

Cambridge South Infrastructure Enhancements Project

Stakeholder Information Pack

October 2020

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APPENDICES

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GLOSSARY

| Term | Definition |
|--|---|
| Ballast | The material used to support and secure track, usually made up of granite stones. Also provides a drainage function. |
| Blockade | A full closure of a railway line for the purposes of maintenance, improvement or construction, typically longer than a single shift. |
| Clearance | This relates to Overhead Line Equipment or Structure clearance and is a physical clear envelope to allow trains and their systems to pass through. |
| Construction compound | An area used by the contractors during construction for civil engineering works, railway installation works and the storage of materials. |
| Construction Environmental Management Plan | The document outlining the mechanism through which construction phase mitigation will be implemented. |
| Construction phase | The period when construction of the Project takes place. |
| Culvert | A structure that allows water to flow beneath a road, railway or similar obstruction from one side to the other. |
| Down lines | The railway lines heading away from London (northbound). |
| East West Rail | A programme of works which aims to establish a strategic railway connecting East Anglia with Oxford. |
| East West Rail Central Section | Part of East West Rail which aims to link Bedford and Cambridge. |
| Environmental Impact Assessment | The process by which the anticipated impacts on the environment of a proposed development or project are measured. |
| Environmental Statement | The report setting out the process and findings of an Environmental Impact Assessment. |
| Formation | The formation is the prepared ground on which the track (ballast, sleepers and rails) is laid. |
| GSM-R | An international wireless communications standard for railway communication and applications. |
| Haul road | A temporary road built to facilitate the movement of equipment and materials during Project construction. |
| Level crossings | A place where landowners and/or the public have a right to cross the railway. |
| Maintenance compound | A compound area used to support on-going maintenance of the assets. |
| Mitigation measures | Mitigation represents any process or action designed to avoid, reduce or remedy significant adverse environmental effects likely to be caused by a development project. |
| Operational phase | The period when the Project is in operation. |
| Overbridge | A bridge crossing over the railway. |
| Permanent vehicle track | Track to a compound off a road or alongside the railway which is permanent. |
| Permanent land take | The land that is acquired for an indefinite period of time. |

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| Term | Definition |
|------------------------------|---|
| Permitted development rights | Elements for work qualifying under Part 8 and Part 18, Class A to Schedule 2 of the Town and Country Planning (General Permitted Development) Order 2015. |
| Project | The Project is the proposed enhancement and infrastructure works between the southern end of Cambridge Station and Shepreth Branch Junction. |
| Rail | Linear steel support for train wheels. Two rails secured to sleepers make up the track. |
| Railway | General term referring to the rail transport system as a whole and the corridor in which it sits. |
| Scheme | The Scheme is the proposed enhancement and infrastructure works for the station and Shepreth Branch Junction for which authorisation is sought under the Transport and Works Act. |
| Scoping Opinion | Process to identify any sources of environmental information which may be of relevance to the EIA and the topics on which the EIA should focus. |
| Up lines | The railway lines heading towards London (southbound). |

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ACRONYMS AND ABBREVIATIONS

| Acronym | Description |
|---------|---|
| CBC | Cambridge Biomedical Campus |
| CCiC | Cambridge City Council |
| CCoC | Cambridgeshire County Council |
| CSIE | Cambridge South Infrastructure Enhancements |
| ECML | East Coast Main Line |
| EWR | East West Rail Central Section |
| NCN | National Cycle Network |
| NR | Network Rail |
| PRoW | Public Right of Way |
| SCDC | South Cambridgeshire District Council |
| TOC | Train Operating Company |
| TWA | Transport and Works Act |
| TWAO | Transport and Works Act Order |
| WAML | West Anglia Main Line |

1. INTRODUCTION

1.1 The Project

- 1.1.1 Network Rail is proposing to build a station south of Cambridge to improve access to the rail network for staff, patients and visitors to hospital and work facilities on the Cambridge Biomedical Campus and to provide people travelling to/from South Cambridgeshire and beyond greater choice of where they can travel to/from.
- 1.1.2 To support the operation of the station enhancements to the local adjacent infrastructure have been identified which are necessary to maintain service reliability.
- 1.1.3 The overall works are collectively known as the Cambridge South Infrastructure Enhancements project ('the Project').
- 1.1.4 During the first round of consultation, between 20 January and 2 March 2020 we asked for views on three locations for a new station between Addenbrooke's Bridge and Nine Wells Bridge, namely the northern, central and southern options. The northern option was selected based on this feedback and further engagement with stakeholders.
- 1.1.5 The station will be adjacent to Addenbrooke's Bridge which carries the Guided Busway over the railway. Step-free access via a footbridge and lifts to platforms will be provided.
- 1.1.6 With the preferred location of the station selected, we are now seeking your views on the current proposals, the access arrangements and the cycle facilities proposed at the station. We want to make sure that the designs we have developed are suitable for all users and that as far as possible they have addressed feedback raised from the community during previous consultation and engagement activities.
- 1.1.7 This second formal round of consultation for statutory consultees and the public will commence on 19 October and close on 29 November 2020.
- 1.1.8 The Project team will review feedback from all consultees and the feedback will inform the Project's development.
- 1.1.9 We will prepare the documents ready for an application for a Transport and Works Act Order (TWAo) for powers to build, operate and maintain a new station, track and railway infrastructure and associated apparatus to support a funder target of the station opening in 2025.

1.2 Purpose of this pack

- 1.2.1 With this pack we are informing and consulting with you about our proposals to comply with the statutory requirements relating to the application for a TWAo. The pack presents the proposals for the operational elements of the Scheme known at this stage of design, the emerging construction proposals and our work to assess the likely significant impacts of the proposals on people, the natural and built environment.

Structure of this pack

- 1.2.2 The structure of this Pack is as follows:

- Section 1. Introduces the Project and purpose of this round of consultation.
- Section 2. Describes the need and benefits of the Project.
- Section 3. Sets out the consenting process Network Rail will follow for the Project and requirements for land.
- Section 4. Summarises the location selection process and the feedback from the first round of consultation.
- Section 5. Details each element of the proposed operational Project.
- Section 6. Describes the emerging construction proposals.
- Section 7. Provides information on the Environmental Impact Assessment process.
- Section 8. Outlines our approach to consultation and how to respond.
- Section 9. Sets out what happens after this round of consultation ends on 29 November 2020.
- Appendices. Presents drawings associated with the Project.

2. NEED AND BENEFITS

2.1 Need for the Project

- 2.1.1 Cambridge is one of the UK's most successful and fastest growing cities. The Cambridge Local Plan 2018¹ identifies the Cambridge Biomedical Campus (CBC), an internationally significant health and life sciences cluster, and the Cambridge Southern Fringe as two of eight areas of major change in Cambridge.
- 2.1.2 Cambridgeshire Local Transport Plan 2011-2031: Long Term Transport Strategy² identifies the need for a new station at Addenbrooke's to serve the CBC. The Strategy highlights the growth in rail patronage in recent years and forecasts demand for accessibility to the Biomedical Campus. The plan stipulates that the station is "necessary to provide new capacity for growth and to address existing problems on the transport network".
- 2.1.3 The CBC is expected to house the largest concentration of biomedical expertise in Europe; planned growth on the CBC up to 2026 will lead to an employment level of 26,000 jobs. In 2019, the Royal Papworth Hospital relocated to the CBC and AstraZeneca's new strategic research and development centre will become operational in 2020.
- 2.1.4 It is envisaged that by 2031, new housing developments across the Cambridge Southern Fringe comprising an estimated 4,000 new homes will have been constructed.
- 2.1.5 This urban growth is needed to meet the high demand for housing and support the local economy however future development is also expected to place significant pressures on the railway system which is already running at full capacity.

2.2 Benefits of the Project

- 2.2.1 The provision of a new station will:
- connect Addenbrooke's and Royal Papworth hospitals and the CBC to potential destinations such as central London, London Stansted Airport, Ely, Birmingham and Europe via Eurostar from London St Pancras;
 - improve connectivity to the rail network and give people travelling to/from South Cambridgeshire and beyond greater choice of where they can travel to/from;
 - provide access to a growing area of high-quality employment; and
 - help relieve traffic congestion in the local area by supporting the development of environmentally sustainable transport in Cambridge.
- 2.2.2 Cambridge is located at a confluence of several strategically significant rail routes. Running south from Cambridge Station, services connect the city to London by the West Anglia Main Line (WAML) to London Liverpool Street, and the East Coast Main Line (ECML) to London King's Cross via the Shepreth Branch. Thameslink services further

¹ <https://www.cambridge.gov.uk/media/6890/local-plan-2018.pdf>

² https://www.cambridgeshire.gov.uk/asset-library/imported-assets/R-TP-The_Long_Term_Transport_Strategy.pdf

connect Cambridge across Central London to Maidstone East, and to Brighton via Gatwick Airport. To the north of Cambridge Station, services continue to the Midlands, Norwich, and Ipswich via the Cross Country corridor.

- 2.2.3 The WAML runs between London Liverpool Street and King's Lynn and is formed of a two-track railway through to Ely where the line becomes a mixture of single and double track sections through to King's Lynn. The route carries busy commuter and leisure traffic from Stansted Airport and Cambridge into London Liverpool Street, as well as serving high tech industries within Greater Cambridge and through to Peterborough.
- 2.2.4 The Cross Country corridor (via Ely) supports a nationally important freight route between the Port of Felixstowe and other regions such as the Midlands, Yorkshire and Scotland alongside busy inter-regional passenger services. The line includes the Felixstowe to Nuneaton route in terms of freight and Ipswich/Norwich to Cambridge/Peterborough via Ely passenger services.
- 2.2.5 The ECML contains a mixture of Long Distance High Speed (LDHS) services, regional services and freight. For Cambridgeshire, it is an important route for commuter and leisure traffic for services from King's Lynn through to Cambridge and onwards to London King's Cross.
- 2.2.6 The Project makes use of the existing WAML and the Cross Country corridor. The new station will be served by train services to/from London Kings Cross via the Shepreth Branch and the ECML. To accommodate expected growth in demand for travel to and from Cambridge, there are several aspirations to provide interventions in the wider Cambridgeshire area – such as the delivery of East West Rail (EWR) Central Section (Bedford to Cambridge).
- 2.2.7 The Project will provide infrastructure to allow for a variety of stopping patterns with the final stopping pattern being agreed at a later stage. It is anticipated that the new station would be served initially by train services already running on the route. In the future, EWR services from Bedford to Cambridge could serve the new station.

3. CONSENTING AND LAND REQUIREMENTS

3.1 Consenting considerations

3.1.1 Network Rail will seek powers under the Transport and Works Act (TWA) to acquire land and rights over land compulsorily as well as powers to construct, operate and maintain the station, track and associated railway infrastructure.

3.1.2 These powers will include, but are not limited to:

- compulsory purchase of land and property which is required for the Project;
- the right to use land temporarily and any permanent rights for the on-going management and maintenance of the Project;
- provision for temporary alternative routes and permanent diversions;
- powers for making byelaws and traffic regulation orders;
- powers to stop up or alter roads and level crossings permanently and temporarily;
- powers to divert any utilities; and
- amendments to other legislation.

3.1.3 As well as applying to the Secretary of State for a TWAO, Network Rail will also apply to the Secretary of State for Transport for a direction for deemed planning permission for the Project. A brief guide about the TWAO procedures can be obtained via the below link:

<https://www.gov.uk/government/publications/transport-and-works-act-orders-a-brief-guide-2006/transport-and-works-act-orders-a-brief-guide>

3.1.4 Network Rail will seek planning consent through the request for planning direction as part of the TWAO for the Cambridge South Station works and works at Shepreth Branch Junction (the Scheme).

3.1.5 Works on the southern approach to Cambridge Station (see Section 5) are within the existing railway boundary and constitute permitted development under Part 18 of the General Permitted Development Order 2015 (i.e. not requiring prior approval). These works will not be included within the TWAO.

3.2 Land requirements

3.2.1 In order to construct the Scheme, the current operational railway boundaries will be expanded by the proposed station location on either side of the railway and to the west at Shepreth Branch Junction. Some land and rights will be required permanently for the construction and operation of the railway and some will be required temporarily for construction purposes.

3.2.2 Network Rail has undertaken a land identification exercise that has identified those with an interest in the land within the footprint of the Project in respect of which compulsory acquisition powers will be sought through the TWAO application if private treaty arrangements cannot be made with the affected landowners in advance of the TWAO application being submitted. Land identification was undertaken similarly for the first

- round of consultation and some changes have been made to the footprint of the Project and therefore the land area has changed as a result of this.
- 3.2.3 Where compulsory purchase powers are exercised affected parties will be eligible for compensation in accordance with the Compensation Code.
- 3.2.4 Network Rail will seek to use compulsory purchase powers only after all reasonable and practicable means to negotiate for the voluntary acquisition of land have been exhausted.
- 3.2.5 Network Rail recognises the importance of Hobson's Park to the local and wider community. Land is proposed to be permanently acquired for the station, track, associated infrastructure and new paths on the west on Hobson's Park. A key design objective to date has been to reduce this as far as possible and Network Rail is continuing to explore how the impact of this can be mitigated with stakeholders.

4. STATION LOCATION SELECTION

4.1 Previous consultation

- 4.1.1 The main themes emerging from the first round of consultation was advocacy for the station as a whole tempered with concerns around incursion onto Hobson's Park for construction and operation of the station, views on the station design, access and amenities. Interest was also shown in integrating with bus services and other transport schemes being proposed on the Campus. The top 12 themes are detailed in Table 4.1.

Table 4.1 Top 12 themes from the first round of consultation

| Theme | Description |
|---------------------------------------|---|
| Role of the station | Opinions on who would use the station |
| Opinion | Comments on levels of support, benefits or issues about the project |
| Station location and potential access | Opinion on the location options, reasons for the preferred choice and potential access methods |
| Station design | Views on elements such as the station building, lifts, toilets, cycle spaces and parking and public art |
| Transport | Matters such as bus, cycle and pedestrian connections, road access, parking on-street and onward travel onto the CBC |
| Engineering | Opinion on platform and track configurations, structures and utilities |
| Environment | Views on impacts on environmental designations, noise, vibration, flora and fauna, hydrology, biodiversity |
| Land requirements | Challenge on permanent and temporary land use requirements |
| People | Consider accessibility needs, health, recreational uses |
| Construction | Consider impacts during construction on local residents, CBC users, protect environment, location of construction compounds |
| Other projects | Consider interface with other proposed transport schemes and level of integration |
| Consultation | Question the level of information provided |

4.2 Selecting the location

- 4.2.1 Since the first round of consultation, the project team has continued to engage with wider stakeholders and elicit further feedback on the station location options. All the feedback has informed the selection of a location closest to Addenbrooke's Bridge as our preferred station site (known as the northern option in the first round of consultation).
- 4.2.2 Table 4.2 describes some of the key feedback from the first round of consultation and how we have shaped our design from it.

Table 4.2 Summary of how feedback has shaped station location selection

| You said ... | We have ... |
|--|--|
| Avoid as far as possible intrusion onto Hobson's Park | Re-sited compounds from the main Park as much as possible and moved the railway to the east away from the Park |
| Provide road access to the station from the east | Selected a location that provides road access from the east as opposed to the west |
| Protect the environment and natural areas | Started the process of scoping for the Environmental Impact Assessment (EIA). The EIA will identify the likely significant impacts and set out measures to mitigate such impacts and a Construction Environmental Management Plan will seek measures to monitor, control and manage construction impacts on the environment. |
| Provide high quality station facilities | Consulted with various interest groups to consider their accessibility needs. We will follow good design principles to provide as a minimum a safe, accessible and inclusive station environment. |
| Consider sufficient cycle parking capacity for station trips | Aimed to accommodate a mixture of Sheffield stands, two-tier racks and parking for larger sized cycles and inclusive cycles. |
| Retain the cycle path (NCN Route 11) under Nine Wells Bridge | Selected a location that allows our track to be configured to allow space to restore NCN Route 11 under Nine Wells Bridge once construction has ended |
| Consider good public transport links | Engaged with other public transport schemes and stakeholders to support an interchange with the station |
| Provide safe pedestrian and cycle access from both sides of the railway. | Analysed where people will be coming to and from the station in order to inform our design of connections to the wider area. |

4.2.3 The preferred location selected:

- was favoured by the majority of stakeholders;
- connects most directly into the heart of the established Campus;
- integrates best with the existing bus services and proposed Cambridge South East Transport (CSET) and the Sawston Greenway transport projects;
- has the greatest potential to be visually contained on the north east of Hobson's Park;
- has reduced land footprint on both sides of the railway; and
- allows the cycle path to be restored post-construction under Nine Wells Bridge.

4.3 Interfacing projects

4.3.1 In addition to concurrent railway projects, there are a number of adjacent projects on the CBC to the east of the station.

- Development by Astra Zeneca;
- Possible development of Plot 9 by the University of Cambridge;
- A new segregated public transport route linking the CBC to a new travel hub near the A11/A1307/A505, known as Cambridge South East Transport (CSET); and
- A non-motorised user route to enable cyclists, pedestrians and equestrians to travel sustainably from Sawston into Cambridge; known as the Sawston Greenway.

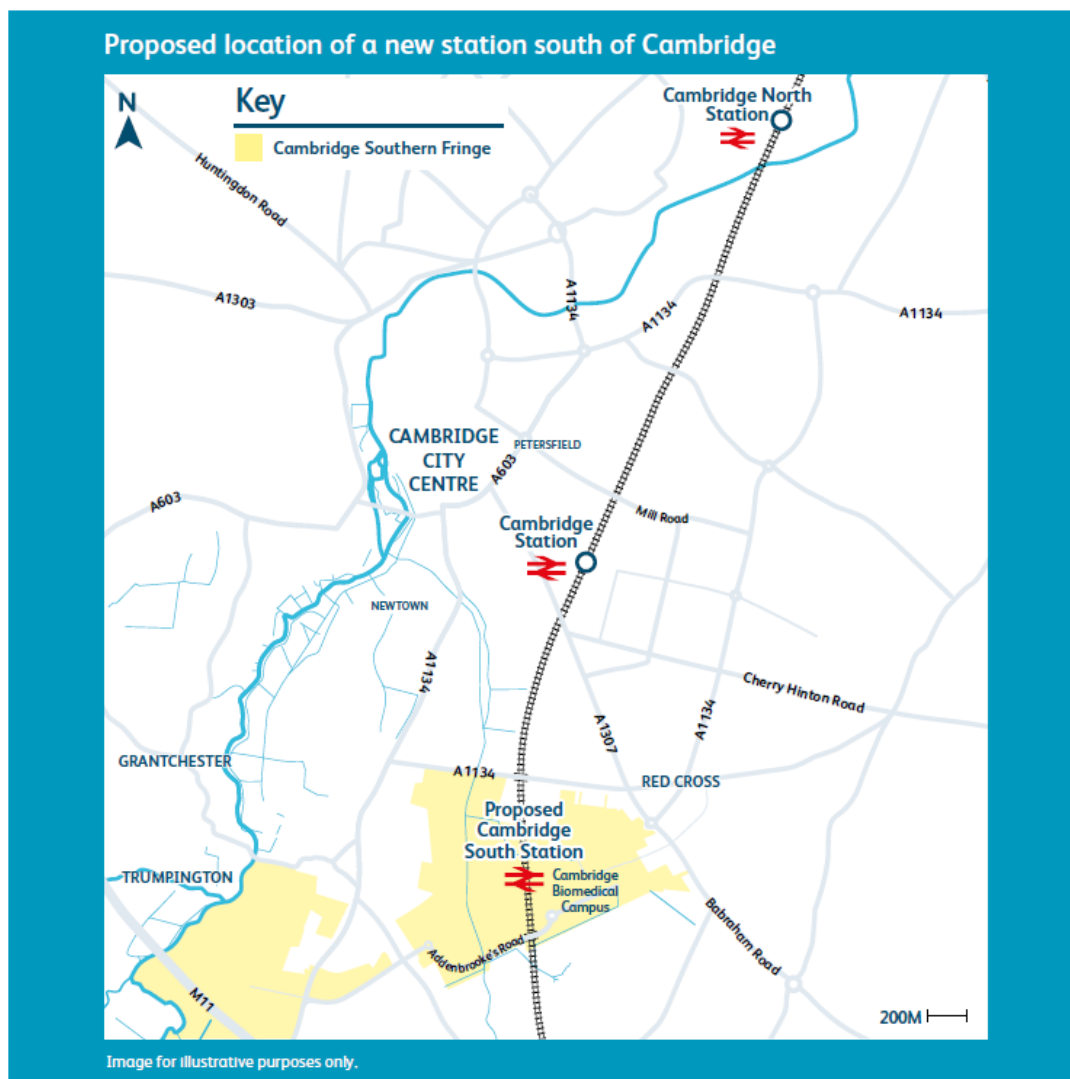
4.3.2 Whilst these projects are geographically interfacing schemes, it is also likely, subject to funding, that they will come forward at the same time as the new station. We will continue to engage with the relevant stakeholders as the projects develop.

5. THE PROJECT

5.1 Location

- 5.1.1 The new station is approximately two miles from Cambridge Station on the West Anglia Main Line (WAML) (see Figure 5.1).

Figure 5.1 Proposed location of the new station



- 5.1.2 It will be located adjacent to Addenbrooke's Bridge which carries the Guided Busway to the west of the CBC. Addenbrooke's and Royal Papworth hospitals and the planned growth area lie to the east and to the west lie the village of Trumpington, and Hobson's Park which is designated as Green Belt.
- 5.1.3 The Project crosses the local authority boundaries of Cambridge City Council and South Cambridgeshire District Council.

5.2 The proposals

5.2.1 The proposals include the provision of a new station on the WAML and supportive works in an area extending from a point approximately 250m south of Cambridge Station to a point approximately 350m south west of Shepreth Branch Junction. See Appendix A.

5.2.2 Table 5.1 sets out the key features of the Project.

Table 5.1 Key features of the Project

| Feature | Description |
|--|---|
| Station | Construction of a new station on the WAML with lifts to reach the four platforms, access for vehicles on the east, access for pedestrians and cyclists from both sides of the railway and space for a total of 1,000 cycles arranged on both sides of the railway. See Appendix B. |
| Track and platforms | <ul style="list-style-type: none"> • Remodelling the existing track layouts and installing two additional loops to accommodate four platforms; • Enhancements to Shepreth Branch Junction; and • Modification to the southern approach to Cambridge Station. |
| Plant | Provision of supporting infrastructure such as overhead line electrification equipment and a substation for the purpose of powering railway systems. |
| Signalling | Modification of existing signals, equipment and associated cabling to allow new layout to be installed. |
| Telecommunications | Provision of new telecommunications facilities, relocation of a GSM-R mast and associated cabling. |
| Electrical and Power | Provision of power cables to serve railside and station infrastructure. |
| Drainage and culverts | Reconstruction of Tibbets Culvert to minimise flood risk and provision of additional sustainable drainage for the railway infrastructure and modification of several existing culverts to receive new track layout. |
| Highways | Modifications to roads and crossings as required to facilitate access and to the southern embankment of the Guided Busway to accommodate cycle parking on the east of the railway. |
| Level crossings | Closure of two private level crossings and provision of alternative access. |
| Footbridge and Public Rights of Way | Potential modifications to stepped footbridge BGK/1543B and, if required, to Great Shelford FP1 footpath. |
| NCN Route 11 | Temporary diversion of NCN Route 11 and reinstatement post construction to its original alignment under Nine Wells Bridge. |
| Ancillary infrastructure | Additional elements to ensure the Project is built and can be operated in a safe, efficient manner, such as fencing, lighting, electrical connections, pedestrian and vehicle access. |
| Maintenance infrastructure | Provision of permanent maintenance compounds and rail access points for maintainer vehicles and/or pedestrians. |

| Feature | Description |
|----------------------|---|
| Environmental | Potential environmental mitigation measures which could include planting/habitat creation and noise mitigation. |

5.2.3 The following sections describe the features in greater detail.

The station facilities and access connections

5.2.4 Table 5.2 sets out the facilities proposed at the new station and Figure 5.2 shows the access arrangements to the station.

Table 5.2 Facilities at the new station

| Station facilities | |
|---|--|
| East side | West side |
| Two-storey station building | |
| Covered connecting footbridges at northern and southern end of platforms | |
| Four platforms with all-weather cover to the trains the length of each platform | |
| Two lifts on each platform for step-free access from the station building to the platforms | |
| Cycle parking on both sides of the railway for a total of 1,000 cycles | |
| Pedestrian and cycle access paths from both sides of the railway | |
| <ul style="list-style-type: none"> • Space for: <ul style="list-style-type: none"> ○ Ticket office ○ Ticket vending machines ○ Retail/catering unit ○ Changing Places facility ○ Accessible and standard toilets ○ Baby changing facility ○ Waiting area ○ Seating ○ Staff facilities ○ Station operational areas • Five parking bays for Blue Badge Holders; • Three bays for passenger drop-off/pick up; • Three bays for taxi drop-off/pick up; • Two parking bays for staff; and • Two parking bays for maintenance staff. | <ul style="list-style-type: none"> • Space for: <ul style="list-style-type: none"> ○ Ticket vending machines ○ Retail/catering unit ○ Accessible toilet ○ Waiting area ○ Seating ○ Staff facilities ○ Station operational areas |

Pedestrian and cycle access to the station

5.2.5 The site is located adjacent to Addenbrooke's Bridge with Accident & Emergency at Addenbrooke's Hospital up to 10 minutes' walk. Many of the routes approaching the site have shared footway/cycleway surfaces or on-street mandatory cycle lanes.

From the west

- 5.2.6 The existing uncontrolled crossing and western footway on the west from the Clay Farm development will be widened and link to a new primary access shared path for pedestrians and cyclists to the station. This path is proposed to be lit, have a permeable surface and a width of 4m. A connection to the Guided Busway footway will be provided from the new path.
- 5.2.7 An existing path in Hobson's Park will be raised and realigned to provide level access to the station forecourt.
- 5.2.8 Users of NCN Route 11 will access the station along the Guided Busway from the north west.

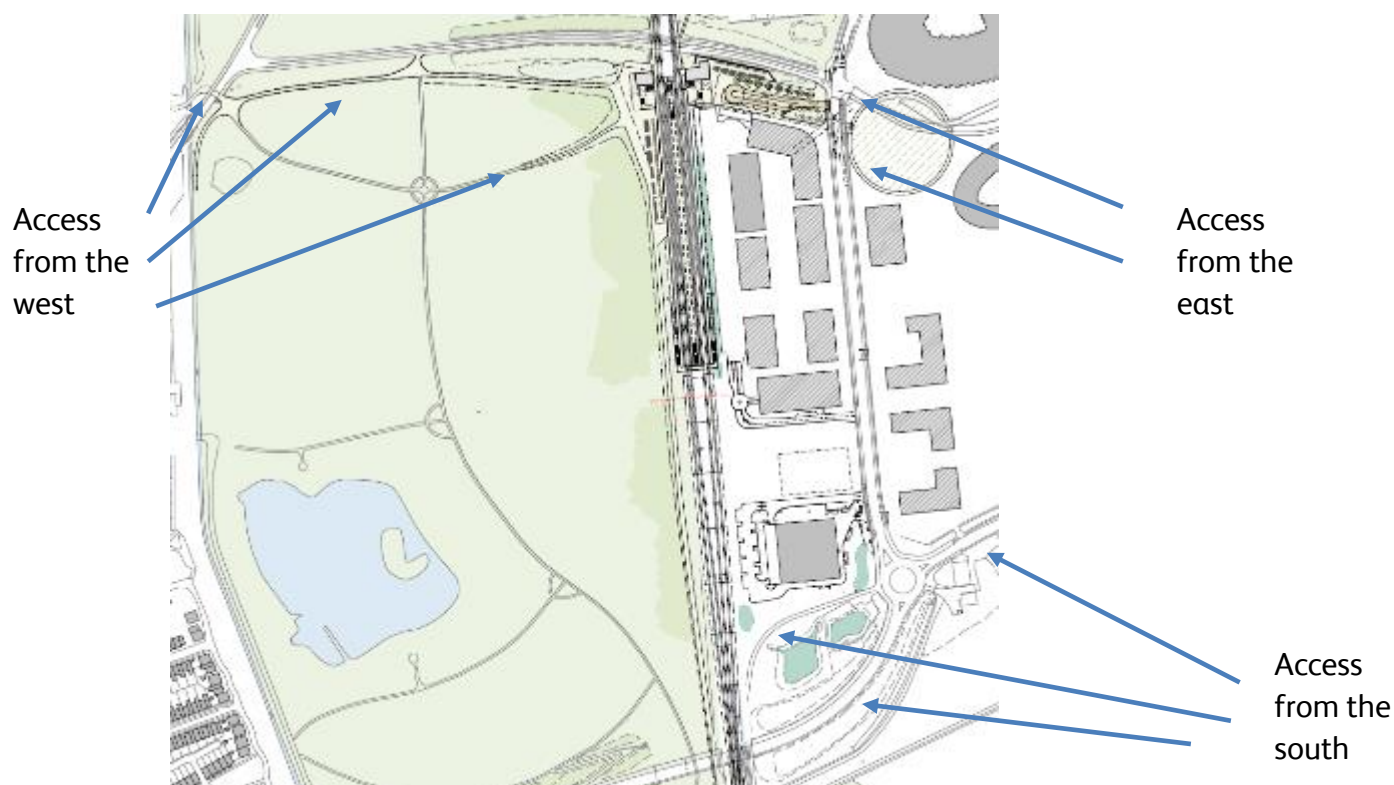
From the east

- 5.2.9 Vehicles will access the station from Francis Crick Avenue. Parking is restricted to Blue Badge holders and station staff and maintainers. Drop-off facilities are provided for private cars and taxis. All station infrastructure will be operated and maintained by a Train Operating Company (TOC) who would also manage the parking facility.
- 5.2.10 Access for pedestrians and cyclists will be provided within a new landscaped station forecourt. The station access road will have a raised crossing and tactile paving.
- 5.2.11 The traffic signal timings will be modified at the intersection with the Guided Busway and Francis Crick Avenue by the Green and the Gardens to incorporate the new station access. In addition, the controlled crossing facility on the southern arm of Francis Crick Avenue will be widened. The aim is to increase the crossing time for pedestrians and cyclists at this busy thoroughfare. See Appendix C.
- 5.2.12 Details of this are being worked through with the CBC estate management and the Local Highways Authority. The final arrangements will be coordinated with proposals by CSET.
- 5.2.13 Similar to drivers dropping off patients at hospitals, it is anticipated that vehicles coming into CBC to drop off passengers for the station would not be fined by the route enforcement system which is in place to prevent the CBC being used as a through route.

From the south

- 5.2.14 Users from the south on the east side of the railway will access the station via National Cycle Network (NCN) Route 11 south of Addenbrooke's Road. Part of this route will need to be temporarily diverted during construction but will be restored to its original alignment under Nine Wells Bridge after construction has ended. See Section 6 for details of the temporary diversion route for NCN Route 11.

Figure 5.2 Access arrangements to the station



Bus interchange

- 5.2.15 Several local bus services pass close to the site, e.g. opposite Royal Papworth Hospital, providing connections to the city centre and other areas within Cambridgeshire. These services vary in terms of route depending on day and time of service.
- 5.2.16 The CSET project proposes stops located to the south of the station entrance on Francis Crick Avenue. Consultation³ on the CSET route is currently underway.
- 5.2.17 We are engaging with other public transport schemes and stakeholders to support an interchange with the station.
- 5.2.18 The final location for rail replacement buses to serve the station will be developed in later design stages.

Design of the station buildings

- 5.2.19 Local communities are neighbours of our assets and our customers. It is critical that the design and development of our assets is undertaken in a way which enhances lives in a positive and socially responsible manner. Our assets are incorporated into the narrative of daily lives, so we need to understand how any changes will impact the character of local communities.

³ <https://www.greatercambridge.org.uk/CambridgeSET>

- 5.2.20 Figure 5.3 and Figure 5.4 show indicative visualisations of how the station could look from the east and the west. Appendix D and Appendix E show the same in larger format. The layouts shown within the station buildings are indicative and will be developed further in later design stages.

Figure 5.3 Indicative visualisation of the station on the east



Figure 5.4 Indicative visualisation of the station on the west



- 5.2.21 At this stage of design, a Diversity Impact Assessment (DIA) has been undertaken to inform design and support access for all users and those with protected characteristics, as set out in the Equality Act 2010.

- 5.2.22 The design of the proposed station will be further informed by the DIA to ensure that the overall station layout is developed to create an accessible and comfortable environment which meets the needs of stakeholders, the TOC, and sits comfortably within its context.

Cycle parking

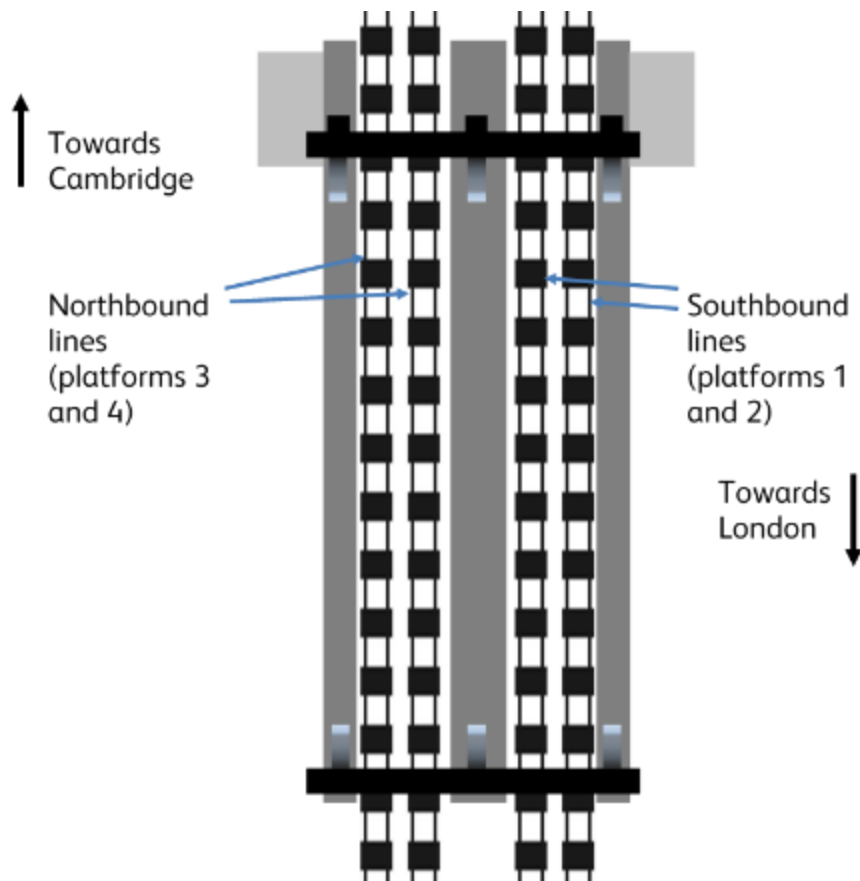
- 5.2.23 At this stage of design, space is provided for a total of 1,000 cycles, arranged on the east and west sides of the railway. The configuration of the cycling parking on both sides will be subject to further design stages however, we aim to accommodate a mixture of:

- stacked racks (60–70 %) with 2.5m - 3m access;
- standard Sheffield stands (20–30 %) with 1.5m between Sheffield stands; and
- space for non-standard cycles (up to 5 %).

The tracks and platforms

- 5.2.24 The platforms will be 250m long. The existing tracks of the WAML will be re-laid to allow a central island platform to be installed. A loop on each side of the re-laid tracks will be installed with a single platform on the outer sides.
- 5.2.25 Two platforms will serve northbound services (Down lines) and two will serve southbound services (Up lines); see Figure 5.5.

Figure 5.5 Indicative layout of the tracks and platforms



- 5.2.26 The platforms will offer all-weather cover for passengers accessing the trains and seating will be spread along the length of the platforms so that dwell times can be managed without sacrificing passenger comfort.

Plant and Overhead Line Equipment

- 5.2.27 In the vicinity of the new station, approximately 25 new portal structures and extended arm twin track cantilevers will be installed to support the overhead power cables to provide traction power to trains.
- 5.2.28 At Shepreth Branch Junction, the junction remodelling works will require approximately 30 new portal and single-track cantilever structures. Some of these will replace existing structures.
- 5.2.29 In the area on the southern approach into Cambridge Station, there will be around 10 new portal and single-track cantilever structures.

Signalling

- 5.2.30 Works to provide new signalling infrastructure are required as part of the Project to make sure that trains operate safely and performance is as effective as possible.
- 5.2.31 Structures are typically up to 4m tall, offset from the track by about 2m. Details will be developed in later design stages.

Telecommunications

- 5.2.32 A GSM-R mast for railway communications, similar to a mobile phone mast, is currently located by Shepreth Branch Junction. This is proposed to be relocated to the west to allow a section of new track to be installed.

Electrical and power

- 5.2.33 A substation including a transformer will be incorporated within the western station building. This will provide power to the new station buildings, platforms and lifts.
- 5.2.34 A transformer substation will be installed south west of Nine Wells Bridge. This will provide power to railway systems. In addition, a permanent enclosure for railway plant and equipment will be located in the same area.

Drainage and culverts

- 5.2.35 Swales and attenuation basins to regulate the water going into the existing watercourses will make sure that the proposed drainage system of the station and associated track will have minimal impact on the flow and efficiency of the existing watercourse/drainage network.
- 5.2.36 Wherever possible, sustainable drainage system techniques would be utilised, as appropriate, to prevent adverse effects on flood risk to the scheme and third parties through attenuation of flows. Current high-level proposals also recognise the need for below ground flood storage within the area of the station forecourt to the east.

5.2.37 The drainage strategy will demonstrate how the new station and its associated infrastructure would be drained to appropriate standards and verify that any proposed changes to existing drainage features would not compromise their existing capacity or cause detriment to the functioning of the wider drainage system serving the CBC.

5.2.38 Drainage design will be developed further. This will accord with a number of design principles that align with Network Rail's design guidance on drainage.

Station drainage

5.2.39 It is proposed to channel all station-related run-off into a separate railway drainage system. Surface water drainage from both station buildings and paved areas will be attenuated within flood storage arrangements provided exclusively for railway infrastructure.

5.2.40 The existing highway drainage flow at the east side of the track will be accommodated within separate storage. The contributing catchment to the existing pond/s at the north of Addenbrooke's Road will remain the same, and its outflow towards the south ditch will not be changed.

5.2.41 Foul drainage will be connected to public sewers.

5.2.42 The final arrangements will be coordinated with drainage proposals by CSET.

Track drainage

5.2.43 Track drainage is proposed where additional tracks will be added to the railway. The proposal is to build swales and attenuation ponds at various locations to receive and hold water from the track formation.

5.2.44 Precise details of track drainage will be determined by geology, ground conditions, earthworks present or required and existing drainage.

Culverts

5.2.45 It is proposed to renew an existing culvert below the railway to mitigate flood risk. Tibbets Culvert adjacent to the Guided Busway will be enlarged and will connect to the existing Hospital Culvert that discharges into North Ditch in the proposed station area. Modification of several existing culverts to receive new track layout will be required.

5.2.46 Some existing ditches may be impacted during construction and temporary measures will be provided to avoid increased flood risk.

Discrete drainage systems

5.2.47 Drainage for discrete areas such as compounds will be managed on a site-by-site basis, in most cases via grading of the compound area towards perimeter attenuation ditches.

5.2.48 During construction foul water from welfare facilities will be discharged to the local foul drainage network if a connection is available, otherwise an above ground foul water processing plant will be used to treat the foul water, allowing it to be discharged into a nearby watercourse. On the satellite compounds, the alternative to a mains drainage connection would be an above-ground foul tank, emptied every month for disposal to a sewage treatment works.

Highways

- 5.2.49 The crossing and footway to the west of Hobson's Park over the Guided Busway will be widened.
- 5.2.50 The access from Addenbrooke's Road may need to be modified for construction and maintenance vehicles and to provide an alternative access for the closure of the two private level crossings.

Footbridge and Public Rights of Way

- 5.2.51 Works may be required to alter the existing stepped footbridge (ref BGK/1543B) which crosses the WAML at Shepreth Branch Junction to maintain safety for users of the footbridge following any changes to infrastructure. Great Shelford FP1 footpath may need to be altered accordingly. The exact scope is to be confirmed.

Ancillary infrastructure

- 5.2.52 Table 5.3 sets out the additional items of work required to support the main elements of the Project described above.

Table 5.3 Ancillary infrastructure

| Item | Description | Location |
|--------------------|--|--|
| Fencing | Fencing will be required along the new permanent NR boundary. | Fencing will be appropriate for any given location. |
| Lighting and CCTV | Lighting and CCTV will be provided for the safety and security of station and platform users. Lighting, in the form of LED, downward facing, directional fittings, will be provided at complex junctions. | Lighting and CCTV will be provided in: <ul style="list-style-type: none">• Station forecourt on the east and west sides of the railway• Station buildings and platforms• New path on the west on Hobson's Park |
| Utilities | Diversion of existing and provision of new utilities connections to facilitate construction and operation of the Project. | Locations to be confirmed. |
| Maintenance access | Vehicle and pedestrian access to be provided for maintenance. | Locations for maintenance access are proposed: <ul style="list-style-type: none">• By Websters Level Crossing;• South of Nine Wells Bridge on the east side of the railway;• North of the Guided Busway on the east side of the railway;• North of the Guided Busway on the west side of the railway; and• South of Nine Wells Bridge on the west side of the railway. |

Shepreth Branch Junction

- 5.2.53 At this location works involve the realignment of the existing track at Shepreth Branch Junction to permit the line speed through the junction to be increased from 30mph to 50mph. This requires new track to be constructed to the west of Network Rail's existing land ownership. Additionally, track realignment of the Royston branch curve is required for these line speed improvements.
- 5.2.54 These works are required to maintain performance of train services for passengers.
- 5.2.55 Approximately 30 new portal and single-track cantilever structures will be constructed. Some of these will replace existing structures.
- 5.2.56 Works may also be required to alter the existing stepped footbridge (ref BGK/1543B) which crosses the WAML and lines at Shepreth Branch Junction to maintain safety for users of the footbridge following any changes to the infrastructure. The exact scope is to be confirmed.
- 5.2.57 Two private level crossings, namely Websters and Dukes No.2 level crossings, are proposed to be closed and alternative access provided.
- 5.2.58 An existing GSM-R Mast will need to be relocated to the west side of the railway to allow new track to be installed.

Southern approach into Cambridge Station

- 5.2.59 In summary the works involve an extension to the existing shunt spur and the addition of a crossover which will connect the shunt spur to the WAML. This will provide more flexibility for train movements into Cambridge Station.
- 5.2.60 The extension of the shunt spur and the crossover will have overhead line. There will be around 10 new portal and single-track cantilever structures within the existing railway boundary.
- 5.2.61 The works are located wholly within Network Rail's operational land ownership.

5.3 Evacuation and emergency services

Evacuation

- 5.3.1 The platforms will be provided with two footbridges located near the north and south ends of the platforms. The east and west entrances and island platforms 2 and 3 are provided with passenger lifts to access the northern footbridge.
- 5.3.2 The use of these lifts for evacuation will be subject to a dynamic risk assessment by the station operator at the time of evacuation to determine if the risk of using the lifts for evacuation is as low as reasonably practicable. If the location of the fire prevents persons with reduced mobility accessing the lifts to complete their evacuation, a passenger refuge will be required at the southern ends of the platforms 2 and 3. The detail of this refuge and a comprehensive fire and evacuation strategy will be developed in later design stages.

- 5.3.3 Secondary means of escape are proposed via ramped access points at the southern ends of the side platforms. On the west this is proposed onto Hobson's Park; the route on the east is to be developed further.

Emergency vehicles

- 5.3.4 Access for emergency vehicles will be via Francis Crick Avenue on the east side. The eastern station forecourt layout incorporates a turning circle for firefighting vehicles.
- 5.3.5 On the west emergency vehicles will access the station building via Addenbrooke's Road and under Nine Wells Bridge.

5.4 Operations and maintenance

Operational Working Hours

- 5.4.1 Operational hours for the station will be confirmed at a later stage of design. These may be similar to other stations in the proximity:
- Monday to Saturday: 05.30 – 23.30; and
 - Sunday: 07.30 – 22.30.

Maintenance

- 5.4.2 To ensure safe and effective operation of the station and associated railway infrastructure, maintenance activities will be required. A detailed Maintenance Strategy will be prepared during detailed design, but it is likely that the following activities will be required:
- Cleaning;
 - Repairs;
 - Switch and crossing (S&C, i.e. point work) inspection;
 - Inspection and maintenance of swales and attenuation ponds;
 - Drainage system inspection and maintenance;
 - Control system maintenance and repair; and
 - Regular railway asset inspections.
- 5.4.3 Permanent access and maintenance areas will be required to support these proposed activities. Whilst the precise locations of these sites will be fully determined during detailed design, sufficient area within the TWAO boundary is provided to accommodate this infrastructure. There will be a need to secure on-going rights related to management and maintenance over third party land.

Maintenance visits and working hours

- 5.4.4 There will be a small amount of site and associated traffic during the operation of the station for the purposes of planned maintenance visits. Planned maintenance can be carried out more safely whilst trains are not running/ not so many trains are running so these visits are likely to occur outside of operational working hours.

- 5.4.5 In addition, there may be instances where necessary unplanned maintenance activities will be required, for example, to repair damage caused by weather or vandalism.
- 5.4.6 Any activities will be managed according to appropriate management plans and in accordance with Network Rail's policies relating to the environment and safety.

6. CONSTRUCTION

6.1 Emerging proposals

6.1.1 This section summarises the emerging strategy to construct the station. It provides a description of key features of the construction activities, such as construction compounds, access points and haul routes.

6.1.2 The approach to construction draws upon the expertise and experience of specialists who have worked on similar projects.

6.1.3 Construction planning is in its early stages and will be further developed over the next 12 months so the information presented is provisional.

Programme

6.1.4 Subject to the TWAO being granted and funding being received in a timely manner, the potential period for construction is 2023-2026.

6.1.5 Construction will not be continuous during this period and will be staged in a manner to minimise disruption to lineside neighbours and railway passengers.

6.1.6 In reality, the programme of works will be subject to constraints, among them the availability of resources, timing of railway blockades, possessions and interfaces with other local projects.

6.1.7 As there will be a need to take possession of operational railway whilst safety-critical works are undertaken, planning for this will be critical to communicate accurate, relevant and timely information to passengers in advance of any timetable changes. Various teams will liaise on plans to minimise disruption to passengers and communicate with lineside neighbours well in advance of the start of works.

6.1.8 We are currently working to refine and reduce the construction period as far as possible.

Phasing of Construction Works

6.1.9 A high-level phasing plan to construct the station has been prepared. This takes account of the fullest extent of works, the operational requirements of the existing railway and the limitations they impose along each section of the railway. It also takes account of and balances the access and resource requirement across the length of the Project. This will be subject to change.

6.1.10 We propose to build the new station in phases, whilst trains continue to run as much as possible.

6.1.11 The existing Up and Down lines must be diverted around a new central island platform. Additional lines must be added alongside new flanking platforms.

6.1.12 To achieve that, it is judged that two new lines will be constructed to the east of the existing lines whilst the railway is operational. When complete, the existing lines will be diverted to allow the construction of the island platform and two new lines to the west.

Construction activities

6.1.13 The main construction works will involve:

- Construction of the station buildings, forecourt and access paths;
- Construction of stairs, connecting footbridges and lift shafts;
- Installation of new tracks and platforms;
- Diversion of new lines to allow construction of platforms;
- Provision of associated railway infrastructure;
- Interface with existing structures;
- Signalling and OHLE works;
- Utilities diversions;
- Drainage including alterations to existing site drainage;
- Temporary diversion and reinstatement of NCN Route 11;
- Changes to the intersection of the Guided Busway and Francis Crick Avenue; and
- Enhancement works at Shepreth Branch Junction and the southern approach into Cambridge Station.

6.2 General working arrangements

6.2.1 The area within which the majority of the works for the Project will be undertaken is operational railway. To enable construction temporary restrictions or closures to rail traffic will be required.

6.2.2 The strategy to gain access to the railway and to implement construction will be location dependent, taking account of the operational status at each location.

6.3 Construction compounds

6.3.1 A number of compounds will be required temporarily in order to facilitate and manage construction. The exact siting and size of compounds will take into account consultation with landowners, environmental features, topography and ownership of land for access.

6.3.2 Each compound will act as a point of access off the highway network to the Project. The design of access points and junctions will take into account comments received during consultation from the Local Highways Authority.

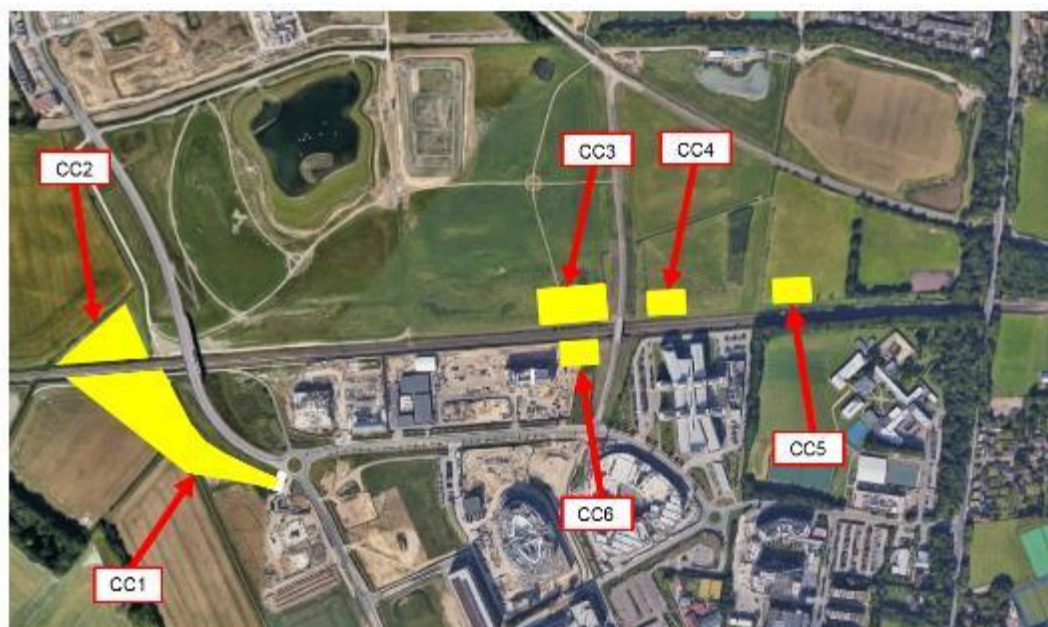
6.3.3 There will be two main types of compound:

- Strategic compound – this is a larger, main compound from which construction and main project management is undertaken consisting of a main office space, main welfare facilities and processing and storage of site-won materials (such as excavated soil); and
- Satellite compound – this is a smaller compound from which construction for that sub-section is managed, comprising small offices and welfare facilities, storage of plant and materials and some material processing.

6.3.4 We propose to establish two strategic compounds and four satellite compounds to support the different elements in the vicinity of the station; see Figure 6.1 for proposed compound locations for the station and track works. These may support the following activities:

- **CC1.** On the Up side (Southbound, towards London), south of Nine Wells Bridge to the east of the railway alongside the track from Addenbrooke's Road/Dame Mary Archer Way roundabout. It is anticipated that this will be the main construction compound for the site housing all the associated site infrastructure including car parking, offices, welfare, stores, materials handling, waste handling.
- **CC2.** On the Down side (Northbound, away from London), south of Nine Wells Bridge. This area will service works on the Down side of the railway and will be a strategic compound.
- **CC3.** On the Down side, a satellite compound to support construction of the west station building.
- **CC4.** On the Down side adjacent to Addenbrooke's Bridge carrying the Guided Busway to facilitate construction of the Down Loop and to crane in elements of the S&C for the Up Loop. This will be a satellite compound.
- **CC5.** On the Down side adjacent to the northern end of the Down Loop to facilitate construction of the Down Loop and to crane in elements of the S&C for the Down Loop. This will be a satellite compound.
- **CC6.** At the north east of the Astra Zeneca car park/service yard to support construction of the east station building and forecourt. This will be a satellite compound.

Figure 6.1 Proposed strategic and satellite compounds, CC1 to CC6



6.3.5 Each compound will require utilities supplies. Where local services are available this will be from mains provided connections. Connections will be determined on a site-by-site basis.

6.3.6 To service the works at Shepreth Branch Junction, it is proposed to install three temporary compounds on the west, accessed via a haul road from Addenbrooke's Road parallel to the railway; and a compound on the east, accessed via Granham's Road. These are shown in Figure 6.2:

- **CC7.** On the west side of the railway near to Dukes No. 2 Level Crossing to support construction of the turnout onto WAML. This will be a satellite compound.
- **CC8.** On the west side of the railway midway between Dukes No. 2 Level Crossing and Websters Level Crossing to support construction of a crossover. This will be a satellite compound.
- **CC9.** On the west side of the railway at Websters Level Crossing to the junction re-modelling. This will be a main compound.
- **CC10.** On the east side of the railway at Websters Level Crossing to the junction re-modelling. This will be a satellite compound.

Figure 6.2 Proposed strategic and satellite compounds, CC7 to CC10



6.4 Site access arrangements

6.4.1 Compound preparation will require works to gain access. These will be followed by preparation of the compound area. Typically, these mobilisation activities will comprise:

- Removing topsoil;
- Installing drainage, wherever necessary;
- Providing a geo-textile layer, then stone surface;
- Providing concrete strip foundations for welfare buildings; and
- Installing welfare buildings.

6.4.2 It is likely that topsoil removed will be shaped into 2m-high bunds around the perimeter of each compound for storage until reinstated after completion. The bunds will be seeded to control weed growth and surface water run-off.

6.4.3 Access footpaths, car parking and access roads to the welfare buildings will be created within the compounds. These facilities are to be segregated from storage areas for materials and large plant and the materials processing area.

- 6.4.4 The construction compounds will be the main access points for the Project during construction. Any access rail side for the purposes of construction will therefore be via a compound.
- 6.4.5 Access roads are required between the access points and compounds and/or haul roads; see Figure 6.3 and Figure 6.4.
- **AR1.** From AR1 via a track from Addenbrooke's Road/Dame Mary Archer Way roundabout at the southern end of Francis Crick Avenue. A short access road across to the railway would be required. This will require an upgrade of an existing unmetalled access and will require the temporary diversion of the National Cycle Network (NCN) Route 11 during the construction period. This is a key access and will be well used.
 - **AR2.** From AR2 via a track just north of Hobson's Brook just south of Nine Wells Bridge, 1544C. Active or redundant farmland is present to both east and west sides of the railway, at or near grade (i.e. at the same level as the railway), with remnant access tracks visible created during construction of the highway and Nine Wells Bridge. The corridor, including the remnant access tracks, is within the boundary of Hobson's Park.
 - **AR3.** From AR3, via an existing access from Long Road into the St Mary's School playing fields. This is an existing metalled access which is already suited to the intended purpose although it is likely to need repair on completion of the works. The track is relatively narrow although considered suited to occasional construction plant movements.
 - **AR4.** From AR4 along the eastern toe of the Guided Busway north embankment. There is no existing path, and an unmetalled road would be required for the duration of the work. This road may need to cross a swale assumed to be required for the Guided Busway drainage. In this case, a temporary pipe crossing would be used.
 - **AR5.** From AR5 along the western toe of the Guided Busway southern embankment. There is no existing path and an unmetalled road to the railway will be required until the area is transformed into the eastern station forecourt.
 - **AR6.** From AR6 via a track just north of Hobson's Brook just south of Nine Wells Bridge, 1544C. A bridge over Hobson's Brook and an unmetalled road along the Brook and the edge of the field towards Shepreth Branch Junction will be required. The bridge will provide permanent access to the field for agricultural use.
 - **AR7.** From AR7 via footpath Great Shelford FP1 from Granham's Road. This may require an unmetalled road. This road may need to cross a watercourse so a temporary pipe crossing would be used.

Figure 6.3 Proposed construction access roads, AR1 to AR6

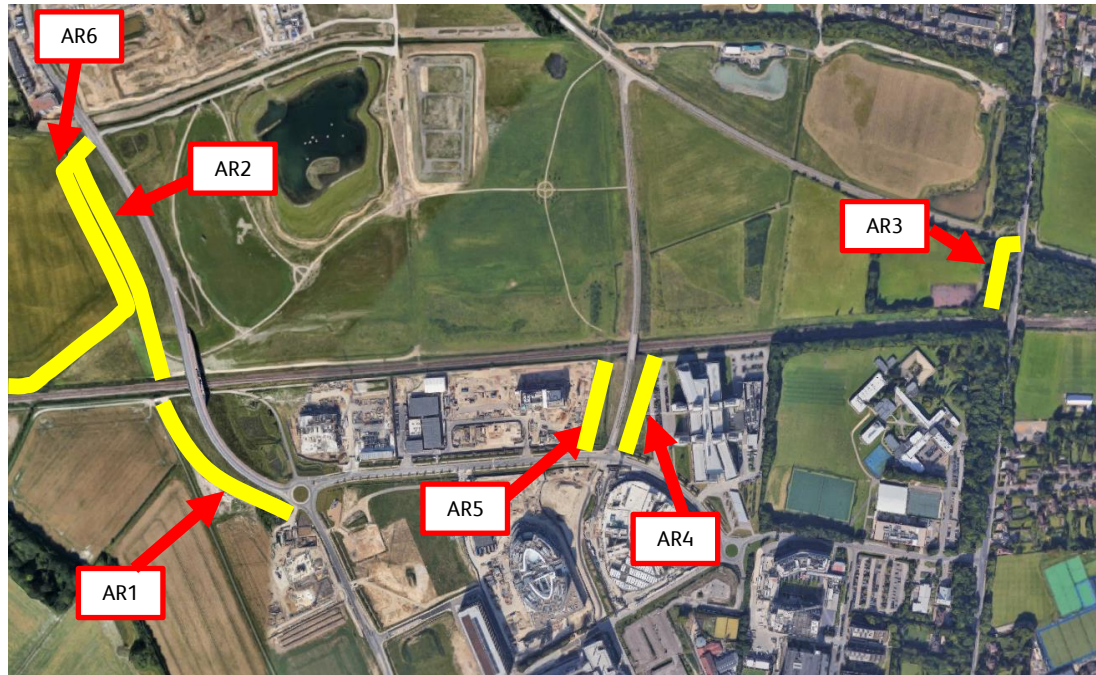


Figure 6.4 Proposed construction access road, AR7



- 6.4.6 The access strategy for the Project is still in development, however, each compound will have a dedicated access route identified using the following criteria:
- There is to be a single dedicated delivery route to each compound, both strategic and satellite;

- Use is to be made of the widest and most direct routes to access Junction 11 of the M11.
- Construction traffic is to avoid travelling through villages/residential areas if possible;
- Construction traffic is to avoid routes that will pass sensitive receptors such as schools; and
- Construction traffic is to avoid routes which are twisty or involve many turning manoeuvres.

6.4.7 Possible routes are currently being assessed for constraints and will be developed in consultation with the Local Highway Authority. The routes, once agreed, will be set out in a Construction Traffic Management Plan.

6.5 Works areas and access routes

6.5.1 The land within the Project boundary takes account of requirements for both works areas and access routes. This is to seek to minimise construction traffic on local roads.

Haul routes

6.5.2 Haul roads will provide access to works areas from compounds. The preferred layout will be to have a single direction haul road located on each side of the railway corridor. This is to allow for access to both sides of the works corridor without affecting any ongoing construction operations. In some locations, the positioning of a haul road is to be restricted to one side of the railway corridor only. This results in a requirement for bi-directional haul roads.

6.5.3 At some locations there may be a need to route haul routes around an environmental feature or land resources or avoid these at all. In these instances, access to works areas along the construction corridor is the only viable option.

6.5.4 Provision of the haul roads will be undertaken alongside compound set up as part of the mobilisation for the construction phase.

6.5.5 There are works to either side of the railway at some points, so access will be required along both sides of the railway along the extent of the proposed works. Proposed haul routes are shown in Figure 6.5 and Figure 6.6. Further work to refine these and minimise impact further will be undertaken in later design stages.

- **HR1.** From Nine Wells Bridge, along the Up side railway boundary to the east of the railway, south to Nine Wells Stream.
- **HR2.** From Addenbrooke's Road along the Down side railway boundary to the west of the railway south to Nine Wells Stream.
- **HR3.** From Addenbrooke's Road, along the Down side railway boundary to the west of the railway towards Addenbrooke's Bridge. This is through Hobson's Park.
- **HR4.** On the Down side, from Long Road across the field to the west of the railway towards Addenbrooke's Bridge.
- **HR5.** Along the Up side railway boundary to the east of the railway along the rear of the Medical Research Council Laboratory site.

- **HR6.** Along the Up side railway boundary to the east of the railway at the rear of the Biomedical Campus between Nine Wells Bridge and Addenbrooke's Bridge.
- **HR7.** From Addenbrooke's Road, over and along Hobson's Brook to the west of the railway south to Shepreth Branch Junction.

Figure 6.5 Proposed haul roads, HR1 to HR6

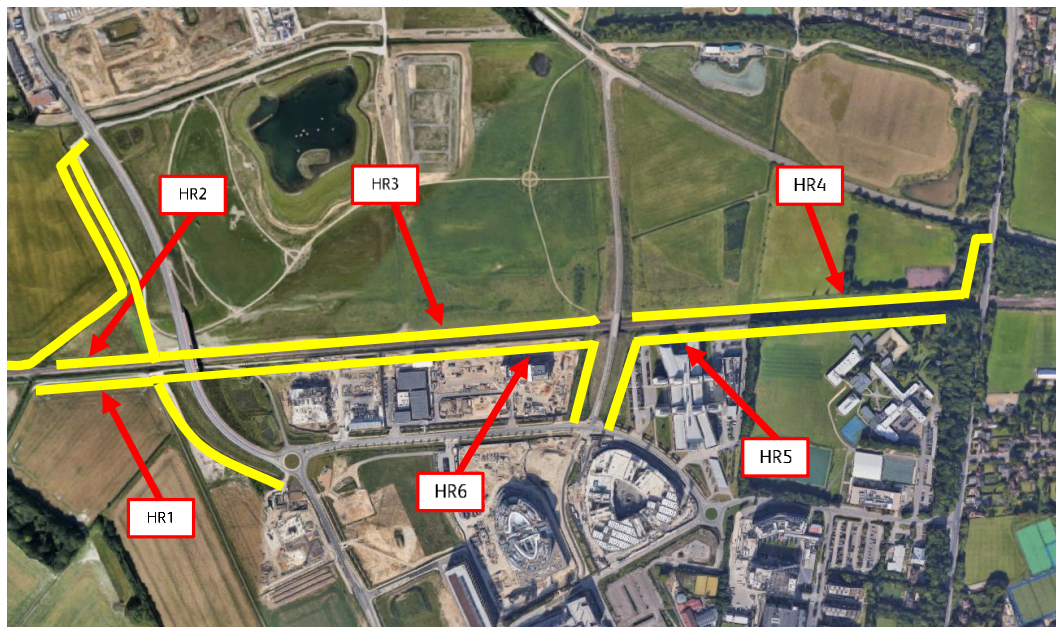


Figure 6.6 Proposed haul road, HR7



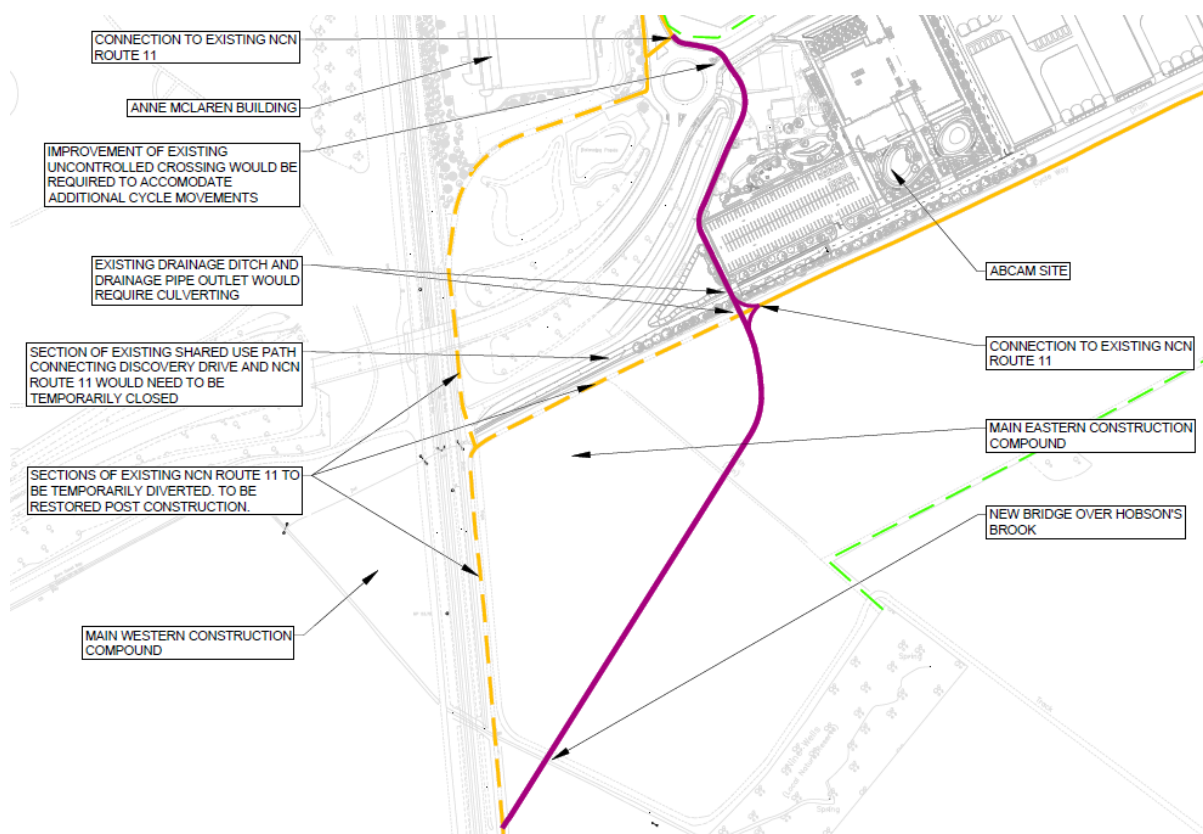
6.6 Temporary diversion of National Cycle Network Route 11

- 6.6.1 National Cycle Network (NCN) Route 11 links Great Shelford with Waterbeach via Cambridge city centre. In the vicinity of the station it runs parallel to the east side of the railway from Great Shelford, across Hobson's Brook, under Nine Wells Bridge and joins the cycle lane on Francis Crick Avenue, over Addenbrooke's Bridge and then alongside the Guided Busway going north towards Cambridge City Centre.

6.6.2 Works to widen the tracks under Nine Wells Bridge and the siting of the main eastern compound to the south east of the bridge will result in a section of NCN Route 11 being temporarily stopped up and a diversion route provided to the east – see

6.6.3 Figure 6.7 and Appendix F.

Figure 6.7 Temporary diversion route of NCN Route 11



6.6.4 The temporary diversion will start south of Hobson's Brook and cross over a new temporary bridge over Hobson's Brook. The path will be up to 4m wide and travel along the east side of the main eastern compound towards Addenbrooke's Road roundabout.

6.6.5 Improved pedestrian and cycle crossing facilities will be provided on the Dame Mary Archer Way and Francis Crick Avenue arms of the roundabout. The diversion will connect to the cycle lane on Francis Crick Avenue.

6.6.6 The CSET project has an interface with the Project at this location so these proposals may be refined as the projects develop further to minimise disruption to the public.

De-vegetation

6.6.7 De-vegetation and site clearance will be undertaken as required following installation of the haul roads. The work will progress from the compounds outwards toward the adjacent compounds in both directions. The work will result in a stockpile of trees and brushwood prior to chipping. The brushwood will be retained on site to encourage biodiversity.

6.6.8 Construction of the station and new paths on the west will require the need to remove permanently some of the trees on Hobson's Park, some of which were planted by children from Fawcett School in 2012.

6.6.9 Our current plan is to carefully lift the trees and temporarily replant them elsewhere in the Park and nurture them before returning them to their original positions in the Park (or close by) once the station has been built. Should the plants not survive this temporary move we would replace them with plants of the same species. We aim to save as many trees as we can and will consult with Cambridge City Council and Fawcett School.

6.7 Utility diversions

6.7.1 There are several utility services that will be affected by the Project and will require diversion as part of the construction phase. Where possible, those utility services located within existing roads will be diverted under traffic management. In the event that there is insufficient space to undertake the required works and provide the necessary road space for traffic, temporary road closures and diversions will be proposed.

6.7.2 All works proposed in relation to the public highway will be arranged in consultation with the Local Highway Authority and undertaken under a specific traffic management scheme. All utility service works will be designed and planned in consultation with the owning Statutory Providers responsible for those services.

6.7.3 Buried utility services that will be crossed by haul roads will be appropriately protected in agreement with the utility owner, which will be installed following de-vegetation and clearance in preparation for the haul road construction.

6.7.4 Certain buried utility services, such as high-pressure gas pipelines, will require an exclusion zone to be provided, prohibiting excavation or machinery, except for that directly engaged in diversion works.

6.8 Public highway works

6.8.1 Works required to public highway network for the Project will be designed in consultation with the Local Highway Authority. All utility service works will be designed and planned in consultation with the statutory undertakers responsible for the services.

6.9 Code of Construction Practice

6.9.1 To reduce the effects of construction on communities and the environment, Network Rail will seek to agree a Code of Construction Practice (CoCP) in consultation with the Local Planning Authority.

6.9.2 The CoCP will identify how construction impacts such as traffic, noise, vibration and dust will be monitored, controlled and managed.

6.9.3 Access to public areas will be maintained during construction. By law, we must implement measures to manage access across defined boundaries and consider the site characteristics and identify hazards and how these will be managed.

6.9.4 On Hobson's Park, we will ensure that vulnerable groups are protected from construction areas e.g. by securing sites adequately when finishing work for the day and fencing areas to exclude unauthorised people.

7. ENVIRONMENTAL CONSIDERATIONS

7.1 The need for Environmental Impact Assessment

- 7.1.1 Applications for Transport and Works Act Orders are made in accordance with the Transport and Works (Applications and Objections Procedure) (England and Wales) Rules 2006 (the Applications Rules).
- 7.1.2 Rule 7 requires the submission of an Environmental Statement, for works that fall under Annex I or Annex II to the Environmental Impact Assessment Directive (European Council Directive 2011/92/EU) (as amended). This Project will require an Environmental Statement under Annex II.
- 7.1.3 Environmental Impact Assessment (EIA) is a process of evaluating the likely significant environmental impacts as a result of the construction and operation of a proposed project or development on the natural and physical environment and the relationship of people with that environment.
- 7.1.4 The assessment for this Project will look at the likely significant impacts of our proposals and, where appropriate, identify measures to avoid, reduce or mitigate such impacts.
- 7.1.5 These measures could include contributing to the Clay Farm Public Art Strategy, creating new and more diverse habitats, planting trees and hedges, introducing new ponds and protecting watercourses.
- 7.1.6 The assessment will also ascertain cumulative effects generated by other known 'committed' developments coming forward at the same time as the Project.
- 7.1.7 Further engagement with relevant stakeholders will be undertaken as the EIA progresses.

Scoping Opinion

- 7.1.8 A request for a Scoping Opinion, submitted as a Scoping Report, will be made to the Secretary of State for Transport in the Autumn.
- 7.1.9 The Scoping Report will identify the following topic areas to be assessed within the EIA:
- Air Quality;
 - Biodiversity;
 - Climate Change;
 - Cultural Heritage;
 - Ground Conditions and Contamination;
 - Landscape and Visual Impacts;
 - Noise and Vibration;
 - Materials and Resource Management;
 - Population and Health;
 - Socio-Economic Effects;

- Surface Water Resources and Flood Risk; and
- Traffic and Transport.

7.2 Areas of particular environmental focus

7.2.1 In the first round of consultation a number of respondents raised concerns about environmental impacts relating to air, noise, vibration and ecology. They wanted us to avoid harming natural habitats in Hobson's Park and the Nine Wells Local Nature Reserve, to protect watercourses, restore lost planting and avoid or minimise damage to environmental designations. The EIA will look at these concerns.

7.2.2 A landscape context plan is provided in Appendix G.

7.2.3 The following section highlights some areas of environmental concern that we acknowledge as being of particular importance to the local community and stakeholders.

Hobson's Park and bird reserve

7.2.4 Hobson's Park, the bird reserve and lake established at the western side of the Park as part of the Clay Farm development are recognised as part of very important corridors which maintain biodiversity of mammals, birds, insects and plant life in and through the landscape of Cambridge. Recent surveys have shown that the lake and its islands are primarily used by breeding black-headed gulls, as well as Greylag and Canada Geese, and Common Tern. Other habitats within the bird reserve reveal regular singing reed bunting and reed warbler, skylark, little egret and corn bunting. Nine Wells Bridge (which carries Addenbrooke's Road) has hosted multiple active house martin nests.

7.2.5 Whilst the Project design is developed, mitigation and enhancement to deliver overall biodiversity net gain will be targeted in line with emerging environmental legislation and local policy. Detailed ecological studies will also be carried out to inform the development of an ecological mitigation strategy, which will include developing proposals for habitat creation.

Local watercourses and hydrology

7.2.6 Watercourses of importance to the local community and wildlife lie in the area of the development proposals. Of local and national importance is Hobson's Brook, a rare chalk stream that originates at Nine Wells Local Nature Reserve that has historic significance to the local area.

7.2.7 Appropriate mitigation measures will be implemented during construction to avoid and protect this asset and other water features so they are not significantly affected. These will be identified later design stages.

7.2.8 Consideration of flood risk and the potential impacts upon surface water, drainage and third parties will continue to inform our design process.

Historic environment

7.2.9 There is a rich history of early settlement dating back to the Iron Age and Roman period in the vicinity of the site. The station sits in the far eastern part of Hobson's Park on the

west adjacent to the Guided Busway bridge; initial studies show that potential archaeology lies within Hobson's Park. There is a scheduled monument in the south west.

- 7.2.10 The EIA will consider the effects on these historic assets; further discussions with the Historic Environment Team at Cambridgeshire County Council and Historic England will be held.

Landscape strategy

- 7.2.11 A central part of our landscape strategy is to showcase and enhance the natural features of the area. Landscaping will include creating habitats for bird nesting/foraging, hedges, wetland, pollinator planting, trees and other planting.

- 7.2.12 Our landscape designers are working with the station architects to make sure that the proposals:

- reflect original aims of Hobson's Park;
- are set within strong landscape framework of trees and other planting;
- complement the architectural form and materials of surrounding development;
- emit minimal exterior lighting;
- create habitat which diversifies current provision;
- balance the visually legibility of the station from key destinations, without becoming a dominating visual focus to users of Hobson's Park; and
- have minimal harm on the openness and purposes of the Cambridge Green Belt.

- 7.2.13 The location of the station building and associated infrastructure partly within the Cambridge Green Belt is unavoidable to allow reasonable ease of access to the station from the west. However, the harm to the openness of the Green Belt has been minimised by:

- placing the station at the furthest point away from the open countryside that is protected by the Green Belt designation;
- restricting access to the west side of the railway to pedestrians, cyclists and the occasional maintenance vehicle only;
- developing proposals to compensate for and bolster the existing native tree and shrub vegetation that surround the station and the railway from Addenbrooke's Bridge to Nine Wells Local Nature Reserve; and
- establishing principles for the next stages of the design of the station such as: using vegetation to filter (and not block) views from the Park, use of a roofscape that is more organically shaped (than those within the Biomedical Campus) and aligning the building entrances to the existing path network.

- 7.2.14 Further engagement with stakeholders to develop emerging landscape designs for the station will take place.

Biodiversity Net Gain

- 7.2.15 The aim is to leave biodiversity in a better state and support, where possible, nature conservation priorities. Biodiversity Net Gain (BNG) will be achieved through

consultation with the landscape architects, ecologists, Natural England and other stakeholders.

- 7.2.16 The Network Rail Biodiversity Calculator will be used to measure and aim for greater than 10 % BNG. This calculator builds on a methodology developed by the Department of Food, Environment and Rural Affairs.
- 7.2.17 It is a way of standardising and streamlining calculations of biodiversity units across Network Rail projects and the company is able to report on its performance and to track progress towards achieving BNG as an organisation.

Recreation and amenity

- 7.2.18 NCN Route 11 located within the site, described earlier, would be returned to its current alignment under Nine Wells Bridge after construction.
- 7.2.19 New routes will be created to enhance access to the station from both sides of the railway.

Noise and vibration

- 7.2.20 Measures to protect the amenity of our neighbours and local communities has been, and will continue to be, an important consideration in developing our designs. We will aim to minimise the potential for noise disturbance for example during construction and engage with stakeholders who operate vibration-sensitive research equipment to find ways to minimise adverse impacts on their operations.

7.3 Environmental Statement

- 7.3.1 The Environmental Statement (ES) will report the findings of the EIA. The ES will comprise a main report, appendices, figures and a Non-Technical Summary which will provide concisely a description of the EIA process and its findings in a manner that is both appealing to read and easily understood by the general public.
- 7.3.2 The ES, along with other documents required to support the TWAO application, will be available once the application is submitted.

8. APPROACH TO CONSULTATION

8.1 Purpose of consultation

8.1.1 Consultation allows us to understand consultees' views and seek to identify ways of refining our proposals and mitigating the potential impacts of the Project before the application is submitted.

8.1.2 The key activities within the consultation process include:

- launching the Project to consultees and engaging in an open, transparent and meaningful way;
- providing clear and concise technical and non-technical information on the Project;
- collating comments from prescribed consultees, the public, community groups and key stakeholders;
- reviewing feedback from all consultees and grouping responses into themes and actions;
- amending the design, where feasible, in response to consultation responses; and
- reporting back on any changes made to the TWAO application proposals.

8.2 First round of consultation

8.2.1 A variety of methods were used to publicise and undertake the first round of consultation in January 2020. We held 10 consultation events that were attended by 989 people; they viewed materials and debated the proposals with the project team and amongst themselves. We distributed leaflets to commuters at eight stations along the route and provided all of the consultation materials on the Consultation Space in a static, linear way.

8.2.2 Over the course of the first round of consultation 967 items of consultation feedback were received and there were 47,000 impressions driving 2,054 engagements via social media.

8.3 A changing environment

8.3.1 The ongoing coronavirus pandemic has implications for how engagement and consultation can be undertaken in the short term and potentially further into the future. Our proposed approach to the second round of consultation has therefore been developed taking into account the currently known implications of the pandemic, by providing a flexible approach, making greater use of digital techniques for consultation and implementation of the TWAO process.

8.3.2 However, the use of a digital approach will not provide a single solution and has its limitations as not all members of the community will have access to the necessary technology or the skills to effectively engage.

8.3.3 Network Rail is committed to carrying out inclusive and comprehensive engagement and consultation. It recognises that if the community consultation process is to be seen to be robust and fair, a digital approach needs to be supplemented with traditional

methods of engagement and be mindful of the needs of those with protected characteristics.

8.3.4 Additionally, we have been mindful that there may be practical difficulties for intended audiences, in that many people face different working contexts and have different home environments. Whilst many people are upskilling their digital abilities in the present situation, reliance only on a digital-only approach will also potentially exclude some people, in particular older people, those on lower incomes and people with long-term health conditions.

8.3.5 To this end, our approach proposes a mix of digital (non-contact) and non-digital engagement to achieve the same standard and reach as traditional activities. This takes the form of enhancing the existing use of digital engagement and consultation methods complemented by non-digital methods with extra consideration for all possible stakeholders and voices and the changing environment.

8.4 Second round of consultation

Whom will we consult with?

8.4.1 The consultation is open to everyone who wishes to participate (as was the case for the first round of consultation). Consultation planning recognises that effective and on-going engagement with the following wide range of stakeholders is key to the successful promotion of the TWA0:

- Prescribed consultees (those we are required to consult with as set out in the Transport and Works (Applications and Objections Procedure) (England and Wales) Rules 2006);
- Those with a potential interest in land that might be affected by the proposals;
- Community consultees which include:
 - Individuals, businesses and groups based or living in the vicinity of the Project;
 - Individuals who are users of the area or visitors to it;
 - Voluntary organisations (including residents' associations);
 - Schools and colleges in the vicinity;
 - Other members of the public regardless of location.

Prescribed consultees, those with potential land interests and interest groups

8.4.2 Engagement with prescribed consultees and those with land interests will continue using the ways of working which we are all now adopting as normal. We recognise that the current situation has seen impacts on those parties' resources, and their ability to resource and ring-fence adequate time. We will consider requests for extensions of response time as favourably as possible on a case-by-case basis.

8.4.3 This stakeholder information pack will be issued by email on 19 October 2020 and be available for download from the Consultation Space.

Community consultees and members of the public

- 8.4.4 This round of consultation will take place primarily online via the Consultation Space platform.

Webpage

- 8.4.5 The Cambridge South station webpage on the Network Rail website (link <https://www.networkrail.co.uk/cambridge-south-station>) will provide information about this consultation and a link to the consultation page on the Consultation Space platform.
- 8.4.6 The URL itself, <https://www.networkrail.co.uk/cambridge-south-station>, will be referenced in consultation materials and on publicity materials.

Consultation Space

- 8.4.7 Consultation Space is a publicly accessible web-based platform which lists consultations that are run by Network Rail. As an online resource, access is available 24/7.
- 8.4.8 The platform will be a resource for all consultation materials with an online feedback form and contact details. It will be designed to display content more dynamically with easier to navigate sections and be more accessible for those using mobile devices.
- 8.4.9 All key documents will be available to download from the platform:
- the consultation brochure;
 - Frequently Asked Questions;
 - this consultation stakeholder information pack; and
 - drawings and indicative visualisations.

Telephone facility (freephone 0800 160 1835)

- 8.4.10 We recognise that some people won't have internet access, might be unfamiliar with the technology, may find it difficult to submit written comments or may just want to talk to a member of the project team. For these groups we will provide a freephone telephone chatline where members of the project team can explain the proposals in a way that documents cannot.
- 8.4.11 Whilst the telephone won't replace the traditional interaction at a public consultation event, not least because we're a social species and face-to-face conversations are vital, the ability to talk to a member of the project team will allow this group to interact directly and get the same level of information as if they had attended an event.
- 8.4.12 We will take careful notes on our phone meetings and encourage callers to submit their consultation response by post, email or online.
- 8.4.13 The freephone facility will be available from 19 October to 31 October at the following times:
- Monday, Tuesday and Thursday from 14:00 to 17:00;
 - Wednesday from 17:00 to 20:00; and

- Saturday from 10:00 to 13:00.

Live webchat function

- 8.4.14 To allow members of the people to interact with the project team much like they would at a consultation event we will host live and interactive webchats. This facility offers greater accessibility to interact with the project team at a time and place where the user feels comfortable consuming the content than a physical event which is bound by location and time constraints. This is particularly useful for those with hearing impairments or those who are more comfortable typing than talking and groups of younger people who are not attracted to traditional events.
- 8.4.15 During the hours of operation, the project team will be available to explain the proposals, answer queries and help signpost the user towards ways to find out more information and other ways to participate. A transcript of the chat can be requested.
- 8.4.16 The webchat facility will be available from 19 October to 29 October at the following times:
- Monday, Tuesday and Thursday from 10:00 to 16:00; and
 - Wednesday from 14:00 to 20:00.

Online sessions by invite

- 8.4.17 We will facilitate live and interactive sessions by invite to targeted stakeholders such as parish councils, cycling interest groups, accessibility groups, those who work on the CBC, local residents' associations and other groups upon request. These will be hosted on the Microsoft Teams platform (sign-up is free) and could involve a hosted slideshow to help explain the proposals and a live question and answer session (whether in person or written in case they prefer not to comment during live events).

8.5 How to respond

- 8.5.1 We are inviting comments from everyone, and especially all those living and working in and around the CBC and South Cambridgeshire.
- 8.5.2 We would really value your feedback on these proposals, and you can send us your comments by 23:59 on 29 November 2020 in any of the following ways by:
- taking our online survey at the dedicated consultation webpage when you visit <http://www.networkrail.co.uk/cambridge-south-station>;
 - emailing your views to cambridgesouth@networkrail.co.uk; and
 - posting a response to Network Rail Infrastructure Ltd, 167-169 Westbourne Terrace, London W2 6JX.
- 8.5.3 We would like to know more about local priorities and welcome your views on what we have presented.

9. NEXT STEPS

9.1 How we will respond to consultation feedback

- 9.1.1 We will collate and analyse feedback from this second round of consultation and where appropriate hold further dialogue with stakeholders prior to preparing the TWAO application documents.
- 9.1.2 We will produce a Consultation Report which will set out how the consultation was undertaken, the issues raised by respondents and how we have had regard to the feedback in refining the final proposals.

9.2 Environment

- 9.2.1 Environmental survey work and monitoring will continue to be carried out, as a key element to informing the Project evolution and to ensure that our understanding of baseline conditions is accurate and current.
- 9.2.2 Our environmental specialists will progress the EIA, carrying out technical engagement with environmental stakeholders, assessing likely significant effects of the Project and advising on measures and design refinements to avoid or mitigate predicted significant adverse environmental effects as well as maximising positive environmental effects.
- 9.2.3 As we develop our proposals and their likely significant effects on the environment and local communities, we will prepare more detailed strategies to address these effects. The full detail of these strategies will be reported in the ES.

9.3 Preparing for submission of a TWAO application

- 9.3.1 We will prepare the TWAO application documents ready for submission in 2021 to support a funder target of the station opening in 2025. The station opening date is subject to receipt of funding and consents, as well as detailed construction planning which will happen in the next design phase when a robust future programme will be developed.
- 9.3.2 Following submission, objections and other representations can be sent to the Transport Infrastructure Planning Unit⁴. The role of the Unit is to carry out the subsequent procedures on the Secretary of State's behalf, which may include holding a public inquiry or a hearing if a "statutory objector" informs the Secretary of State in writing that they want their objection to be referred to an inquiry or hearing⁵.
- 9.3.3 To opt-in to receive progress updates of the Project please email cambridgesouth@networkrail.co.uk.

⁴ <https://www.gov.uk/government/publications/transport-and-works-act-orders-a-brief-guide-2006/transport-and-works-act-orders-a-brief-guide#q17-what-is-the-role-of-the-transport-infrastructure-planning-unit>

⁵ Refer to [The Transport and Works \(Inquiries Procedure\) Rules 1992](#)

APPENDICES

APPENDIX A

Proposed land boundary plan with easements

APPENDIX B

Proposed station location plan

APPENDIX C

Modifications to intersection with Guided Busway and Francis Crick Avenue

APPENDIX D

Indicative visualisation of the station from the east

APPENDIX E

Indicative visualisation of the station from the west

APPENDIX F

Temporary diversion of NCN Route 11

APPENDIX G

Landscape context plan