of trips to/from the station will be cycling trips which equates to about 780 return trips per day in 2031. 1000 cycle parking spaces will be provided on both sides of the station which will provide sufficient capacity. Improved cycle links will be provided to access the station. These measures include:

- Providing cycle and pedestrian access from both the east and west (with cycle parking provided on both sides of the railway);
- Widening the existing crossings at the Francis Crick Avenue/Guided Busway junction;
- Widening the shared use cycle path on the west side of Francis Crick Avenue from the north of the Guided Busway;

- Widening the existing crossing across the Guided Busway connecting Trumpington residential area and Hobson's Park;
- Providing a segregated pedestrian and cycle path through Hobson's Park approximately parallel to the Guided Busway

9.1.118 Daily cycle trips from/to the east (CBC) side of the station in 2031 are predicted to equate to 407 return trips. During AM and PM peak hours, on the east (CBC) side, cycle trips to and from the station are predicted to equate to 82 trips per hour, or slightly more than one cycle movement per minute. This level of additional demand could be easily accommodated within the existing cycleways on the campus and proposed improvements without material impact on usability of the existing routes, and within the level of proposed cycle parking at the station. Network Rail is currently liaising with Cambridge Medipark Limited regarding potential contribution to maintenance costs and any other costs relevant to infrastructure use in the CBC.

9.1.119 ***Impact on the Traffic Regulation Order used to prevent traffic to cut through the Campus.*** *There is currently a Traffic Regulation Order in place to ensure that the private estate roads are not used as a cut through to Long Road and the city centre. The effects of the Draft Order upon this are unclear.*

9.1.120 The Traffic Regulation Order will remain unchanged with enforcement continuing using the existing ANPR system to ensure that the private estate roads are not used as a cut through to Long Road and the city centre. For further details please see the response to **OBJ 6** above.

9.1.121 ***Cumulative impacts with the Greater Cambridge Partnership proposals for CSET.*** *NR and GCP have not explained how the two schemes will interact and provided a cumulative assessment of the schemes.*

9.1.122 NR are negotiating a Protocol Agreement with GCP to manage the interfaces between the two projects that confirm that both schemes can be delivered concurrently in order to minimise construction impacts on the local area. The agreement also demonstrates how both schemes will interact during operational phases and maximise intended benefits of each scheme by complementing each other.

9.1.123 The CSET scheme will involve a complete reconfiguration of the Francis Crick Avenue/ Guided Busway junction and Francis Crick Avenue, as well as the adjacent pedestrian and cycle infrastructure. The final junction layout is to be confirmed by GCP. As such, undertaking a cumulative impact of the CSET scheme for the layout proposed as part of the CSIE Project would be meaningless (because it effectively involves replacing the current arrangements). Therefore, the cumulative impact taking into account both schemes will have to be undertaken by GCP as part of their TWAO application.

OBJ13 – Cambridge Ramblers Group

The issues raised by the Cambridge Ramblers Group have been resolved and they have withdrawn their Objection.

OBJ15 – The Pemberton Trustees

9.1.124 The Pemberton Trustees Objection raises the following issues relevant to my area of expertise:

- Station access arrangements;
- Farm Access; and
- Cambridge Guided Bus

9.1.125 I deal with each of these issues in turn; first summarising the issue raised, before setting out my response.

9.1.126 Station access arrangements. *No detailed design has been provided as to the layout of access arrangements from existing roads to the proposed station. There is also impact on the access to future developments. These do not appear to have been taken in to account in the outline layout of the scheme.*

9.1.127 Vehicular access to the proposed new station will be via Francis Crick Avenue, the proposed access junction layout is shown in Appendix N in the TA (**NR-16**, Appendix 17.2). The station access will not impact access arrangements to future developments.

9.1.128 Farm Access. *There is an adverse impact on the access to farmland that is in the ownership and occupation of The Pemberton Trustees and its farming businesses, and the provision of future access appears to also impact on adversely, or conflict with, the provision of realigned public access and cycleways, which potentially restricts access to the retained farmland. Further detail of a satisfactory arrangement for this access is required.*

9.1.129 Network Rail have advised the objector that the CSET project will have an influence on how future access to its retained land South of Addenbrooke's Road will be provided and that Network Rail are working closely with the Guided Busway, Cambridgeshire County Council and CSET in respect of its future plans, developing a Statement of Common Ground with them to ensure collaborative delivery of both schemes. Network Rail is seeking to engage further with the objector with a view to reaching a satisfactory arrangement that ensures that permanent future access to the objector's retained land is not adversely impacted or restricted as a result of the CSIE Project.

9.1.130 Cambridge Guided Bus. *The TWAO application for Cambridge South Station is running concurrently with an application by Cambridge South East Transport (CSET) for the extension and construction of a busway. There appears to be a lack of collaboration and alignment of interests in that separate consultations and schemes are taking place and there is an opportunity for integration that would create a more beneficial and less damaging transport arrangement.*

9.1.131 NR are negotiating a Protocol Agreement with GCP to manage the interfaces between the two projects that confirm that both schemes can be delivered concurrently to minimise construction impacts on the local area. The agreement also demonstrates how both schemes will interact during operational phases and maximise intended benefits of each scheme by complementing each other.

OBJ17 – Countryside Cambridge One Limited and Countryside Cambridge Two Limited

9.1.132 The Countryside Objection raises the following issues relevant to my area of expertise:

- Impact of the Scheme on the pedestrian and cycle routes; and
- Insufficient consideration of the impact of the Scheme in combination with other proposals for public transport links to the Biomedical Campus.

9.1.133 I deal with each of these issues in turn; first summarising the issue raised, before setting out my response.

9.1.134 *Impact of the Scheme on the pedestrian and cycle routes.* Countryside are concerned with the proposals to remove the pedestrian and cycle access from the Country Park to the Active Recreation Area under the Guided Busway Bridge. They feel that despite extensive discussions with Network Rail, the arrangements for the provision of a safe alternative access route are unclear. While there has been some discussion around pedestrian access being taken by crossing over the Guided Busway, these proposals are not suitable for cyclists, wheelchair and pushchair users and Countryside are concerned that the needs of such users are not being properly considered. There are also safety concerns around pedestrians crossing the Guided Busway unless a signalled crossing is provided. The objection suggests that Network Rail will need to satisfy all parties that a safe alternative access can be achieved.

9.1.135 A new pedestrian crossing will be provided across the Guided Busway to link Hobsons Park with the Active Recreation Area. This facility is currently in design development in accordance with the Guided Busway Design Handbook and has been discussed with CCoC. The proposed scheme will be subject to technical approval from CCoC and will be subject to Road Safety Audit, hence it can be assumed that the proposal will be safe. The new crossing will consequently also be suitable for cyclists, wheelchair and pushchair users.

9.1.136 *Insufficient consideration of the impact of the Scheme in combination with other proposals for public transport links to the Biomedical Campus.* Network Rail and Greater Cambridge Partnership have not explained how the proposed station and Cambridge South East Transport scheme will interact and have not reached an agreement for working in partnership, creating further difficulties for Countryside in assessing the impact of the Scheme. It is considered on present information that the assessment of cumulative impact with the GCP proposals is inadequate.

9.1.137 Details regarding the CSET project and how it is proposed to be integrated with the CSIE Project are presented in Section 2 of this Proof of Evidence. The section also includes details regarding NR working together with the CSET design team and promoters on integrating and maximising the potential benefits to users of both schemes, including reference to the Protocol Agreement that is in the process of being finalised and which will be shared with Countryside following its conclusion.

9.1.138 The CSET scheme will involve a complete reconfiguration of the Francis Crick Avenue/Guided Busway junction and Francis Crick Avenue, as well as the adjacent pedestrian and cycle infrastructure. The final junction layout is to be confirmed by GCP. As such, undertaking a cumulative impact of the CSET scheme for the layout proposed as part of the CSIE scheme would be meaningless (because it effectively involves replacing the current arrangements). Therefore, the cumulative impact taking into account both schemes would have to be undertaken by GCP as part of their TWAO application.

OBJ18 – Cambridgeshire County Council (CCoC) and Greater Cambridge Partnership (GCP)

9.1.139 The CCoC and GCP's Objection raises the following issues relevant to my area of expertise:

- Impact on highway network for which CCoC is the appropriate authority;
- Overlap between the Order and CSET scheme: and
- Land Requirements.

9.1.140 I deal with each of these issues in turn; first summarising the issue raised, before setting out my response.

9.1.141 *Impact on highway network for which CCoC is the appropriate authority.* *The Council has concerns regarding the highway network for which it is the appropriate authority. The Council would like to reserve its position on the impact the Order may have on the highway network in this regard*

9.1.142 The submitted CCoC objection did not identify any specific issues regarding potential impacts on the highway network, and no further specific objections have been received from CCoC since.

9.1.143 Nevertheless, Network Rail will continue to work with CCoC and GCP with regard to impact on the highway network. The final design will be submitted to Greater Cambridge Shared Planning for approval as part of a discharge of conditions application, as set out in draft planning condition 19 within document **NR12** Request for Deemed Planning permission of the TWAO application.

9.1.144 *Overlap between the Order and CSET scheme.* *It is envisaged that there will be considerable overlap between the construction periods and land required for both the Order and CSET Scheme. It is therefore of critical importance that Network Rail works collaboratively with the GCP to ensure that both schemes can be brought forward together, and sympathetically designed to accommodate one another to ensure that that can happen. GCP hopes that work on a Statement of Common Ground (and associated agreements) will continue to progress in addition to satisfactory amendments to the draft Order (in particular Protective Provisions) being made in order to address the GCP's concerns.*

9.1.145 Details regarding CSET project and how it is proposed to be integrated with the Cambridge South scheme are presented in Section 2 of this Proof of Evidence. The section also includes details regarding working together with the CSET design team and promoters on integrating and maximising potential benefits to users of both schemes, including the Protocol Agreement that is close to finalisation. The Statement of Common Ground to which GCP refer is also close to finalisation and an update will be provided to the inquiry in due course.

9.1.146 **Land Requirements.** *GCP's support for the Scheme is conditional on an agreement with Network Rail in respect of the following points;*

a) GCP requires an agreement with Network Rail to ensure both schemes are in agreement in respect of the powers required to ensure that both schemes are co-ordinated in seeking to acquire the permanent or temporary land or rights, and alterations to streets provided for in schedules 2 to 9 of the Order.

b) A better understanding of Network Rail's intended use of the Genome Path is required. Network Rail has advised that works to the Genome Path are not required for the delivery of its scheme. An agreement between GCP and Network Rail is required as to the status and requirement of the Genome Path throughout the construction of the Network Rail scheme.

c) Clarification is required from Network Rail in respect of land required for site access, including access to Network Rail's works compound, and access to Francis Crick Way. Agreement is required with Network Rail in respect of which rights are required over Francis Crick Avenue.

d) Agreement is required in respect of ownership and management rights to clarify what rights are needed from each other for each respective schemes and who will obtain the benefit of those rights.

9.1.147 NR are negotiating a Protocol Agreement with GCP to manage the interfaces between the two projects that confirm that both schemes can be delivered concurrently to minimise construction impacts on the local area. The agreement also demonstrates how both schemes will interact during operational phases and maximise intended benefits of each scheme by complementing each other.

OBJ19 – St Mary's School

9.1.148 The St Mary's School Objection raises the following issues relevant to my area of expertise:

- Access arrangement to Plot 001; and
- Quantum and nature of construction traffic.

9.1.149 I deal with each of these issues in turn; first summarising the issue raised, before setting out my response.

9.1.150 Access arrangement to Plot 001. *For Plot 001 the Draft Order indicates "POWERS OF LIMITED TEMPORARY USE OF LAND" are sought. However, the Draft Order also indicate "ACCESS TO BE STOPPED UP TEMPORARILY". The objection states that Network Rail have failed to provide the timescales/dates/proposals/schedules for the temporary stopping up this access. The closing of the access could have serious detrimental and disruptive impact on the operation of the site as playing fields for St Mary's School, Homerton College and the local community. Seeking alternative arrangements for the provision of these services and facilities had not been envisaged.*

9.1.151 The access will only be stopped up on a temporary basis for short periods during construction, such as overnight periods. NR are working with St Mary's School to agree the most convenient times to limit the impact of these temporary closures.

9.1.152 Quantum and nature of construction traffic. *Details on the quantum and nature of the traffic that will be using the road to Plot 001 both during and post the construction phase were not provided. Whilst Network Rail record the road as a public highway, as part of the planning consent for developing the playing fields, St Mary's Schools is subject to an obligation to significantly upgrade the road at huge expense. The objector is concerned about the potential damage Network Rail's machinery and vehicles could cause to this road after it has gone to the significant expense of upgrading it.*

9.1.153 Construction traffic is estimated to be 6 vehicle movements per day during the peak construction period in 2023. During the operational phase, only occasional access will be required for

maintenance. NR are liaising with St Mary's School and have confirmed that in the unlikely event that damage is caused to the access road, Network Rail will make good.

OBJ20 – Mr Dave Jackson

9.1.154 The objection from Mr Jackson raises the following issue relevant to my area of expertise:

9.1.155 ***Object to the idea of the station being used to reduce reliance on Cambridge Station in the City Centre.*** *One of the major reasons given for the new station is to reduce traffic due to the increase in numbers working and visiting the biomedical campus. Encouraging the use of the station by those living in the villages to the South of Cambridge even if taking cars to the park and ride sites would be intolerable as it would bring a significant increase in motorised traffic to an area where there is already too much.*

9.1.156 The proposed station at Cambridge South is a destination station primarily intended for those travelling to the Cambridge Biomedical Campus. Parking is very limited at the station so those wishing to use it will need to arrive on foot or by bicycle. I do not therefore consider it likely that the station will result in a significant increase in motorised traffic.

OBJ21 - Mr and Mrs Price

9.1.157 The Objection from Mr and Mrs Price raises the following issues relevant to my area of expertise:

- Cycle parking on the western side of the station;
- New access path to the station along North Ditch; and
- Raising level of the existing footpath approaching the station from the SW.

9.1.158 I deal with each of these issues in turn; first summarising the issue raised, before setting out my response.

9.1.159 ***Cycle parking on the western side of the station.*** *Extensive cycle parking on the west side of the station in the park when more of it ought to be placed on the east side;*

9.1.160 It is predicted that about 48% of cycle trips will be to/from the west and 52% to/from the east, equating to 373 return trips from the west and 410 return trips from the east. The current proposal has 442 cycle parking spaces in the east forecourt and 558 cycle parking spaces in the west forecourt. The east forecourt is very constrained in terms of available space and cannot realistically accommodate more cycle parking than is currently proposed. Therefore, to accommodate the predicted cycle trips from the areas to the west, including Trumpington, there is a need for cycle parking on the west side of the station.

9.1.161 However, cycle access and cycle parking are subject to detailed design. The final design will be submitted to Greater Cambridge Shared Planning for approval as part of a discharge of conditions application, as set out in draft planning condition 19 within document NR12 Request for Deemed Planning permission of the TWAO application (NB this condition may have been renumbered within the revised draft conditions contained in the Proof of Evidence of Mr Pearson (**NRE 9.2**)).

9.1.162 ***New access path to the station via Hobson's Park.*** *This new access path ought to be placed along the north side of North Ditch between the busway and the Ditch. This would provide a much better link to the cycle path along the busway and it would significantly reduce the impact on the park.*

9.1.163 The proposed alignment of the segregated path follows the existing reinforced grass path which will be the most direct desire line between Trumpington, the Cambridge Guided Busway crossing and the proposed station. Using an alignment along the north side of North Ditch between the Guided Busway and the Ditch would:

- require deviation from this desire line, and pedestrians and cyclists would still use the existing reinforced grass path through the park.
- result in a greater degree of culverting of the North Ditch at both its eastern and western end through Hobson's Park and would increase the impact on the ditch itself. This is because a 4m wide bridge/culvert would be required to accommodate the shared cycle/pedestrian path at its eastern end, and a broader station forecourt/spill-out space at its eastern end is likely to lead to a longer culvert here.
- require the creation of an adversely steep-sided, heavily-engineered embankment to the North Ditch as the path must gain height as it crosses the watercourse in order to reach the platform level, which is approximately 900mm above the height of the current rails. The height of the embankment would be approximately 3.0m at its maximum point.
- probably lead to a greater number of people attempting to traverse the slope of current busway embankment and create a worn desire line through the vegetation upon it, as a short cut to the station from the Guided Busway bridge. As part of the design process we follow 'safe by design' principles to design out risks, e.g. of fall/injury where possible, raise parapets on structures.

9.1.164 ***Raising the level of the existing footpath approaching the station from the SW.*** *The existing footpath approaching the station from the SW is being "raised to provide level access into the station". The raised path would be very intrusive and threaten the wood which is becoming well established now.*

9.1.165 The existing footpath will have a minimal increase in level of about 1m to tie in with the western forecourt. Should the path raising proposals be omitted a set of accessibility-standard compliant steps/ramps (with handrails, tactile paving etc) would be required instead to provide users with appropriate means of traversing this change in level. The Landscape and Visual Impact Assessment contained within Chapter 13 of the ES (NR-16) considered that these would be more visually intrusive than the subtle gradual change in level that is proposed. The proposed development also includes a suitable degree of compensatory woody planting elsewhere within the Park.

OBJ22 – Smarter Cambridge Transport

9.1.166 The Smarter Cambridge Transport Objection raises the following issues relevant to my area of expertise:

- The proposed station design has highly conflicted access arrangements;
- The proposed station is poorly integrated with bus services: and
- Cambridge Biomedical Campus Transport Needs Review

9.1.167 In addition, Smarter Cambridge Transport has reviewed the Transport Assessment supporting the proposals and made a number of technical observations.

9.1.168 I deal with each of these issues in turn; first summarising the issue raised, before setting out my response. The response to Transport Assessment observations is provided in Appendix G.

9.1.169 *The project as proposed has highly conflicted access arrangements.* *The principal (eastern) station entrance is highly constrained by the eastern busway abutment. The narrow access corridor creates an environment that will be highly conflicted at peak times, when there are large volumes of pedestrian, cycle and motor vehicle movements. Adjacent junctions with Francis Crick Avenue for the busway and station access road will create further conflicts and increase delays for people walking and cycling. Modelling for the TA shows that congestion on Francis Crick Avenue will delay buses travelling south from Long Road*

9.1.170 The proposed eastern forecourt layout represents the best use of the available space in order to minimise any potential conflict between pedestrian, cycle and vehicle movements. A segregated cycle path will provide access to the cycle parking on the north side of the forecourt. A segregated pedestrian route provides access to the station from the widened controlled crossings at the junction of Francis Crick Avenue/Guided Busway whilst another segregated pedestrian path provides a route for pedestrians with destinations south of the station.

9.1.171 The forecourt provides limited disabled parking bays, taxi bays and pick up/drop off bays. As shown in Table 6.8 of the TA (**NR-16**, Appendix 17.2), 36 vehicular trips are predicted during the peak hours, or one vehicle every 2 minutes. These facilities are located close to the station building entrance to provide easy access for passengers.

9.1.172 Background traffic on the CBC road network will reduce with the station due to modal shift from road to rail. The traffic modelling indicates a reduction in delay for southbound buses from 36 seconds to 31 seconds in the PM peak.

9.1.173 Access arrangements from the west are also appropriate for anticipated pedestrian and cycle demand whilst balancing the need to mitigate against impacts of the park.

9.1.174 Daily cycle trips from/to the east (CBC) side of the station in 2031 are predicted to equate to 814 trips. During the AM and PM peak hours cycle trips to and from the east side of the station are predicted to equate to 82 trips, or slightly more than one cycle movement per minute.

9.1.175 Daily pedestrian trips from/to the east (CBC) side of the station in 2031 are predicted to equate to 3,094 trips. During the AM and PM peak hours pedestrian trips to and from the east side of the station are predicted to equate to 346 trips, or less than six pedestrian movements per minute.

9.1.176 During AM and PM peak hours, on the eastern (CBC) side, vehicular flows to and from the station are predicted to equate to 71 vehicular movements which equates to approximately one movement per minute.

9.1.177 This level of additional demand could be easily accommodated within the proposed eastern station forecourt and station access routes. Therefore, it is not correct to say that the principal (eastern) station entrance is highly constrained.

9.1.178 *The station is poorly integrated with bus services.* *The bus stops on Francis Crick Avenue will be 200m from the station entrance. For someone alighting from the rearmost carriage of a northbound train, the walk to a bus stop would be 450m, taking seven minutes. This does not accord with the government's Bus Back Better guidance.*

- 9.1.179 The Government's Bus Back Better guidance does not include a specific distance bus stops should be located in relation to railway stations. The guidance states that *"Railway stations should be hubs for connecting services with high quality stops close to station entrances. Schemes that move buses further away from stations should not be allowed"*. As demonstrated below, the proposed Cambridge South Station accords with the guidance by ensuring access to bus services within short walking distance.
- 9.1.180 Local bus stops are provided as close as reasonably practicable to the station entrance. This needs to be balanced against the complex use of the highways infrastructure in the area. The closest existing bus stop to the proposed Station is about 200m from the station entrance and located on the eastern side of Francis Crick Avenue south of the Francis Crick Avenue/Guided Busway junction serving bus route U Universal.
- 9.1.181 The existing CGB runs along the northern boundary of the proposed station and includes services to Cambridge city centre and Trumpington park and ride. The closest CGB bus stops in each direction are located outside Royal Papworth Hospital approximately 250m east of the proposed station. The CGB bus stops have shelters and timetables and serve Guided Busway routes A and D.
- 9.1.182 From the proposed Station both bus stops are accessible via the traffic signal controlled pedestrian crossings at the Francis Crick Avenue/Guided Busway junction and footways along Francis Crick Avenue and CGB.
- 9.1.183 A distance of 840m is normally considered to be covered on foot in approximately 10 minutes. Therefore, the walking time to the CGB bus stops is about 3 minutes.
- 9.1.184 The east forecourt of the station has limited available space and needs to accommodate disabled parking, staff parking, taxi bay and cycle parking. No space is available for bus stops in this area.
- 9.1.185 The future CSET scheme will route along Francis Crick Avenue with bus stops planned for Francis Crick Avenue just south of the proposed station access.
- 9.1.186 It is beyond the scope of the project to make major changes to the purpose of public transport assets owned and operated by external parties such as Cambridgeshire Guided Busway. Network Rail is working with campus stakeholders to improve transport integration where feasible within the project's remit.
- 9.1.187 **Cambridge Biomedical Campus Transport Needs Review Report.** *A number of technical observations have been made about the passenger demand forecasting in the Cambridge Biomedical Campus Transport Needs Review Report.*
- 9.1.188 Cambridgeshire County Council on behalf of the Greater Cambridge Partnership commissioned the Cambridge Biomedical Campus Transport Needs Review Report. As these comments are on a document that was not produced by Network Rail, we do not consider it appropriate to comment upon that document in detail. However, it would appear that the findings of the document were accepted by the parties who had commissioned it.

10 Responses to Statements of Cases

10.1.1 Certain parties did not raise issues relevant to my area of expertise in their original objections but have subsequently done so in their statements of case. I address these additional issues raised below. In addition, some objectors who did raise issues relevant to my expertise previously have now raised additional issues, and these are also addressed below.

E-04 – Medical Research Council (OBJ 09)

10.1.2 The Medical Research Council's Statement of Case raises the following issues relevant to my area of expertise:

- Impact of the Haul Road and on-going Rights of Access for Maintenance
- Goods delivery and service access for the LMB; and
- Required Mitigation.

10.1.3 I deal with each of these issues in turn; first summarising the issue raised, before setting out my response.

10.1.4 ***Impact of the Haul Road and on-going Rights of Access for Maintenance.*** *The access via the proposed haul road during the construction period and via the MRC car park for the on-going future maintenance of the railway will have an impact on any deliveries to the LMB, maintenance works carried out on site, and collections.*

10.1.5 Access for on-going maintenance of the railway will be on a very occasional basis, and NR will inform MRC when this is required. The haul road through the MRC car park is no longer required. Access for goods delivery and service will be maintained for LMB. Network Rail have confirmed that they will not be blocking off existing use of the MRC car park service road and that they will work with MRC to schedule works to avoid major deliveries and to minimise the amount of time using the access to service the construction works.

10.1.6 *Network Rail have provided verbal assurances that they would not require exclusive use of the access route during their temporary use of it however nothing has been provided in writing nor has a draft traffic management plan been issued for MRC to review and input into.*

10.1.7 Access for goods delivery and service will be maintained for LMB. Network Rail is working with MRC on drafting Head of Terms and an agreement that reflect this assurance.

10.1.8 *The MRC has concerns about the safety of staff accessing and egressing through staff carpark during the construction of the haul road and the impact of the loss of car parking spaces. The MRC do not consider it reasonable for its staff to have to share an access to LMB's car park with construction traffic and future maintenance traffic, the nature of which (and therefore its associated impact) is unknown.*

10.1.9 The haul road is no longer required. Access for on-going maintenance of the railway will be on a very occasional basis, and NR will inform MRC when this is required.

- 10.1.10 Network Rail have confirmed that they will not be blocking off existing use of the MRC car park service road and that they will work with MRC to schedule works to avoid major deliveries and to minimise the amount of time using the access to service the construction works.
- 10.1.11 *The southern edge of the LMB site has recently been developed to include staff seating areas for their enjoyment in the biodiverse paddock. The location of the haulage road will significantly impact on this area and therefore staff amenities and welfare.*
- 10.1.12 The haul road is no longer required. The construction of 4No. OLE gantry foundations would require access through the MRC car park. It is estimated that this will take approx. 7 to 9 weeks to complete. The impact on the staff amenity area therefore would be limited mainly to this time. Network Rail is working on preparing an interface protocol together with MRC on how construction activities around the day to day operations of the MRC would be managed, to ensure the impact is minimised whenever possible.
- 10.1.13 **Goods delivery and service access for the LMB.** *There are multiple deliveries each week of, for example, liquid nitrogen, scientific equipment and hazardous materials. Similarly, there are multiple collections of hazardous waste for disposal. It is vitally important therefore that the delivery vehicles enjoy uninterrupted access to the LMB at all times. The MRC understand that land that is being acquired by NR adjoins this delivery route and the route itself may become heavily disrupted during the construction period.*
- 10.1.14 Access for goods delivery and service will be maintained for LMB. Network Rail is working on preparing an interface protocol together with MRC on how construction activities around the day to day operations of the MRC would be managed, to ensure the impact is minimised whenever possible.
- 10.1.15 **Required Mitigation.** *Owing to the need for satisfactory long-term access arrangements to be in place, a detailed traffic management plan will need to be agreed between Network Rail and MRC for the period of construction and when any future maintenance is carried out.*
- 10.1.16 As above, Network Rail is working on preparing an interface protocol together with MRC on how construction activities around the day to day operations of the MRC would be managed. Network Rail is working with MRC on drafting Head of Terms and an agreement to secure all of these matters.

E-05 – Cambridge Medipark Limited and CBC Estate Management Limited (OBJ 10 & 11)

- 10.1.17 The Cambridge Medipark Limited and CBC Estate Management Limited's Statement of Case raises the following issues relevant to my area of expertise:
- Impact on other infrastructure at the Biomedical Campus;
 - Limited car drop off/pick up area;
 - Impacts on CBC highway network during construction;
 - Level of cycle parking; and
 - Cumulative impacts with the Greater Cambridge Partnership proposals for CSET.
- 10.1.18 In addition, Cambridge Medipark Limited and CBC Estate Management Limited have commissioned AECOM to review the Transport Assessment and Transport Chapter of the Environmental Statement.

10.1.19 I deal with each of these issues in turn; first summarising the issue raised, before setting out my response. The response to Transport Assessment and Environmental Statement technical observations is provided in Appendix H.

10.1.20 ***Impact on other infrastructure at the Biomedical Campus.*** *The objection states that Network Rail's proposals do not adequately mitigate the impact of the Scheme on other infrastructure at the Biomedical Campus. Most passengers arriving at the station are likely to be either working or visiting one of the businesses, medical facilities or educational buildings and will either walk, cycle or get a taxi to their destination resulting in additional demands on the Campus infrastructure.*

10.1.21 The station will generate an increased level of pedestrian and cycle movements across the Francis Crick Avenue/Guided Busway junction as many key destinations in CBC including the hospitals are to the east of Francis Crick Avenue.

10.1.22 The existing Francis Crick Avenue/ Guided Busway junction is a four-arm signal-controlled junction with pedestrian and cycle crossings on all arms. Movements on the Guided Busway arms are restricted to buses with no general traffic allowed. The Guided Busway has a shared pedestrian and cycle path on the south side to the west of the junction.

10.1.23 The traffic signal junction operates under a 4-stage method of control with separate phases for general traffic on Francis Crick Avenue, westbound and eastbound bus movements on the Guided Busway and all-round green phase for pedestrians and cycle crossings across three arms of the junction.

10.1.24 Pedestrian and cycle data was collected at the junction as part of the Addenbrooke's Travel Survey on Thursday 10 October 2019 between 06:00 and 21:00. During the AM peak hour pedestrian and cycle flows on the shared-use path along the south side of CGB on the section just west of Francis Crick Avenue were as follows:

- 84 westbound (away from the CBC) and 362 eastbound (towards the CBC) cycle movements, 446 in total; and
- 33 westbound (away from the CBC) and 108 eastbound (towards the CBC) pedestrian movements, 141 in total

10.1.25 While the data does not specify where those trips were to and from within the CBC, it is assumed that the majority of them were travelling across the southern arm of Francis Crick Avenue using the existing signalised pedestrian and cycle crossing.

10.1.26 In the assessment year of 2031 during the AM peak, with the station fully operational and CBC fully developed, a total of 346 pedestrians and 91 cyclists from the station are predicted to use pedestrian facilities and infrastructure on the eastern side of the station including footways along Francis Crick Avenue, CGB and through the CBC, NCN 11 and the signalised crossings at the Francis Crick Avenue/CGB junction.

10.1.27 To facilitate access to the station, improvements are proposed to the existing pedestrian and cycling infrastructure to accommodate and better cater for additional pedestrian and cycle movements between the station and trip attractors and generators within the CBC. These measures include;

- Widening of the existing crossing on the southern arm of Francis Crick Avenue/Guided Busway junction to accommodate additional pedestrian and cycle movements between the station and trip attractors and generators within the CBC;

- Widening of the existing crossing on the eastern arm of Francis Crick Avenue/CGB junction to accommodate additional pedestrian and cycle movements;
- Cycle and pedestrian access improvement from north of the station by widening the shared use path on the western side of Francis Crick Avenue and widening the cycle and pedestrian crossing across the western arm of Francis Crick Avenue/CGB junction to accommodate additional pedestrian and cycle movements;
- Traffic signal timings at the Francis Crick Avenue/Guided Busway junction will be revised to increase crossing times for pedestrians and cyclists at the junction.

10.1.28 In summary, the improvements proposed to the existing pedestrian and cycle infrastructure do mitigate the impacts of the scheme on other infrastructure in the Campus.

10.1.29 **Limited car drop off/pick up area.** *The Scheme proposes a very small number of drop off car parking spaces which appears to be insufficient for the volume of likely travellers to and from the station.*

10.1.30 As shown in Table 8.1 it is predicted that 2% of trips to/from the station will involve pick up and drop off. This equates to 146 trips per day. During the AM peak hour 14 cars will use the drop off bay during the hour. Most drop offs will have less than a minute dwell time whilst pick-ups are likely to be limited to 10 minutes dwell time. Therefore 3 bays will provide sufficient capacity for this demand. Similar demand is estimated during the PM peak.

10.1.31 **Impacts on CBC highway network during construction.** *Temporary road closures and diversions during construction works are also likely to have a serious impact and there are particular safety concerns in regard to the impact on the Francis Crick Avenue junction with the Guided Busway during the construction of the new station access road. There is wider concern that the limited area for construction will adversely impact the road network.*

10.1.32 This issue was previously raised by Cambridge Medipark Limited in their letter of objection and has already been addressed in Section 9 above.

10.1.33 **Level of cycle parking.** *The Scheme is also likely to result in many additional cyclists on the Campus and we note that the proposal for 1,000 cycle parking spaces, whilst necessary, may not be sufficient, based on local experience of demand for cycle parking on the Biomedical Campus.*

10.1.34 This issue was previously raised by Cambridge Medipark Limited in their letter of objection and has already been addressed in Section 9 above.

10.1.35 **Cumulative impacts with the Greater Cambridge Partnership proposals for CSET.** *NR and GCP have not explained how the two schemes will interact and provided a cumulative assessment of the schemes.*

10.1.36 This issue was previously raised by Cambridge Medipark Limited in their letter of objection and has already been addressed in Section 9 above.

10.1.37 **Technical deficiencies with the Promoter's assessment of transport impacts and with the proposed mitigation strategy.** *Appendix 3 of the Statement of Case includes a high-level review of the Transport Assessment (TA) and Transport chapter of the Environment Statement (ES) undertaken by AECOM on behalf of Cambridge Medipark Limited and CBC Estate Management Limited.*

10.1.38 The methodology for the traffic and transport assessments in the ES is summarised in section 6 and complies with the following relevant guidance:

- The Design Manual for Roads and Bridges (DMRB) LA 104 Environmental Assessment and Monitoring (2020) (Ref 17.1); and
- Guidelines for the Environmental Assessment of Road Traffic ((Institute of Environmental Management and Assessment (IEMA), 1993) ('IEMA Guidelines') (Ref 17.2).

10.1.39 The scope of the EA and its methodology were agreed with the Transport Infrastructure Planning Unit of the DfT

10.1.40 The TA (**NR-16**, Appendix 17.2) adopts the national guidelines and approaches where possible, taking account of the specific nature of the development. The TA broadly follows the structure and content identified in Transport Assessment Requirements (2019), produced by CCoC.

10.1.41 Discussions were held with CCoC on various elements of the TA scope which were subsequently agreed to finalise the scope of the assessment. Further meetings took place with CCoC during preparation of the TA to discuss embedded mitigation and improvement measures.

10.1.42 A more detailed response to the technical points raised is provided in Appendix H.

E-08 – The Pemberton Trustees (OBJ 15)

10.1.43 The issues raised in Pemberton Trustee's Statement of Case have been addressed in my response to their objection (**OBJ 15**) in Section 9, OBJ 15 – The Pemberton Trustees section of this proof.

E-10 – South Cambridgeshire District Council (SCDC) (OBJ 24)

10.1.44 The SCDC's Statement of Case raises the following issues relevant to my area of expertise:

- Connectivity; and
- Impact on cycle network.

10.1.45 I deal with each of these issues in turn; first summarising the issue raised, before setting out my response.

10.1.46 **Connectivity.** *Network Rail must work with the Cambridge University Hospitals NHS Foundation Trust and other stakeholders on the Cambridge Biomedical Campus to review the existing connectivity between the station and key destinations, including pedestrian and cycle routes, wayfinding, accessibility and bus connections. Network Rail must engage in the review of the wider masterplan for the Addenbrooke's Hospital campus currently being undertaken by the Cambridge University Hospitals NHS Foundation Trust to address connectivity issues.*

10.1.47 Engagement with key stakeholders on connectivity has been undertaken both prior and subsequent to the making of the CSIE Order application and is summarised in Section 5. This has included regular meetings with CUH on the masterplan with future development in the campus and connectivity to these sites.

10.1.48 **Impact on cycle network.** *The works to the railway line at Shepreth Branch Junction must minimise the impact on the NCN Route 11 and be considered carefully alongside the timing of works to other routes within the area to minimise disruption to users. Network Rail must consult with the Council, local cycling groups, Great Shelford Parish Council and other user groups.*

10.1.49 The works to Shepreth Branch Junction will primarily take place from the west side of the railway in order to minimise impacts on the NCN 11 route. Network Rail confirmed that NCN Route 11 in the vicinity of Shepreth Branch Junction will not be closed until details of any temporary closure including times of the closure and management of pedestrians and cyclists to facilitate access during the closure have been submitted and approved in writing by the local planning authority. The temporary closure will be managed in accordance with the approved scheme.

10.1.50 NR are negotiating a Protocol Agreement with GCP to manage the interfaces between the two projects that confirm that both schemes can be delivered concurrently to minimise construction impacts on the local area. The agreement also demonstrates how both schemes will interact during operational phases and maximise intended benefits of each scheme by complementing each other.

10.1.51 NR will engage with SCDC, local cycling groups, Great Shelford Parish Council and other user groups to discuss any temporary impacts to NCN11 during construction.

E-11 - Cambridge City Council (CCiC) (OBJ 23)

10.1.52 The CCiC's Statement of Case raises the following issues relevant to my area of expertise:

- Pedestrian and Cycle Route through Hobson's Park;
- Temporary NCN Route 11 diversion;
- Car parking; and
- Pedestrian link across the Cambridge Guided Busway

10.1.53 I deal with each of these issues in turn; first summarising the issue raised, before setting out my response.

10.1.54 **Pedestrian and Cycle Route through Hobson's Park.** *In pre-application discussions, it was considered best to deliver a segregated pedestrian and cycle route in response to the likely pedestrian and cycles flows and to follow advice within LTN 1/20 Cycle Infrastructure Design. Notation on the Parameter Plan 1: Access and Movement refers to 'Proposed New Pedestrian and Cycling Access' but it is recommended this is amended to read 'Proposed segregated new pedestrian and cycle access'.*

10.1.55 The revised proposal for a pedestrian and cycle link though Hobson's Park includes a 5 m wide segregated pedestrian and cycle route. Notation will be amended.

10.1.56 **Temporary NCN Route 11 diversion.** *The proposed temporary diversion of the NCN 11 route during the construction works should be of minimum duration and with suitable diversions in place, which should be consulted on with local cycling groups. The timing of the construction works affecting cycle routes should carefully consider the Greater Cambridge Partnership's proposed Sawston Greenways route on the existing Genome Path between the Cambridge Biomedical Campus and Great Shelford to minimise disruption to users.*

- 10.1.57 The timing of the construction works affecting NCN Route 11 and other cycle routes would be carefully planned to minimise disruption to users. The temporary diversion route has been discussed with CCoC and local cycling groups.
- 10.1.58 Sawston Greenway will be constructed as part of the CSET scheme. NR are negotiating a Protocol Agreement with GCP to manage the interfaces between the two projects that confirm that both schemes can be delivered concurrently to minimise construction impacts on the local area. The agreement also demonstrates how both schemes will interact during operational phases and maximise intended benefits of each scheme by complementing each other.
- 10.1.59 **Level of car parking.** *The maximum number of car parking spaces for each user group must be specified in the Design Principles and details of cycle parking facilities must be secured through the recommended revised wording, in accordance with Local Plan policy 82.*
- 10.1.60 Car parking is restricted to five parking bays for Blue Badge holders, two parking bays for station staff and one parking bay for maintenance vehicles. This will be secured by a planning condition, see the Proof of Evidence of John Pearson (**NRE 9.2**).
- 10.1.61 **Pedestrian link across the Cambridge Guided Busway.** *The pedestrian link across the Cambridge Guided Busway between Hobson's Park and the Active Recreation Area must be complete before the existing connection beneath the Cambridge Guided Busway is lost. This must be secured through the Order.*
- 10.1.62 The pedestrian link across the Cambridge Guided Busway between Hobson's Park and the Active Recreation Area will be completed before the existing connection beneath the Cambridge Guided Busway is closed for construction. This will be secured by a planning condition, see the Proof of Evidence of John Pearson (**NRE 9.2**).

11 Conclusions

- 11.1.1 There are multiple transport benefits arising from CSIE project, all of which seek to deliver upon existing national and local planning, transport and economic policies and allow the region to continue to prosper whilst encouraging modal shift and reducing road congestion.
- 11.1.2 The CSIE Project will support sustainable transport strategies, encourage a modal shift in sustainable transport and reduce traffic congestion in the local area. The enhancement of sustainable transport access to housing, services and employment will support the growth of the Cambridge southern fringe and CBC area.
- 11.1.3 The CSIE Project would deliver an inclusive "Access for All" railway station, which provides greater connectivity and access to hospitals, the CBC and local community infrastructure. Cambridge South Station will reduce the journey time for people wishing to access the CBC and other areas in the vicinity of Cambridge South Station and will make trips easier for patients visiting the hospitals, medical staff, researchers, other employees and residents accessing the station to travel elsewhere.
- 11.1.4 A new rail station at Cambridge South will reduce city centre reliance, as passengers travelling by rail will no longer need to interchange at Cambridge Station and then use another transport mode to access CBC.
- 11.1.5 The CSIE project will increase public transport connectivity between the CBC and international gateways, in recognition of its international significance.
- 11.1.6 The TA (**NR-16**, Appendix 17.2) and ES (**NR-16**) have considered the impact of the construction and operational phases of CSIE. Vehicle flows, highway safety, sustainable travel and impact from CSIE have all been considered.
- 11.1.7 The significance of effect of all construction traffic and HGVs on the highway network for all links is neutral or slight.
- 11.1.8 Appropriate design and mitigation measures to be applied though the construction phase of the proposed Development were developed to minimise impacts on other road users and sensitive receptors. A CTMP would be prepared by the appointed contractor to ensure that all traffic associated with the project's construction works operate in a safe and compliant manner at all times. The CTMP would provide a framework to manage all types of vehicle movement to and from the site and will provide details of the proposed traffic management of delivery vehicles and other traffic generated during the construction phase.
- 11.1.9 The CSIE Project would have overall positive effects during the operational phase due to the reduction in vehicular trips on the local road network, through encouraging more people to travel by rail to and from the CBC and surrounding area and through encouraging sustainable travel. For these reasons, it is anticipated that the proposed development would result in net beneficial effects on transport networks, transport networks users and sensitive receptors during the operational phase.
- 11.1.10 Although some parties have objected on specific transport issues, most support the aims of the CSIE project. For the reasons I have described above, it is concluded that there are no significant, severe or unacceptable impacts of the Project.

12Declarations

I hereby declare as follows:

- a. This proof of evidence includes all facts which I regard as being relevant to the opinion that I have expressed, and that the Inquiry's attention has be drawn to any matter which would affect the validity of that opinion.
- b. I believe the facts that I have stated in this proof of evidence are true and that the opinions expressed are correct.
- c. I understand my duty to the Inquiry to help it with matters within my expertise and I have complied with that duty.

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