2021 Consultation feedback report:

Chapter 3: Approach to Cambridge

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3. The approach to Cambridge

This chapter provides our responses to the feedback received about matters which relate to proposals for the railway to approach Cambridge.

It includes a summary of the main points that were raised, and our responses to them. Where respondents raised comments about specific aspects of our proposals for the new railway or they related to one geographical area, these are reported in Chapters 4 to 10. See Chapter 1 for a table which provides details of which chapters contain information about specific geographical sections of the route.

Throughout this section, text in italics is our response to the matters raised in your feedback.

3.1 Introduction

At the 2021 consultation, we expressed our preference for EWR to take a southern approach into Cambridge. This is summarised as follows:

The route would leave Cambourne with two dedicated EWR tracks. It would head south-east passing under the A428, then north of Highfields Caldecote, west of Comberton village and south of Haslingfield Village, passing through Chapel Hill, and crossing the river Cam. It would then pass south of Harston village where it would join the Royston Branch Line via a new grade-separated junction. There would be no additional track on Royston Branch Line; EWR would use the existing two tracks. The route would then meet the West Anglia Mainline (WAML) at Shepreth Branch Junction. Between Shepreth Branch Junction and Long Road Bridge, the route would have four tracks (two existing WAML and two new EWR tracks). EWR trains would stop at Cambridge South station. Between Long Road and Cambridge station throat the existing three tracks would be increased to four. At Cambridge station, platforms would be extended, and a new island platform created.

Due to the fact that we developed options with a station north of Cambourne, which could facilitate a northern approach to Cambridge, we updated the information relating to our previous conclusion to prefer the Southern Approach to Cambridge.

At the same non-statutory consultation, an option for a northern approach to Cambridge was annexed to the main report. Our consideration of this confirmed the previous decision to discount a northern approach to Cambridge. The option is summarised as follows:

The section from Cambourne to Milton would leave Cambourne with two dedicated EWR tracks and pass south of Dry Drayton and Bar Hill. A new crossing would be required for the eight-lane A14. The route would pass under a realigned guided busway. The A10 near Milton would be re-routed. EWR would join the West Anglia Mainline at a new grade-separated junction north of Milton. Two new tracks would be provided to Cambridge station. Cambridge

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North station would be upgraded. Fen Road Level Crossing would close with alternative access provided. The four road bridges and river crossing between the new Milton Junction and Coldham's Lane would be upgraded or replaced. The acquisition and demolition of commercial and residential properties would be required, plus it would be necessary to build on Common Land south of the River Cam to provide space for the new tracks. New platforms would be provided at Cambridge station and works would be undertaken to improve the throat to the station. Appendix F of the 2021 Non-Statutory Consultation Technical Report provides further detail (page 44 onwards).

The option was considered to be less attractive than the Southern Approach to Cambridge. Reasons for then preferring the Southern Approach to Cambridge included that the Southern Approach to Cambridge:

- Provided the opportunity to support growth and development around the proposed Cambridge South station.
- Enabled EWR services to be extended to Ipswich, Norwich and other destinations in future without requiring them to reverse at Cambridge station.
- Avoided significant features and constraints that would be affected by an approach from the north (including property demolitions in Cambridge City), meaning a lower level of effort, complexity and expense to mitigate potential impacts.
- Had a capital cost which was estimated to be £0.6 billion less than the Northern Approach to Cambridge (at 2019 prices).

Since the 2021 consultation, we have looked again at a northern approach and developed an updated design as part of the Affordable Connections Project (ACP). By relaxing the Project Wide Output Specification (PWOS) requirement to operate an even-interval clockface timetable, and whilst considering your feedback, we have developed a revised northern approach to Cambridge which would enable four EWR trains per hour to use this route, but with significantly reduced infrastructure from that identified as being necessary in 2021. This has enabled the possibility of choosing a northern approach to Cambridge to be considered, also taking account of feedback.

The following is a summary of a revised northern approach to Cambridge developed since 2021 non-statutory consultation ("revised northern approach"):

As for the northern approach described in the 2021 consultation, the section from Cambourne to Milton would have two new dedicated EWR tracks. The route would leave Cambourne with two dedicated EWR tracks and pass south of Dry Drayton and Bar Hill. A new crossing would be required for the eight-lane A14. The route would pass under a realigned guided busway. The A10 near Milton would be re-routed. EWR would join the West Anglia Mainline at a new grade-separated junction north of Milton and merge with the existing two WAML lines heading south towards Cambridge North station. A north-west freight chord would be an optional inclusion to allow freight to use the lines. Where the previous northern option would have required four tracks from the new Milton Junction through to Cambridge station, the revised option would use the existing WAML tracks between Cambridge North station and Coldham's Lane with no new infrastructure. This option would remove the need

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to demolish commercial and residential property, would avoid the need to build on Common Land and would remove the need re-build a number of road and river bridges in Cambridge. Cambridge North station would be upgraded. Fen Road Level Crossing would close with alternative access provided. The section between Coldham's Lane and Mill Road Bridge would be increased to four tracks. New platforms would be provided at Cambridge station and works would be undertaken to improve the throat to the station.

In addition to developing a revised northern approach, we also further developed the southern approach. This is summarised as follows:

- The majority of the horizontal route alignment remains the same, although there has been design modification to reduce the height of embankments between Cambourne and Haslingfield. These opportunities include taking the railway under roads in cuttings instead of building viaducts over them and making minor diversions to the railway alignment to allow the railway to be lowered.
- Potential amendment to the station infrastructure at Cambridge North station have been considered to allow direct connectivity to Cambridge North Station under a southern approach by increasing capacity and by providing turn back capability at the station. This gives the potential for EWR services from the south to support the development of Cambridge Science Park – for further consideration of this, please refer to [ACPR].

3.1.1 Summary comparison of the revised options:

- The revised northern approach has a significantly lower cost than the previous design due to the reduced infrastructure, and now has a lower cost than the southern approach.
- The southern approach provides direct connectivity to Cambridge South station, which we have identified as being particularly beneficial in terms of the development of Cambridge Biomedical Campus and resulting economic benefits. The northern approach allows access to some parts of the Cambridge Science Park, but is unable to provide direct connectivity to Cambridge South station for EWR trains. The southern approach therefore provides particular opportunities to unlock economic growth across the region associated with connecting the west to the Cambridge Biomedical Campus.
- Environmental risks for both options are thought to be mitigable.
- Both options afford likely forecast freight capability.
- Both options provide a four trains per hour service. The southern approach is capable of providing a more even interval service pattern and has greater flexibility to extend EWR services in the future.

Accordingly, we continue to favour the Southern Approach to Cambridge, which is identified as the preferred approach to Cambridge. The Southern Approach to Cambridge will be presented in further detail at the statutory consultation for comment. You can read more about the two options and our reasons for this in the Route Update Report and the Economic and Technical Report available on our website.

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3.2 Your feedback and our response

3.2.1 Complexity and cost of construction

Regarding the northern approach, respondents were concerned about the complexity and cost of construction, particularly the requirement to add two extra tracks (to create four tracks) along the route from Cambridge to Cambridge North, (the West Anglia Main Line (WAML)); and to cross the eight-lane A14 twice, as well as the M11, B1049, A10 and the guided busway. The impact of a complex build on the A14 was also raised by National Highways.

Others suggested that four-tracking isn't needed as much in the north as in the south, as fewer trains would be needed compared to the southern approach to Cambridge, and that they would therefore prefer the northern approach.

There were also suggestions that the technical difficulties associated with the Northern Approach to Cambridge are small in comparison to the embankments planned for the Southern Approach to Cambridge. Respondents said that, in comparison with the northern approach, the Southern Approach to Cambridge is longer, topographically more challenging and includes major infrastructure works (such as embankments and cuttings), which would make it more expensive to build and more likely to exceed the budget.

However others suggested that the Southern Approach to Cambridge would be more economically viable than the northern approach.

Concerns were raised regarding the safety of large underpasses beneath the railway.

There are construction challenges with both options. We are currently exploring opportunities to reduce the need for embankments on the Southern Approach to Cambridge and further details of the proposed design will be provided at the statutory consultation.

Safety is of high importance to EWR and the safety of underpasses will continue to be considered as the design develops. However, there is no reason to suppose that an unsafe methodology is required for any underpass works associated with EWR.

A northern approach is approximately 1km longer than the Southern Approach to Cambridge and so would result in increased journey times.

The design for the northern approach, as presented at the 2021 consultation, required two extra tracks to be built along the existing WAML, making it a four-track railway between the new Milton Junction and Cambridge station. By removing the requirement for EWR services to run at even 15-minute intervals, a design has been developed which does not require four-tracking of the railway between the proposed junction at Milton and Coldham's Lane. There would only be one section of four-tracking in the revised northern approach design which would be between Coldham's Lane and Cambridge station, and it is likely that the new tracks could be accommodated within the existing railway boundary. It is noted that, whist any

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extension of EWR is not currently in the scope of the Project, the more built-up environment between Cambridge North station and Cambridge station, which the revised northern approach would utilise would mean that it would be more difficult to expand the number of tracks in the future. In that regard, the southern approach to Cambridge performs better in that expansion of the railway if needed in the future can be achieved more straightforwardly, whilst capacity north of Cambridge is not constrained further by the introduction of EWR services on lines that are already suffering some congestion.

Although the northern approach presented at the 2021 consultation was expected to be more expensive to build than the southern option, the revised northern approach to Cambridge developed since 2021 is expected to have a lower construction cost than the Southern Approach to Cambridge. This is due to:

- *A reduction in the anticipated amount of four-tracking required to the WAML in Cambridge and therefore reduced infrastructure including removing the need to construct a new bridge over the River Cam, cross the A14 at Milton, and rebuild or modify the A1134, Coldham's Lane and Mill Road bridges.*
- *Reduced land and property take due to the reduced infrastructure.*
- *A reduction in embankments and viaducts between Cambridge and Cambourne.*

It is noted that the revised northern approach is at an earlier stage of the design process than the Southern Approach to Cambridge and is therefore open to a higher level of risk. For example, the revised northern approach has no detailed flood risk surveys. The revised northern approach has therefore been allocated a higher level of risk in the cost estimate – it is more likely that costs will increase and such increases are more likely to be greater.

The extra tracks required on the Southern Approach to Cambridge from the Shepreth Branch Junction to Cambridge station would increase the capacity on this busy section of the railway in line with the expected demand. This would allow the Southern Approach to Cambridge to facilitate an even interval train service which would be more attractive to passengers. Based on current information we believe that it is likely that the additional Southern Approach to Cambridge tracks on the WAML south of Cambridge station could be constructed within existing railway land without the demolition of buildings.

EWR will prepare a Traffic Management Plan (TMP) following consultation with the relevant highway authority or other bodies. The TMP will include measures aimed at maintaining safety for road users and reducing the impacts of construction traffic, such as setting out the timing of traffic management measures. This manages any risk to road users associated with underpass works.

The matters raised above have been considered and would not cause us to change the decision to prefer the Southern Approach to Cambridge. We believe that the Southern Approach to Cambridge would provide greater opportunities to unlock economic growth across the region (related to the Cambridge Biomedical Campus in particular) and would deliver greater overall connectivity, together with greater flexibility to extend EWR services in

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the future. For these reasons, we continue to select the Southern Approach to Cambridge as our preferred approach to Cambridge.

3.2.2 Traction power

Respondents raised concern about the possibility of having to retrospectively install electrification infrastructure.

Respondents suggested that the railway is electrified, which would alleviate concerns regarding air and noise pollution.

It is accepted that retrospectively installing conventional electrification infrastructure would be complex and expensive. No commitment on the traction power type that will be used to operate the new EWR services has yet been made by the Government and conventional electrification, for example a 25kV contact system, is only one of the options being considered.

We are committed to running a sustainable railway in the long term, with reduced emissions, including for carbon, NOx and particulates. Part of our ambition to be a net zero carbon railway includes the use of sustainable traction power in the long term and we are exploring how we can introduce new and emerging technologies to meet this goal.

We recognise that decarbonising the railway could help to mitigate operational air quality and noise impacts however conventional rail electrification is only one of the options being considered to achieve this.

3.2.3 Accessibility

Respondents suggested that there is a need for accessible trains and station design; including CCTV, cycle and scooter storage, step free access, lifts, disabled persons toilets and changing facilities, and retail options.

We recognise the need to ensure access to the whole station, including getting on and off trains, is easy and safe for everyone. New stations would be built to meet industry standards and guidance including the Office for Rail and Road's Accessible travel policy – Guidance for train and station operators" (March 2021). Step free access is one part of the Accessible Travel Policy for designing a station which is accessible and inclusive. Modern lifts with robust proactive maintenance plans would also be installed to provide step-free access in the most appropriate locations at each station.

We are actively considering the end-to-end journey, including how services can connect to existing modes of transport. Provision of facilities to encourage use of active travel modes, including walking, wheeling and cycling, is a key consideration to the customer proposition as station designs are developed, as well as looking at opportunities to improve infrastructure and facilities in and around stations. We are also including the provision of CCTV covered secure cycle parking at each new station.

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We understand that the provision of clean, accessible and inclusive toilet facilities in stations is fundamental to the customer experience. By thinking about all people who will use stations, such as disabled people, including people with visible and non-visible disabilities, or people travelling with children, we will design stations and facilities that are inclusive and accessible including baby changing, gender neutral toilets and Changing Places toilets. This includes making all toilet facilities in stations along the EWR route free to use.

We are considering the potential to create local retail opportunities at stations that are sympathetic to the local environment and address community needs. This includes looking at opportunities to include space for retail to create places where people cancan come to make use of services as well as to travel by train. We are taking all feedback into consideration including feedback from representative groups as to which facilities are best provided at each station to meet customer needs.

Comments received in respect of access for disabled people have been considered and would not cause us re-open the decision to prefer the Southern Approach to Cambridge.

3.2.4 Proposed stations

General concerns were raised about the location of the station at north Cambourne. Respondents were concerned by the suggestion of a station with Cambourne (Knapwell) North station.

Respondents voiced the opinion that a South Cambridge station would alleviate traffic from the central Cambridge station area.

Respondents voiced the opinion that a northern approach aligns much more closely with other major transport routes and also future residential development areas than compared with a southern approach and suggested that forming a multi-modal corridor, using existing transport corridors, would create the opportunity for a station at Longstowe which is a growing town.

Respondents voiced the opinion that a Cambridge South station would serve current residents of Cambourne and that a Cambridge south station would provide a vital improvement for rail travel from Cambridge to London. Respondents also suggested that a Cambridge South station would serve the commuters and aid the growth of the Cambridge Biomedical Campus, Addenbrookes Hospital and the Wellcome Sanger Campus. Respondents commented that Addenbrooke's Biomedical Campus is due to expand in the coming years, therefore the proposed Cambridge South station would allow large numbers of workers to commute.

Respondents also suggested that the proposals include a station at Bassingbourn, which would benefit commuting into Cambridge and London. Respondents also suggested that Barrington New Town station would help fulfil EWR housing objective.

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Respondents suggested that stations along the old Varisty route are reopened e.g. Old North Road station. Respondents suggested that additional station locations south of Cambridge are included within the proposals (e.g. Harston, Milton, Shepreth, Northstowe and a Parkway station south of Cambridge). Suggestions for a northern route included that it should go via, and have stations placed at Oakington, Northstowe, Waterbeach, /Bar Hill and Milton and also serve Cambridge North station. Respondents also suggested that new stations should at Shelford North and Hauxton and that these stations should be served by existing services through these locations as well as EWR services.

Suggestions included a park and ride to connect to EWR at Cambourne station or to combine the Girton station passenger buses.

Respondents shared the opinion that the new community of Northstowe would have much more to gain from a northern route, compared with a southern route. Respondents also suggested that a station at Northstowe is needed as local buses are at capacity and there is still a further 9000 homes to be built. Respondents suggested that the business park in north Cambridge is already served by other transport links.

Respondents suggested that EWR enter Cambridge North station via Northstowe and the science park because the housing development in Northstowe and the commuter/business need to connect the science park.

Respondents suggested that the proposed new train stations are not needed, especially when they are positioned away from the town they are meant to serve e.g. Northstowe. Respondents also raised concerns that there are no effective transport links serving the satellite communities adjacent to a northern alignment.

Respondents were concerned that new stations could require additional land use for car parks and access.

We have considered the number and location of stations along the route. Our preferred Route Alignment 1 (Tempsford variant), includes a station at Cambourne North, approximately 2.5km from the village centre of Knapwell. We have considered a number of factors when assessing the different station location options, including potential housing delivery opportunities at each location, as well as a qualitative assessment of potential housing delivery challenges and housing already committed. Local environmental features and constraints have also been considered. These matters are discussed in the evaluation of Assessment Factor AF 2 for Project Section D in Appendix E of the 2021 Non-Statutory Consultation Technical Report. The evidence reviewed indicates that, on balance, development around the Cambourne North station would require fewer, or less significant, mitigation measures than around Cambourne South.

The revised northern approach would cross over the A14 and A10 but it would not follow existing travel corridors between Cambourne and Cambridge as suggested. This is because aligning the railway to follow the existing road corridors between Cambourne and Cambridge would be likely to have significant impacts on the existing settlements located along these

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routes because it would 'sandwich' these villages between the new railway and the existing dual carriageways.

Further, new residential development north of Cambridge and on the northeastern fringe of the city is already being delivered or planned, whether under the current local development plans or the emerging Greater Cambridge Local Plan. EWR is not required in order for this to come forward.

By comparison, there are particular constraints in the south Cambridge area which are hindering potential economic expansion and growth, including at the Cambridge Biomedical Campus. EWR would help to unlock these constraints and the Southern Approach to Cambridge would be more effective in doing so due to the shorter journey times from the west along with the potential for aneven interval service pattern, which is not feasible under the revised northern approach.

One of the key objectives of EWR is to enable sustainable housing and economic growth. The proposed EWR station locations have been chosen to support the delivery of new housing and help create new jobs along the corridor, as well as helping to ease pressure on the housing market, notably within Cambridge. Consideration has been given to access by suitable road infrastructure, potential demand and viability of adjacent development in choosing station locations. Whilst EWR is not responsible for the new Cambridge South station, the proposed southern approach would stop at the new station (currently under construction). The stop at Cambridge South station would be within walking distance (up to 15 minutes' walk) of more jobs than Cambridge North, which would be served by a northern approach, largely due to Cambridge South station's proximity to the Cambridge Biomedical Campus.

In addition, it would be possible for EWR trains using the Southern Approach to Cambridge to be extended to serve Cambridge North station directly in addition to Cambridge South with relatively minor upgrades to the track and platforms at and near the current station. Conversely, it would not be possible for EWR trains on the revised northern approach to be extended directly to Cambridge South without significant additional works south of Cambridge station. This means that the Southern Approach to Cambridge can provide better connectivity overall, including to all three Cambridge stations.

We agree that a Cambridge South station would be able to serve the Biomedical Campus and that this represents a significant opportunity. EWR services using the revised northern approach would not be able to serve Cambridge South station directly, meaning that passengers would be required to interchange at Cambridge or Cambridge North station if they wished to access Cambridge South station having arrived on a service via a northern approach. This would increase journey times, lead to greater inconvenience and make rail a less attractive option for commuters to Cambridge South station and the Biomedical Campus.

Alternatively, there is the potential option under the revised northern approach to extend the remit of other operators' existing services – i.e. services originating and terminating south of Cambridge would extend via Cambridge North onto a northern alignment of EWR. This would provide the opportunity for a northern option to connect with Cambridge South station.

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However, this would not afford the 4tph service frequency needed to meet the forecasted demand, would have longer journey times to reach Cambridge South station than a southern approach, add greater risk of importing delays from other parts of the network, would constrain timetabling, and would require additional infrastructure and therefore cost.

Accordingly, these matters support the decision to prefer the Southern Approach to Cambridge which would provide higher potential benefits in terms of unlocking growth, better overall connectivity and more flexible options to extend EWR services in the future.

Bassingbourn is on neither the northern or southern routes, and connecting to Bassingbourn would therefore require a significant change in the route alignment or an additional spur from the EWR route. Provision of additional stations along the route would add additional cost and increase journey times. Consequently, we are not proposing to take this suggestion forward.

We are working on local connectivity proposals, with a focus on door-to-door connectivity with stations. Both the Southern Approach to Cambridge and the revised northern approach would be located a significant distance away from any new settlement in the Barrington area which would limit EWR's ability to facilitate new development in this location. Accordingly, this would not be a differentiating matter and would not cause us to re-open the decision to prefer the Southern Approach to Cambridge.

It is noted that the proposed southern option would not preclude additional intermediate stations being opened in the future if considered appropriate.

Consideration has been given to the accessibility to suitable road infrastructure, potential demand and the viability of nearby development in choosing station locations. The evidence reviewed so far suggests that, on balance, development around the Cambourne North station would require fewer, or less significant, mitigation measures than around Cambourne South. There is more available land capable of development to the north of the A428 with fewer constraints such as heritage assets and areas of woodland. Housing development at Cambourne North is expected to be able to retain separation from and between existing settlements such as Papworth Everard, Knapwell and Elsworth, and a site in this area is already identified in the emerging Greater Cambridge Local Plan. In addition a more direct connection could be provided from the A428.

We are continuing to assess detailed designs for the new and upgraded junctions near Hauxton and Shepreth Branch Junction. This includes consideration of both the form i.e. what infrastructure is used, and capacity i.e. how many trains can run, of the junctions. At present, we do not propose that grade-separation will be needed at Shepreth Branch Junction (near Great Shelford) in order to accommodate the new EWR services but consider that grade-separation at Hauxton Junction is required to afford the forecast number of EWR trains without affecting existing services. Nevertheless, we are also continuing to consider the form of the proposed Hauxton junction. We will present selected option at the statutory consultation.

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Whilst the Southern Approach to Cambridge would provide direct connectivity to Cambridge South station, the development of the Cambridge South station itself is a Network Rail scheme and does not form part of the EWR Project. We'll continue to engage with Network Rail as plans for EWR develop. However, the Southern Approach to Cambridge would enable all EWR trains to serve the new station directly which is not the case for a northern approach unless significant additional upgrade works (leading to additional cost and disruption) are carried out to the WAML south of Cambridge station. Accordingly, this matter supports the decision to continue to prefer the Southernthe Southern Approach to Cambridge.

We agree that the business park in north Cambridge is already served by other public transport links, and the area to the north of Cambridge already benefits from good public transport links including the existing WAML, which has a stop at Cambridge North station, the guided busway and local bus services. A northern approach would largely duplicate these instead of complementing them.

Whilst it would be possible for an additional intermediate station to be constructed near Oakington on the northern approach, this would be located a significant distance away from the majority of the new Northstowe development, which is situated to the north of Oakington. Any alignment closer to Northstowe would increase the length of route and consequently journey times to Cambridge. Also, Northstowe is also already served by the guided busway providing direct connections to the Cambridge Science Park, Cambridge North station and the city centre. In any event, any benefits of additional intermediate stations would have to be balanced against the increased journey times for other passengers when Oakington is already well served by public transport.

Housing development at Northstowe is already being delivered and EWR is not required in order to facilitate this. The existing guided busway already provides good public transport links serving the heart of the new settlement, whereas any new EWR station in this area would be located a significant distance away. As stated above, any alignment closer to Northstowe would increase the length of route and consequently journey times to Cambridge. The guided busway also provides more convenient and closer access to the Cambridge Science Park due to the greater distance between the science park and Cambridge North station, where EWR services would call if a northern route were adopted. The guided bus provides frequent services to Cambridge North, the Science Park and Cambridge city centre, and is timetabled to take 12 mins to get to Cambridge North from Northstowe/ Oakington. In this context, EWR services calling at Oakington and then Cambridge North and Cambridge would be duplicating existing public transport, not complementing it.

Both proposed station options in Cambourne would be located close to existing communities. Cambourne North station is separated from Cambourne by the A428 which may slightly reduce connectivity to the existing settlement, compared to Cambourne South, particularly for active travel options such as walking and cycling. However, it is believed that this could be mitigated by a foot and cycle bridge over the A428. The development of first mile/last mile strategies will also be considered for any preferred option to mitigate such matters. This was therefore not considered to be a differentiating factor.

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Whilst a northern approach would allow EWR services to call at Cambridge North, this is also possible using a southern approach subject to relatively minor upgrades to the existing infrastructure at this station.

As far as suggestions for additional stations are concerned, one of the key objectives of EWR is to enable sustainable housing and economic growth. The proposed EWR station locations have been chosen to support the delivery of new housing and help create new jobs along the corridor, as well as helping to ease pressure on the housing market. Based on those criteria, we do not consider Oakington (for Northstowe), Waterbeach, Bar Hill or Milton to be suitable locations for stations. Growth in these areas is already planned or being delivered and EWR would have very little scope to unlock further growth in these areas. Longstowe would be located a significant distance away from the new railway which means that it would not be possible to provide a station here.

Whilst EWR trains could serve Cambridge North, much of the science park is not within a 15 minute walk time from the station. In addition, it would not be possible for EWR services to be extended to serve Cambridge South station and the Biomedical Campus directly. By comparison, the preferred Southern Approach to Cambridge would provide direct connectivity to Cambridge South station and the possibility for services to be extended to Cambridge North subject to relatively minor upgrades to the track and platforms at and near the current station.

The provision of stations at Shelford North or Hauxton would increase journey times and congestion due to trains reducing and gaining speed in and out of these additional stations, on the already busy Royston Branch and WAML lines approaching Cambridge. They are not proposed as part of EWR.

The ability of the new EWR stations to integrate into the wider transport network across all modes – including bus, walking and cycling – has formed a key part of our assessment of both route options and route alignments. We will ensure that public transport connectivity and the ability to use new and improved walking, wheeling and cycling modes are appropriately considered in the development of our station designs. We will continue working with other organisations, including bus operators, to improve facilities, including interfaces and interchange with bus services at stations and provision of onward travel information. Car parking provision will also be considered and will be appropriate for the stations proposed. The land required at stations will be compatible with delivering the station requirements and is expected to be the same for both a northern and southern approach routes. Designs of stations and the areas of land required for provision such as parking will be addressed at the statutory consultation.

3.2.5 Enabling housing growth

Respondents suggested that because there is more affordable property in the north of Cambridge, a northern route should be favoured over a southern route.

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Respondents voiced the opinion that the 20,000 new homes in Northstowe and Waterbeach are being ignored by the proposal for a southern approach.

Concerns were raised that the proposals for a southern route do not take into consideration, or would negatively impact, a number of housing developments currently under construction (i.e. Bourn airfield, Caldecote Highfields and Cambourne West).

There was concern about proposals for Cambourne north station due to this increasing the potential for future housing development within the local area. Respondents raised concerns that a northern approach would encourage further development, which is seen as undesirable.

Respondents shared the opinion that the growing housing developments are putting pressure on A14, M11 and A10, especially during peak hours, and EWR serving northern areas would ease this pressure.

Respondents suggested that a northern approach would benefit the growing population and new housing developments in the north Cambridge area, particularly Northstowe and Oakington, and that a northern approach would support businesses and housing developments north of the city. Concerns were also raised that the southern approach will not serve proposed housing developments in Northstowe.

Respondents were concerned that a northern route risks running through housing developments yet to be built, which contradicts government's new home ambitions.

Enabling housing growth and contributing to transformational growth within the Oxford to Cambridge area is a key part of EWR's purpose. We have considered how the railway might interact with existing housing and current projects and how it might best support future housing development by providing cost-effective, sustainable and accessible public transport options for the residents of new, existing settlements. It is important to note that the railway is also intended to provide new connections for existing settlements, residents and businesses. We are not promoting housing development as part of the Project, and the allocation of land for development is a matter for local planning authorities. Any future development would be brought forward through the normal planning processes, not by EWR. The opportunity to support economic growth in Cambridge, especially near Cambridge South and at the Biomedical Campus, is a key reason why the Southern Approach to Cambridge remains our preferred option, but this would be promoted by other people.

Housing affordability is a significant constraint on growth in Cambridge, especially at the Biomedical Campus. The Southern Approach to Cambridge would provide shorter journey times to Cambridge South from the west and bring more areas – with more affordable housing opportunities – within a reasonable commuting catchment, helping to remove these constraints on growth. Accordingly, thiswould not cause us to change the decision to prefer the Southern Approach to Cambridge which provides higher potential benefits in terms of unlocking growth, better overall connectivity and more flexible options to extend EWR services in the future.

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We are aware of the ongoing development of new homes at Northstowe and Waterbeach and have taken this into account. The Northstowe and Waterbeach developments are expected to be served by existing transport infrastructure, including the guided busway and Waterbeach railway station on the WAML, which together provide direct links to the Cambridge Science Park, Cambridge North station and the city centre. EWR is not needed in order for these developments to come forward and the first phases are already consented or under construction. In addition, it would be possible for EWR trains using a southern approach to be extended to serve Cambridge North station directly subject to relatively minor upgrades to the track and platforms at and near the current station. This would allow passengers to connect easily between the busway and EWR services without having to go into central Cambridge. Accordingly, this matter would not cause us to re-open the decision to prefer the Southern Approach to Cambridge.

The Cambourne to Cambridge (C2C) Better Public Transport Project will provide a busway and and cycle and walking links between Cambourne and Cambridge via the new Bourn Airfield development, a new Travel Hub at Scotland Farm, Hardwick and West Cambridge campus. We would continue to liaise with the C2C promoters so that design interfaces between the schemes can be appropriately managed and opportunities explored. We consider that the two schemes would be complementary: the C2C busway would enter Cambridge from the west, whereas EWR would provide fast and direct connectivity to Cambridge South and the Biomedical Campus and Cambridge station.

We have been monitoring the progress of new and emerging development plans across the area, including in Bedford Borough, Central Bedfordshire and the proposed Greater Cambridge Local Plan. Existing or proposed projects will continue to be considered as part of the EWR assessments. The design aims to reduce and mitigate the impacts on the developments at Bourn Airfield and Highfields Caldecote. The preferred alignment, Route Alignment 1A (Tempsford variant), would only impact the north-eastern corner of the proposed Bourn Airfield development. It is considered most of the development could be delivered unimpeded. Route Alignment 1A (Tempsford variant), which has been identified to allow a station at Tempsford to be served by EWR, would also not directly impact the Cambourne West development. Since the 2021 consultation, the design has been amended to avoid having a direct impact on the Linden Homes development at All Angels Park.

We have considered a number of factors when assessing the different station location options, including potential housing delivery opportunities and challenges. This is discussed in the evaluation of Assessment Factor AF 2 for Project Section D in Appendix E of the Non-Statutory Consultation Technical Report. The evidence reviewed so far suggests that, on balance, development around the Cambourne North station would require fewer, or less significant, mitigation measures than around Cambourne South.

It is to be noted that the allocation of land for development is a matter for local planning authorities. Whilst the location of EWR stations might facilitate this, it is important to note that the railway is also intended to provide new connections for existing settlements, residents

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and businesses – not just future development. Any future projects and developments facilitated by EWR would be required to undertake their own impact assessments.

In any event, it would be possible for EWR services calling at Cambourne North to use both the northern and southern approach routes, so the potential for development to the north or south of the town is not a differentiating factor.

One of EWR's key purposes is to deliver modal shift (both passengers and freight) from the existing road network, including the A14, M11 and A10, to rail. We expect that both alignments would help achieve this objective by offering quick and direct connections to key towns and cities, helping to reduce traffic congestion in and around Cambridge as a result. However, traffic congestion is particularly acute in south Cambridge which is holding back the economic potential of this area and the wider region. The Southern Approach to Cambridge would more effectively address this constraint on growth by connecting to the new station at Cambridge South and therefore providing direct connectivity to the biomedical campus from the west.

A northern approach would directly connect to Cambridge North station, providing connectivity to EWR services for businesses and communities north and north-west of Cambridge. However, these areas are already served by the guided busway which means that a northern approach would be duplicating existing public transport provision. In addition, it would be possible for EWR trains on the Southern Approach to Cambridge to be extended to Cambridge North subject to relatively minor upgrades to the track and platforms at and near the current station. It would not be possible for trains on a northern approach to be extended directly to Cambridge South without significant additional works south of Cambridge station which means that the Southern Approach to Cambridge would provide better connectivity overall, including to all three Cambridge stations.

This matter would not cause us to re-open its decision to prefer the Southern Approach to Cambridge which provides scope for greater connectivity to the new Cambridge South station, unlocking constraints on growth at the Cambridge Biomedical Campus, as well as greater flexibility to extend EWR services further north and east of Cambridge in the future.

3.2.6 General comments about the Southern Approach to Cambridge

Concerns were raised from respondents who stated that the Southern Approach to Cambridge would directly impact 10 villages, whereas the Northern Approach to Cambridge would impact two villages; and that the Southern Approach to Cambridge would not serve proposed new housing development plans.

Concerns said that the Southern Approach to Cambridge would require passengers to change trains at Cambridge station, which respondents felt would increase the likelihood of people continuing to use private vehicles. Respondents also said that the Southern Approach to Cambridge add approximately 50% to the distance into Cambridge, compared with the Southern Approach to Cambridge.

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There were suggestions that the Southern Approach to Cambridge would not integrate as well with transport plans for the East of England as the northern approach.

Suggestions made about the Southern Approach to Cambridge included:

- Extending to Haverhill, to serve three science parks, Haverhill, and a new development east of Linton.
- Extending to Cambridge north.
- Exiting Bedford in a southerly direction.
- Adding new train stations at Wixams and St Neots.
- Avoiding any areas where roads are already congested.
- Using existing infrastructure e.g. re-using the bridge at Long Road and Trumpington.

Suggestions were made that EWR should use the original Cambridge to Oxford Varsity route and/or the Guided Busway.

Respondents said that the topography and flood plains associated with the Northern Approach to Cambridge make the Southern Approach to Cambridge preferable, suggesting that the Southern Approach to Cambridge have fewer adverse impacts on the environment, compared with the Northern Approach.

Respondents voiced support for the Southern Approach to Cambridge for a number of reasons relating to connectivity, highways and traffic:

- It would reduce pressure and congestion on roads - including at Cambourne, and from Milton Keynes, Bedford and St Neots - which would be beneficial to commuters.
- It would provide opportunities for developing sustainable transport options in South Cambridge.
- It would help to facilitate the A10 Harston and Foxton bypass and the reopening of Harston station.
- It would allow more direct links to a larger rail network without reversal, including Ely, East Anglia, Norwich, Newmarket, Bury St Edmunds, Ipswich, Great Yarmouth and eastern ports.
- It would serve as the best connection to Cambourne, and would provide better links. for other southern villages, who have less access to modes of public transport.
- It would complement the recently opened park-and-ride in Trumpington.
- It would improve connectivity in the area including to facilities including shops, visitor services and local schools.
- It would not adversely impact the A14 and guided busway, compared with the northern approach.
- It would be comparatively easier to traverse roads.
- It would provide direct access from Bedford to Addenbrooke’s Hospital and new employment growth areas of Cambridge.

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There were also a range of opinions expressed that the Southern Approach to Cambridge would be better for the environment than the northern approach, including:

- It would have fewer adverse visual impacts on the landscape compared with the Northern Approach to Cambridge.
- As it does not traverse an AONB, the benefits would outweigh adverse impacts.
- It makes provision for the development of wildlife-friendly areas and corridors throughout Cambridgeshire.

The following reasons relating to community impacts and benefits of the Southern Approach to Cambridge were also cited:

- Fewer homes would need to be acquired and fewer villages would be impacted, compared with the northern approach, and it would support the delivery of new homes.
- It would benefit areas north of Cambridge, including the areas of Dry Drayton and Madingley, not just those to the south.
- It would be the least disruptive option to residents in Cambridgeshire.
- It would provide more employment opportunities, particularly for disabled people, and younger people.

Economic and business benefits cited, included:

- It would serve the regional Addenbrookes Hospital and Royal Papworth Hospital and would also provide more direct links to Bedford Hospital.
- It would provide links between the universities in Cambridge, and also provides a more direct connection to the Oxford universities.
- It would support the new Astra Zeneca and biomedical campus.
- It would support existing employers and commuters (e.g. biomedical campus, hospitals).
- It would serve the 'Golden Triangle' of distribution parks (e.g. Daventry).

Other reasons voiced for supporting the Southern Approach to Cambridge included:

- It would be better for freight than the Northern Approach to Cambridge.
- It crosses the River Cam as far upstream as possible, which makes it preferable to the Northern Approach to Cambridge.
- It would provide the shortest, most efficient, most carbon friendly and economically viable option, compared with the Northern Approach to Cambridge.
- It aligns with the overall objectives of EWR.
- It would be more economically viable than the Northern Approach to Cambridge.
- It would be more viable from operational and engineering perspectives than the Northern Approach to Cambridge.
- It would have less impact than the northern route on the Mullard Radio Astronomy Observatory during construction.

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Both the NATC and the SATC would pass by various settlements in Cambridgeshire between the new Cambourne station and the point at which they join the existing rail network near Cambridge (near Milton and Hauxton respectively). Both would also involve works in the built-up area of Cambridge itself and the new EWR trains would also run through the built-up area, although the NATC would have a greater length in the built-up area than the SATC.

The number of properties within 500 metres of the NATC and SATC (between the Cambourne and Cambridge stations) would be broadly similar overall although, as set out in Appendix F of the Non-Statutory Consultation Technical Report, there would be more properties within 200m of the NATC alignment compared to the SATC i.e. more properties are located closer to the NATC. EWR Co considers that the impacts on Community would be broadly neutral.

It is important to note that the works needed to deliver the NATC would require the closure of, and replacement diversion for, Fen Road level crossing, which would have the potential for impacts on the established traveller community in this area. Whilst we consider it to be possible to provide mitigation measures (such as by constructing a replacement road access for the community), EWR Co notes that it is possible to avoid these impacts arising in the first place. The SATC avoids these impacts on the traveller community.

Enabling housing growth and contributing to transformational growth is a key part of EWR's purpose. In addition to considering how EWR might best support future housing development by providing cost-effective, sustainable and accessible public transport options for new residents and settlements, we also considered how the railway might interact with existing housing and current residential development projects. The proposed EWR station at Cambourne could provide connections to new housing development allocated to the west of Cambourne and to the east at Bourn Airfield in the adopted South Cambridge Local Plan and the emerging Greater Cambridge Local Plan.

Developments at Northstowe, Waterbeach, Northeast Cambridge and Cambridge Airport are already planned or under construction and EWR is not necessary in order for these to come forward. The Southern Approach to Cambridge would enable all EWR trains to call at the new Cambridge South station directly, helping to unlock particular constraints on growth at this vital location.

Both southern and northern approaches would provide direct connections to Cambridge station and would be expected to help reduce the use of private cars. However, the northern route is approximately 1km longer than the Southern Approach to Cambridge and so would have increased journey times.

We understand the importance of EWR complementing other local transport projects and infrastructure without duplicating them, and we will continue to consider local and national plans and other transport projects across the area during the design process. The extent to which the approach to Cambridge options afford future expansion of EWR has been considered as well as how the new railway might align with other transport plans for the region. A northern approach would not perform as well as the Southern Approach to

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Cambridge due to the envisaged challenges regarding extending EWR further east in the future which is an aspiration of many local authorities and stakeholders in the East of England.

Another key purpose of EWR is to connect communities between Oxford and Cambridge with jobs, education and opportunities. The proposed EWR station locations have been chosen to support the delivery of new housing and help create new jobs along the corridor, as well as helping to ease pressure on the housing market. There are no stations proposed as part of the Southern Approach to Cambridge between Cambourne and Cambridge South. Whilst there is not considered to be sufficient demand at other locations on the Southern Approach to Cambridge routes to justify an additional station stop in terms of cost and additional journey time, the Southern Approach to Cambridge design does not preclude the possible construction of additional stations at a future time. Accordingly, this matter would not cause us to re-open the decision to prefer the Southern Approach to Cambridge which still provides better overall connectivity, greater scope to unlock economic growth across the region and provides more flexibility to extend EWR services in the future.

The Southern Approach to Cambridge which we are proposing will not preclude future extensions of services to other destinations, although it is noted that Haverhill is not connected to the current rail network which means that additional infrastructure would be required in order to provide new rail services there.

Based on current designs for the Southern Approach to Cambridge, EWR services would terminate at Cambridge station, but the design would not preclude future extensions to Cambridge North station subject to relatively minor upgrades to the track and platforms at and near the current station. This would allow EWR trains to serve all three Cambridge stations directly.

How EWR leaves Bedford is discussed in that section of this report. Route options passing to the south of Bedford were considered before the selection of a preferred route option in 2020. It was found that these routes have a significant number of sensitive or complex environmental constraints which are likely to be difficult and expensive to overcome, including either demolition of homes and commercial property in Wixams or crossing the former landfill site at Elstow. Bearing in mind the consultation feedback received, we have also revisited the case for promoting a route alignment to the south of Bedford in since close of the non-statutory consultation as part of the Economic and Technical Report – you can read about this in Economic Technical Report. We considered scheme options potentially including a station such as a Bedford South parkway. We found that when compared to central Bedford station locations, a Bedford South parkway station would not provide the same benefits from connection to existing population centres, nor would it enable a level of future housing growth and development that would be sufficient to outweigh the benefits of connectivity achieved by serving existing population centres. We are working on local connectivity proposals, with a focus on first/last mile travel to and from stations and will consider how we can enable access to EWR stations from Wixams. This could potentially be through cycle, bus or pedestrian links to an EWR station in the Stewartby area to the west of the new settlement. The alignment in the Bedford area would not dictate the selection of either the revised northern approach or the Southern Approach to Cambridge. This is not a differentiating consideration and,

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accordingly, this matter has been considered and it would not cause us to change the decision to prefer the Southern Approach to Cambridge.

Route options passing to the south of Bedford were considered before the selection of a preferred route option in 2020. It was found that these routes have a significant number of sensitive or complex environmental constraints which are likely to be difficult and expensive to overcome, including either demolition of homes and commercial property in Wixams or crossing the former landfill site at Elstow. Bearing in mind the consultation feedback received, we have also revisited the case for promoting a route alignment to the south of Bedford in since close of the non-statutory consultation as part of the Economic and Technical Report – you can read about this in Economic Technical Report. We considered scheme options potentially including a station such as a Bedford South Parkway. We found that when compared to central Bedford station locations, a Bedford South parkway station would not provide the same benefits from connection to existing population centres, nor would it enable a level of future housing growth and development that would be sufficient to outweigh the benefits of connectivity achieved by serving existing population centres. We are working on local connectivity proposals, with a focus on first/last mile travel to and from stations and will consider how we can enable access to EWR stations from Wixams.

One of the key objectives of EWR is to enable sustainable housing and economic growth. The proposed EWR station locations have been chosen to support the delivery of new housing and help create new jobs along the corridor, as well as helping to ease some of the upwards pressure on the housing market. The majority of land within St Neots already contains housing and businesses and much of the land neighbouring the eastern side of the town is either already committed or allocated for future development. Therefore, our ability to support housing growth would be more effectively realised by constructing a new station between St Neots and Sandy rather than using the current station. The ECML is at close to capacity and routing EWR through St Neots station, which is implicit in the use of the original Varsity Line alignment, would increase the route length of EWR, thereby increasing cost and journey times. A St Neots south station was included in a number of alignments consulted on for the 2021 consultation. However, our preferred alignment is Alignment 1 incorporating a localised variation to serve a station at Tempsford, where there is greater potential for development to support the development of a higher quality new settlement than a new station further north at St Neots South. This localised variation of Alignment 1 better achieves the Project objectives and will therefore be taken forward as our preferred route for further design development and assessment.

We are seeking to maintain existing highway connections wherever feasible, including in the Harston area. Where it is not feasible to retain existing highways in their current location, we will ensure that a suitable alternative is available which maintains connectivity, whilst minimising the impact on communities. As far as the Long Road bridge in Cambridge is concerned, we currently anticipate that this will need to be replaced to accommodate the extra pair of tracks needed on the WAML between the Shepreth Branch junction and Cambridge station. The existing two-track bridge does not have the space to accommodate the additional tracks.

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As part of the ACP, we reviewed the potential to follow the Varsity Line through Bedfordshire and Cambridgeshire. Further information can be found in the Economic and Technical Report. Although a shorter route overall, it would not serve Cambourne and would not be in areas where housing growth is likely, it would result in challenging environmental issues associated with reopening the disused railway, and would deliver significantly fewer benefits than the current preferred alignment - Route Alignment 1 (including a localised variation to serve a station at Tempsford, which you can read about further in this report).

As detailed, we have considered the impact of the Project on existing highways, PRoW and private access roads as part of the design and assessment of route alignment options, and we are seeking to maintain existing highway connections wherever feasible. Traffic congestion is an issue throughout the Cambridge area. Current and proposed public transport solutions would not overcome this issue which is constraining growth, including at the important Cambridge Biomedical Campus. EWR would help to overcome this by providing a reliable, fast and frequent public transport link to the new Cambridge South station. The Southern Approach to Cambridge would provide a connection to Astra Zeneca, Addenbrookes Hospital and Royal Papworth Hospital at the Cambridge Biomedical Campus. Both northern and southern route options provide connections to Bedford Hospital and Cambridge and Oxford university facilities and equal connections towards the 'Golden Triangle' of distribution parks.

It is considered that EWR complements existing railway services and other local transport systems including the guided busway and park and ride. The purpose of EWR is to enhance connectivity across the Oxford to Cambridge area as a whole, connecting key towns and cities. As part of this, EWR provides a fast and direct connection to Cambridge. Use of the busway route for EWR services would significantly undermine current public transport provision between Cambridge, St Ives and Huntingdon, reduce local connectivity and lead to a significant reduction in service frequency, including to the new development at Northstowe. We took into account the potential for the new railway to affect the Mullard Radio Astronomy Observatory (MRAO) in the development of potential alignments. We are in ongoing discussions with MRAO/ University of Cambridge to understand how impact to the observatory can be avoided or reduced for the Southern Approach to Cambridge and, if unavoidable, mitigated. More information on how we plan to mitigate potential impacts on the observatory will be provided at the statutory consultation.

In relation to AONBs, neither option would be located within areas designated as AONBs. Regarding embodied carbon, due to the greater length of viaduct and embankments required in the Northern Approach to Cambridge design presented within Appendix F of the Non-Statutory Consultation Technical Report, the Northern Approach to Cambridge would have greater embodied carbon and require far more imported materials than the Southern Approach to Cambridge. However, the updated Northern Approach to Cambridge design has reduced bridge and embankment works and reduced works within Cambridge and the Southern Approach to Cambridge is now expected to include a greater volume of earthworks than the Northern Approach to Cambridge. This would mean that the revised Northern Approach to Cambridge design would represent an improvement compared to the Southern Approach to Cambridge in terms of overall embodied carbon.

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We agree that the topography of the land north and northwest of Cambridge through which a northern approach would be constructed presents challenges, especially because of the extent of floodplain. As the detailed design is developed further, EWR Co will be undertaking a comprehensive flood risk assessment in accordance with the relevant standards for an infrastructure Project like EWR. This will take account of this type of potential flooding impact. The preferred Southern Approach to Cambridge would avoid these areas and avoid potential impacts to the A14 and guided busway. Based on the design presented at the 2021 consultation, we concluded that, in terms of the environment, the revised northern approach to Cambridge would not be likely to perform materially better than the Southern Approach to Cambridge. However, the revised northern approach has lowered the alignment through the countryside and reduced works, associated demolitions, and potential impact on environmental features including priority habitat and open green space within Cambridge. For environmental impacts and opportunities, the revised northern approach design would be expected to be a minor improvement compared to the Southern Approach to Cambridge. However, we do not consider that even having taken account of this minor improvement, the environmental benefits or reduction in adverse effects would outweigh the greater opportunities afforded by the Southern Approach to Cambridge. This would provide higher potential benefits in terms of unlocking growth, better overall connectivity and more flexible options to extend EWR services in the future. This means that the Southern Approach to Cambridge remains the preferred option.

Regarding the comment that the route crosses the River Cam as far upstream as possible, which makes the Southern Approach to Cambridge preferable to the revised northern approach, in this regard as the River Cam flows north east out of Cambridge and the location of the proposed crossing point has been designed to best meet the Project objectives, whilst minimising impact on the river.

3.2.7 General comments about the northern approach

Concerns were raised that the northern approach to Cambridge would not meet aims of serving Cambridge South station and that it would not connect directly to Cambridge Biomedical Campus. Respondents were also worried that the northern approach to Cambridge would take longer to construct than the Southern Approach to Cambridge.

Respondents were concerned about the possible inclusion of a chord to the Newmarket line.

Concerns were raised that the northern route may impact the reopening of other train routes in Cambridge such as March and Wisbech. Respondents said that EWR trains using the Northern Approach to Cambridge would use the paths required for other trains between Cambridge North and Cambridge possibly preventing the planned Wisbech trains from being accommodated.

Respondents raised concerns that there are more genuine challenges for constructing the northern approach compared with the Southern Approach to Cambridge.

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Concern was expressed that a much higher number of properties, businesses and people would be affected with the northern approach.

Alternative suggestions for the route of the Northern Approach to Cambridge included:

- After the new Cambourne station, joining the existing mainline north of the City and linking to the London rail network at Cambridge north.
- Entering Cambridge from the north through Madingley and Oakington then travel South towards Hardwick and Comberton. Then travelling east towards Barton, aligned with the M11 towards Hauxton and join the existing line at Little Shelford.
- Going over the M11 to enable a shorter and more direct route.
- Including a spur south of Waterbeach to enable freight traffic to avoid Cambridge.
- Considering the alignment that passes through Shepreth and Sandy.

Reasons voiced for supporting the Northern Approach to Cambridge included:

- It would be shorter than the Southern Approach to Cambridge and would also avoid cutting through a number of villages.
- That the flatter land north of Cambridge would be preferable for railway construction compared with the south.
- That travelling via Cambourne would avoid impacts on housing and countryside, would serve more people and be less disruptive than the Southern Approach to Cambridge.
- There are fewer road and river crossings, as well as fewer A and minor roads, which would result in less traffic.
- Existing transport links – in particular the guided busway - do not meet the high demand from passengers north of Cambridge, especially for peak hour commuters, and that EWR would help meet this demand.
- It would support the growth in the north of Cambridge.
- Cambridge North station is quieter and has more spare capacity in comparison to Cambridge station/the Kings Cross line.
- A Cambourne north station would be easier to connect with Cambridge north, where there are relatively more people who want to commute into Cambridge.
- It would serve the new Cambridge North station, which would justify the recent investment in the station.
- It would be closer to the junction for the Newmarket, Ipswich and Felixstowe line north of the existing Cambridge City station, which would cause less rail traffic on the London to Cambridge lines and facilitate freight traffic to and from Felixstowe.

Respondents voiced the opinion that Route Alignment 1, but with a northern approach into Cambridge, should be the preferred alignment.

Respondents suggested that the northern route impacts seven times fewer local residents that are within 200m of the proposed alignments.

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Respondents suggested that the northern approach to Cambridge traverses a less densely populated area compared with the southern approach and would therefore impact fewer residential properties.

A northern approach would not allow services from EWR to call at Cambridge South station directly and it would therefore not provide direct connectivity to the Biomedical Campus. Passengers would be required to change services at Cambridge North or Cambridge station in order to access Cambridge South station which would increase journey times and inconvenience. By comparison, the Southern Approach to Cambridge would provide direct connectivity to Cambridge South station and Cambridge station as well as having the potential for EWR services to be extended to Cambridge North subject to relatively minor upgrades to the track and platforms at and near the current station.

The northern approach design presented at the 2021 consultation was expected to take longer to build than the Southern Approach to Cambridge. Now that the Northern Approach to Cambridge design has been revised, it is expected that the overall programme for the Northern Approach to Cambridge and the Southern Approach to Cambridge to be similar.

The proposed design for the Northern Approach to Cambridge does not include a chord onto the Newmarket line. This would be expensive and difficult to construct and also require the acquisition of common land. By comparison, the Southern Approach to Cambridge would allow services to access the Newmarket line without this chord being constructed.

We have assessed potential impacts to other train services if EWR were to approach Cambridge from the North. Whilst both the Northern Approach to Cambridge and Southern Approach to Cambridge would not preclude other services being introduced between Cambridge, Cambridge North and points further north, the greater number of trains (EWR and non-EWR) utilising this stretch of the WAML if the Northern Approach to Cambridge is selected means that there would be a risk of adverse performance impacts. By comparison, the Southern Approach to Cambridge offers far greater flexibility for EWR services to be extended north and east of Cambridge in the future, including the potential for direct connectivity to Wisbech. It is to be noted that there would be a need for the provision of additional infrastructure elsewhere on the existing rail network to allow extension of services. This does not fall within the current scope of the EWR Project.

We acknowledge that building a new railway would bring its challenges. As respondents have highlighted, there are a number of construction related challenges that are associated with the revised northern approach design (as described earlier) still requires crossing of flood plains between Cambridge and Cambourne, crossing the eight lane A14 at Girton, closure of the Chesterton and Milton Fen level crossings, crossing the A10, and crossing the guided busway. The decision to continue to prefer the Southern Approach to Cambridge avoids these issues associated with the Northern Approach to Cambridge.

As mentioned, we are considering potential impacts on the community and how to reduce or mitigate disruption to local people, communities and the environment and how to avoid significant adverse impacts on health and quality of life. The amount of expected property

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demolition in central Cambridge that would be needed for a northern approach has been reduced to zero compared to the design presented as the 2021 consultation, which envisaged the demolition of 40 – 85 properties. It is noted that 3,800 properties would be within 200m of the Southern Approach to Cambridge, whereas 4,600 would be within 200m of a northern approach.

To connect EWR to the existing line both north and south of Cambridge would greatly increase the overall cost and environmental impact of the Project. We have considered this and this matter would not cause us to change decision to prefer the Southern Approach to Cambridge.

A connecting spur near Waterbeach has been considered as part of our assessment of a potential Northern Approach to Cambridge, but a northern approach would not enable existing freight services in the Cambridge area to continue to operate as they currently do. The Southern Approach to Cambridge remains our preferred option because it offers greater scope to unlock growth in Cambridge and facilitate future extension of EWR services north and east of Cambridge.

As mentioned, as part of the ACP we reviewed the potential for alignments following the route of the decommissioned Varsity Line, which passed through Sandy. Following this review, it was concluded that passing through Sandy would be particularly difficult, disruptive and expensive because the route of the former railway has been built over in part. A significant diversion to the south would be required for the preferred alignment to pass through Shrepreth, increasing the alignment's length and journey time. Accordingly, EWR will not pass through Shepreth or Sandy.

At previous consultations in 2019 and 2021 and as part of the ACP, we have undertaken assessments of accessing Cambridge from the north. We continue to consider that approaching Cambridge from the south is the preferred option. This is because it provides significantly higher benefits in terms of the core requirements of EWR for increasing connectivity, providing direct connectivity to the Cambridge Biomedical Campus and unlocking growth.

In developing our proposals, we have aimed to minimise the negative impact the Project may have on communities and in particular people's homes. However, inevitably with an infrastructure Project of this size, there will be some people who could be directly affected. We'll continue to work to mitigate any impacts we cannot avoid and work closely with people who could be affected.

The revised northern approach design would be expected to perform comparably in terms of community impacts than the Southern Approach to Cambridge due to the closer proximity of the route to communities. We have considered this and this matter would not alter our decision to prefer the Southern Approach to Cambridge.

Regarding the suggestion that a route that goes over the M11 would enable a shorter and more direct route, it is noted that, whilst this may be shorter and more direct, our studies show that a route that took this alignment would have significant impacts on properties in

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Trumpington and other transport infrastructure, including the existing guided busway to enable it to connect to Cambridge station. As such, it does not meet the Project objectives as well as the proposed southern approach.

3.2.8 Roads and traffic

Respondents requested clarity on which roads may be closed as a result of a southern alignment and raised concerns that the closure or diversion of local roads associated with the southern alignment will adversely impact cyclists.

Respondents shared the opinion that a Cambourne North station would relieve pressure on commuter routes between Cambourne and north Cambridge and Science Park. Respondents also commented that a northern approach will reduce congestion and vehicles in the city and that a station close to Longstowe will reduce road traffic.

Respondents voiced the opinion that traffic would be reduced on the A14, A428, M11 and A10 if a northern alignment was chosen. Respondents shared the opinion that Cambourne North, Northstowe/Waterbeach would reduce congestion on the A10, A14 and A428. Respondents suggested that the route should go north of Cambridge and come in from Cambourne to Cambridge North, to help with traffic issues on the north side of Cambridge. National Highways suggested that a transport assessments would be required to understand the implication of the proposed route on the developments in this area.

Respondents raised concerns that the adverse impacts of a southern route on community connectivity (e.g. Harston) may result in more traffic on the already congested A10 and London Road.

Respondents suggested that a large number of residents will be less reliant on private vehicles and will therefore result in less traffic disruption if a northern alignment was chosen.

Concerns were raised that the northern route crossing of the 8 lane A14 twice, M11, B1049, A10 and guided busway would cause significant impact to the road traffic system, including congestion and road closures.

Respondents suggested that a northern alignment would serve the Cambridge Science Park, the Cambridge Business Centre and St Johns Innovation Centre, as well as other employment centres. Benefits would include directly connecting these centres to Oxford, serving commuters and taking traffic from the A428 and A14.

Concerns raised that road infrastructure that is in place to support the new train stations is not sufficient.

Respondents raised concerns that there will be an adverse impact on small village roads due to congestion from heavy traffic accessing station car parks. There was concern that new stations (e.g. Cambourne) would overwhelm the local road systems with congestion.

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Respondents were concerned that running the route through the A10 will increase the risk of accidents. Concerns were raised about disruption to villagers in Newton due to increased traffic.

We have considered the impact of the Project on existing highways as part of the design and assessment of route alignment options. We are seeking to maintain existing highway connections wherever feasible, including in the Harston area. Where it is not feasible to retain existing highway in their current location, we will ensure that a suitable alternative is available which minimises the impact on communities.

Appendix F of the Non-Statutory Consultation Technical Report stated that the two approaches interact with more-or-less the same number of road crossings. Works are planned for a number of roads within the Southern Approach to Cambridge area which may require some temporary road closures, however, access will be maintained to the communities on route.

We will prepare a Transport Assessment (TA) to consider the impact on the strategic and local highway networks, road safety, and local sustainable modes of transport, including public transport. It will also set out the impact of construction on the road network, including changes to existing traffic patterns because of predicted construction traffic, including to the A10 and London Road. During the preparation of this assessment, mitigation requirements may be identified and incorporated into the proposals. However, the decision to continue to prefer the Southern Approach to Cambridge means that no new stations or car parks are proposed in the area north and northwest of Cambridge and impacts in this location will be avoided.

Outcomes of this assessment will be reported in the PEIR published at statutory consultation and the Environmental Statement (ES) submitted as part of the DCO application. Following consultation with all the relevant highway authority or other bodies, we will prepare a Traffic Management Plan (TMP) that includes measures aimed at maintaining safety for road users and reducing the impacts of construction traffic.

However, potential impacts in this area and on these specific roads arising from a southern approach would not in themselves cause us to re-open the decision to prefer the Southern Approach to Cambridge which provides better overall connectivity, greater scope to unlock economic growth across the region and provides more flexibility to extend EWR services in the future.

We will maintain existing cycle ways, designed to the applicable national standards. As described in section 4.2.5 of Consultation Technical Report, we will consult in more detail on proposals for individual highways at the statutory consultations, which we expect to take place in the first half of 2024.

Longstowe is a small village located south-west of Cambourne. It would not be possible to provide an additional station close to this settlement unless a significantly different alignment through south Cambridgeshire is selected between the East Coast Main Line and Cambridge,

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but this would not perform as well overall compared to our preference for RA1 – Tempsford Variant.

Our aim is to deliver modal shift (both passengers and freight) from the existing road network, including the A10, A14, M11 and A428. Both the revised northern approach and the SATC the Southern Approach to Cambridge could enable the new EWR trains calling at Cambourne to serve Cambridge North station, which is the closest station to the Cambridge Science Park, and could therefore assist in reducing traffic congestion in this area (subject to relatively minor upgrades to the track and platforms at and near the current station).

The Northern Approach to Cambridge would provide direct connectivity between a new station at Cambourne North and the existing Cambridge North and Cambridge stations. However, it would not be possible for EWR trains from Cambourne to continue directly to Waterbeach unless they either by-pass Cambridge city centre altogether or reverse en route. This would introduce additional operational complexity, increase performance risk and extend journey times. A potential station at Oakington has been considered for the Northern Approach to Cambridge which might assist in reducing traffic congestion on local roads, although this would be located a significant distance away from the majority of the Northstowe development and would be less convenient that the guided busway services which can serve the new town directly.

Traffic congestion is a particular issue for Cambridge and has increased dramatically in the last decade. We expect that both alignments could offer an opportunity to reduce traffic congestion by offering quick and direct connections to key towns and cities, helping to reduce traffic congestion in and around Cambridge as a result and therefore help to reduce CO2 emissions.

There is at present no committed public transport solution in place or planned which would fully resolve the current transport constraints and facilitate the intensification of the Biomedical Campus site as sought in the emerging Greater Cambridge Local Plan, which specifically recognises that the opportunities provided by the new Cambridge South station to enhance public transport access must be maximised. By comparison, the north Cambridge area has convenient access to the A14 dual carriageway and is already served directly by the guided busway and local bus routes, including from the Milton Park & Ride site.

This means the Southern Approach to Cambridge is more likely to unlock this constraint on growth and expansion by allowing all EWR trains to serve the new Cambridge South station and the Biomedical Campus directly. This would make rail an attractive alternative to the car and help to alleviate traffic across the wider road network. This would not be possible using a northern approach unless significant additional infrastructure upgrades to the West Anglia Main Line south of Cambridge station are carried out, causing significant additional cost and disruption. By comparison, it would be possible to extend EWR services using a southern approach to Cambridge North subject to relatively minor upgrades to the track and platforms at and near the current station.

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Traffic and the potential for congestion around stations is expected to be broadly similar for all station location options on both the Northern Approach to Cambridge and Southern Approach to Cambridge and will be further examined at the next stage of design.

We acknowledge that a northern approach to Cambridge would mean crossing the A10, north of Milton. The decision to continue to prefer the Southern Approach to Cambridge means that this interaction will be avoided.

We have considered safety of the public and workers at all stages of design, and this will continue during construction and into operation and maintenance. The safety of workers, road users, non-motorised users (NMUs), supply chain and local people has been prioritised sothat risks are identified and reduced wherever possible. During construction, we would ensure that health, safety and wellbeing performance meets or exceeds minimum legal requirements and industry best practise.

We are committed to ensuring so far as reasonably practicable that the Project is able to mitigate disruption during its planning, construction and operation. We would continue to consider the impact of planned work as the Project progresses and work with affected communities and their representatives to ensure people impacted by the work are kept up to date with activity and progress. We are considering potential impacts on the community and how to reduce or mitigate disruption to local people, communities and the environment and how to avoid significant adverse impacts on health and quality of life.

3.2.9 Journey times

Respondents shared the opinion that the Northern Approach to Cambridge (Cambourne Waterbeach link) is 12km shorter than the Southern Approach to Cambridge and would allow for shorter journey times, whilst others suggested that the Southern Approach to Cambridge allow for quicker journey times. Respondents suggested that quicker travel times, under a northern approach would reduce CO2 emissions.

Respondents suggested that a northern route would provide quicker commuter options and reduce journey times as a whole. Respondents also suggested that the journey time for the northern route would be reduced if a station at Oakington is removed.

Concerns were raised regarding the possibility of increased journey times due to the Project, including journey times to Cambridge South.

Respondents suggested that a shorter journey time from St Neots to Cambourne to Cambridge should be preferred.

Respondents suggested that proposals should allow trains to travel fast enough to compete with time taken to drive equivalent journeys. Respondents were concerned that the route is not direct enough to encourage people to use the trains.

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Respondents suggested that linking a station north of Cambourne to Cambridge North station appears to offer a direct and less disruptive route in comparison to the proposed southern routes.

Respondents raised concerns that the northern route may discourage people from using the line e.g. to the Biomedical campus if it's a longer journey time.

Concerns were raised that a northern approach would be too convoluted and would not encourage people to stop using their car for local journeys e.g. from Cambourne to Addenbrookes or Cambridge sixth form college (*Long Road Sixth Form College*) on Long Road.

We agree that attractive journey times are important in encouraging people to use the new rail services. EWR would offer an alternative form of transport compared to travelling by car which would help to ease congestion on busy parts of the road network, such as between Bedford and Cambridge. Currently, due to heavy congestion in and around Cambridge, it can take up to 100 minutes to travel from Bedford to Cambridge via car at rush hour, whereas EWR is expected to reduce this journey time to around 30 minutes, therefore offering a significant journey time saving and making rail a feasible alternative to the private car. Journey times between Cambourne and Cambridge South station would be only 11-12 minutes; the Southern Approach to Cambridge would provide faster journey times directly to the new Cambridge South station and the Biomedical Campus than the Northern Approach to Cambridge. However, regarding journey times and CO2, we do not consider that operational emissions are likely to be a differentiating factor in the selection of the alignment.

Measuring from Cambourne to Cambridge station, the Southern Approach to Cambridge is slightly shorter than the Northern Approach to Cambridge route by approximately 1km and would have shorter journey times as a result.

The Northern Approach to Cambridge would not allow EWR services to connect directly to Waterbeach station unless they either bypassed Cambridge altogether or reversed en route which would increase operational complexity, increase performance risk and use up additional platform and track capacity. Accordingly, this matter would not cause us to re-open the decision to prefer the Southern Approach to Cambridge which provides higher potential benefits in terms of unlocking growth, better overall connectivity and more flexible options to extend EWR services in the future.

It would not be possible for EWR trains using a northern approach to serve the new Cambridge South station – adjacent to the Biomedical Campus – directly without significant additional infrastructure upgrades to the WAML south of Cambridge station. This means that passengers would have to change trains which would increase inconvenience, extend journey times and undermine the transport user and economic benefits of the Project. By comparison, via the Southern Approach to Cambridge EWR trains could be extended to serve Cambridge North subject to relatively minor upgrades to the track and platforms at and near the current station. Both the Northern Approach to Cambridge and Southern Approach to Cambridge would have a station located North of Cambourne which means that this is not a differentiating factor.

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We have considered how the revised northern approach and Southern Approach to Cambridge performed in terms of short distance connectivity to support commuting travel into key employment hubs. Both routes would provide direct connectivity between housing centres and employment hubs. However, Cambridge South has more jobs within a 15-minute walking distance than Cambridge North.

The need for passengers to change trains to access Cambridge South would cause greater inconvenience and mean that journey times are further extended compared to the Southern Approach to Cambridge.

By comparison, EWR trains using a southern approach could be extended to Cambridge North station – calling at all three stations in the Cambridge built-up area – subject to relatively minor upgrades to the track and platforms at and near the current station. We consider that the Southern Approach to Cambridge is preferable and more advantageous than the Northern Approach to Cambridge in this regard.

We agree that stopping at a potential Oakington station would increase journey times. A new station at Northstowe/Oakington is considered as a potential option which would have needed further investigation should a Northern Approach to Cambridge have been chosen as the preferred option.

We are designing the railway to have a journey time of less than 100 minutes from Oxford to Cambridge, which is quicker than by car. Shorter journeys would also be significantly faster using EWR services. For example, at rush hour it can take over an hour to travel from Cambourne to Cambridge. EWR would reduce this to less than 15 minutes and the journey time to the new Cambridge South station would be even shorter than this via the preferred Southern Approach to Cambridge. The design for both options has been developed while taking account of the local context including topography, geology and environment factors, and this new section of railway between Bedford and Cambridge will be capable of running trains up to a maximum of 100mph.

Based on current timetable modelling, the journey time from St Neots/Tempsford and Cambourne to Cambridge station would be one minute longer via the revised northern approach than Southern Approach to Cambridge. Journey times to the new Cambridge South station would be significantly faster with the Southern Approach to Cambridge enabling all EWR trains to call here and serve the Biomedical Campus directly, which would not be possible utilising the revised northern approach unless significant additional infrastructure works are carried out.

EWR trains using a southern approach could also be extended to serve Cambridge North station directly subject to relatively minor upgrades to the track and platforms at and near the current station. We have considered this and this matter supports the decision to prefer the Southern Approach to Cambridge.

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3.2.10 Integration with existing transport infrastructure

Respondents suggested that a northern route could be used with existing travel corridors, enabling EWR to connect with other routes, including A505 and along the WAML and run parallel to A421/A428/A14. It is suggested this would have less social impact in comparison to the rural communities.

Respondents suggested EWR should follow the existing travel corridor of A428 as the cost would be similar but would involve less disturbance to the current transport system and to the environment, when compared with the proposed southern alignments.

Respondents suggested that a northerly route would be able to connect EWR to other parts of the national rail networks, without needing to travel to London first. This includes some trains travelling to Norwich, Ipswich and Felixstowe and Stansted. Respondents also suggested that a northern route would give more flexibility as it would allow some trains to carry on to Norwich, Ipswich and Felixstowe and others to carry on south from Cambridge, giving direct access to Stansted, Oxford and London.

Respondents commented that a northern approach would make the Cambridge Science Park and Addenbrookes accessible by sustainable transport.

Respondents suggested that a northern route would connect with the growing commuter corridor and transport options, including light rail and guided busway plans, and therefore would be preferable to a southern route.

Respondents suggested that a northern route would be able to rejuvenate the Cambridge St Ives line, by replacing the guided busway with a full rail link.

Respondents suggested that the railway should be tied into the Cambridge to Camborne busway, as with the current proposals, the train would be no quicker than the bus or car between these stations (20mins). Concerns were raised that EWR will be competing with other infrastructure projects in the area – e.g. proposed A10 and guided busway upgrade.

Respondents suggested that a northern route would be preferred over the proposed southern alignment options, as stations (e.g. Cambridge North station) already exist.

Respondents suggested that further work is undertaken to understand how the proposals for CAM (Cambridge Autonomous Metro) and other transport links relate to EWR proposals for Cambourne North station.

Concerns were raised that four-tracking from Milton to Cambridge would impact active travel solutions e.g. bridges and underpasses that form part of the Chisolm Way.

Respondents raised concern that the southern approach would join the current two-track Kings Cross mainline between Harston and Cambridge, and this mainline is already very busy, as there is already frequent overcrowding as trains wait to get into the station. The proposals

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are not clear how the capacity will be doubled without moving to four-track, yet the same cannot be done for the Northern route.

The Northern Approach to Cambridge would connect to the WAML north-east of Milton then follow the line into Cambridge. The A505 is south of Cambridge and would not provide direct connectivity to any stations that were included in a northern approach to Cambridge.

Both the Northern and Southern Approaches to Cambridge would be able to connect passengers to other parts of the national rail network and would provide connections to Norwich, Ipswich and Felixstowe and Stansted from Cambridge station. However, the Southern Approach to Cambridge would provide greater flexibility to extend the new EWR services to other destinations north and east of Cambridge directly in the future due to the fact that the revised northern approach would entail either reversal moves at Cambridge station, or potentially skipping Cambridge stations and heading north via Milton Junction. It is noted that any future extensions are subject to infrastructure upgrades elsewhere on the rail network.

We are proposing to follow the new A428 alignment between the Black Cat roundabout and Cambourne. However, locating the railway in close proximity to the existing A14 road between Cambourne and Cambridge is likely to have significant impacts on existing settlements along these routes through either direct clashes with development or 'sandwiching' settlements between these busy roads and the new railway, increasing the impacts on local communities from the combined infrastructure. In addition, the number of complex junctions with roads on this route would necessitate the construction of large bridge and viaduct structures, which are likely to have significant visual impacts. It is therefore not agreed that following this route would result in less impact on environment, less noise pollution and less disruption to communities, properties, and landscapes.

Both northern and southern approaches would provide direct EWR services to Oxford. However, there is insufficient capacity for additional services to extend southward, for example to Stansted airport. This means that Northern Approach to Cambridge services approaching Cambridge from the north could not continue southward beyond Cambridge.

It would be possible for EWR trains using a southern approach to be extended to Cambridge North – the closest station to the Cambridge Science Park – with only relatively minor upgrades to the current station infrastructure. This means that EWR trains could call at all three stations in the Cambridge built-up area. However, it would not be possible for EWR services using a northern approach to be extended to call at Cambridge South directly without significant additional upgrades to the WAML south of Cambridge station. This would significantly increase the cost and disruption of delivering the northern approach. Consequently, under a northern option, passengers would have to change trains in order to continue their journeys to Cambridge South station, which would make access to the Addenbrooke's Hospital less convenient and increase journey times.

Whilst future expansion of the network is currently out of the EWR scope, the extent to which each alignment affords future expansion of EWR was taken into consideration. Under the

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Northern Approach to Cambridge, there is insufficient capacity on existing lines to the south of Cambridge to extend services onto Stansted or London without significant additional upgrades to the existing two-track WAML.

Regarding connectivity to all Cambridge stations, one alternative identified to provide direct connectivity to Cambridge South station under the Northern Approach to Cambridge was the extension of existing services run by other operators, which terminate in Cambridge. However, this would not afford the 4tph service frequency to meet the forecasted demand, have longer journey times than a southern approach, add greater risk of importing delays from other parts of the network, constrain timetabling, and require additional infrastructure and therefore cost.

Extension of EWR services further east would be more challenging on the Northern Approach to Cambridge as trains running from and to Cambridge station to the east would need to undertake a reversing manoeuvre at the station. This reversing, or turnback, maneouvre would require twice the number of available train paths on the WAML north of Cambridge station and therefore reduce any remaining rail capacity which could be used for other train services. Additionally, journey times for through passengers would be longer as a resuilt of running over the same section of track in both directions and the necessary dwelling and turnback time at Cambridge station. However, it is likely that future expansion on the Southern Approach to Cambridge could be achieved without such reversal manoeuvres thereby more easily facilitating EWR train service extensions in the future, subject to additional upgrades on other parts of the network, which would also be needed if a northern approach was selected. Accordingly, this matter would not alter our decision to prefer the Southern Approach to Cambridge which provides better connectivity and more flexible options to extend EWR services in the future.

The Northern Approach to Cambridge would provide connections to Cambridge North station and potentially to the existing guided busway at Oakington. The Southern Approach to Cambridge could provide connections to the proposed Cambridge South East Transport (CSET) busway route at the Cambridge Biomedical Campus. Both options would provide potential links to the proposed Cambourne to Cambridge (C2C) busway and to numerous rail services. However, the areas to the north and northwest of Cambridge are already better-served by existing public transport infrastructure, such as the Cambridgeshire Guided Busway and the WAML stops at Cambridge North station, which already provide for the commuting and transport needs of these areas. We consider that the Southern Approach to Cambridge would provide higher potential benefits in terms of unlocking constraints on growth and providing better commuter and transport connectivity to key areas, including Cambridge South station and the Biomedical Campus.

The new railway and the busway would complement each other, which many respondents told us was an important consideration. Replacing the Cambridge – St Ives guided busway with a heavy rail line would undermine this integrated transport approach, including by significantly reducing service frequency to St Ives and Huntingdon compared to current levels, and reducing existing public transport connectivity in terms of the number of stops that the guided busway

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delivers compared to the EWR heavy rail solution, which operates over a wider area, at higher speeds and with fewer stops. This would not be supported by the business case.

The EWR station at Cambourne could provide connectivity with the proposed Cambourne to Cambridge Busway scheme between Cambourne and Cambridge. However, EWR would provide a fast and direct connection to both Cambridge South and Cambridge stations, complementing the C2C busway which would approach Cambridge from the west. Journey times to the Cambridge South and Cambridge stations would be quicker on EWR. They provide for more localised connections to and from EWR stations. The busway offers the opportunity for customers to access convenient services to north and west Cambridge which also serves villages in-between.

The guided busway and A10 would both cross the railway in the Northern Approach to Cambridge design. We are working closely with interfacing transport schemes and will ensure that we integrate as best as possible to contribute to an integrated transport solution for the region. In this regard, the decision to continue to prefer the Southern Approach to Cambridge means that the new railway would complement these schemes: the A10 and guided busway improvements would improve connectivity in north Cambridge, whereas the Southern Approach to Cambridge would provide direct connectivity to the new Cambridge South station and the Biomedical Campus.

It is assumed that the respondent is referring to Cambridge North station and not Cambourne. The proposed Cambridge South station is not being promoted by EWR as it is a separate Network Rail Project, it has recently been granted consent. We are working closely with Network Rail to manage interfaces and explore opportunities for EWR to serve Cambridge South stations. We expect that Cambridge South stations will be completed before EWR is constructed soso the benefits of direct connectivity from the west to Cambridge South station would be realised as soon as EWR opens. The preferred Southern Approach to Cambridge would not preclude EWR services being extended to serve Cambridge North station directly as well, subject to relatively minor upgrades to the track and platforms at and near the current station.

We are aware of the Chisholm Trail proposals. The Northern Approach to Cambridge would likely to have an adverse impact on its future delivery due to the requirement to add additional tracks between Coldham's Lane and Mill Road, which is the route of the proposed extended Chisholm Trail. The Southern Approach to Cambridge would have no direct impact on the Chisholm Trail.

Our proposed Southern Approach to Cambridge would involve four tracking the WAML from Shepreth Branch Junction to the Cambridge station throat. This would provide EWR with two dedicated tracks which would ensure that the four EWR trains per hour could operate without affecting existing services. Our operational modelling has confirmed that a four-track solution provides for four EWR services per hour, avoids impacts on existing services, and provides some capacity for future growth.

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It would not be necessary for the existing railway line between Shepreth Branch Junction and the new EWR junction near Hauxton to be expanded from two to four tracks because there is sufficient existing capacity to enable the four additional EWR trains per hour to operate at an even interval of every 15 minutes already.
However, in light of feedback, we will explore whether providing additional tracks on the Southern Approach to Cambridge between Hauxton and Shepreth Branch Junction would represent value for money by further enhancing existing capacity in this area.

3.2.11 The case/need for EWR

Respondents expressed the opinion that a northern approach would more effectively meet the business case and objectives set out for the EWR Project, in comparison to the proposed southern alignments. Concerns were also raised that there is no viable business case for a northern approach.

Respondents suggested that the implementation of the guided Busway, upgraded A14 and metro mean there is no need for additional transport links.

Respondents suggested that economic implications of Covid-19 must be considered to ensure EWR provides value for taxpayers, specifically referring to uncertainty regarding the future of office working and the impact on commuter numbers.

The development of the EWR Project is guided by the Project objectives, which were detailed in Chapter 3 of the consultation Technical Report provided as part of the 2021 consultation. A southern approach would provide the only solution to fully unlock economic opportunities that could be realised through EWR. Our high-level investigations since the 2021 consultation indicate that the revised northern approach may potentially be cheaper to build and quicker to construct, and have less potential environment impact, but it would not deliver the economic growth which could be enabled by a southern approach. Whilst options to serve Cambridge South station using a northern approach perform poorly, the southern approach both serves Cambridge South station fully and provides an option to extend services to serve Cambridge North station directly, serving all three Cambridge stations, as well as locations further north and east. This is in line with stakeholder aspirations for future connectivity further east, although noting that extensions east of Cambridge are not currently within the scope of this Project.

For more detail regarding EWR's business case and objectives please see our website.
We are preparing a business case for the Project in accordance with the 'Green Book' requirements of HM Treasury. This is an iterative process that will continue in parallel with the development of the design and the preparation of the Development Consent Order application, which would provide the consent to build, opeerate and maintain the Project. It is important to note that the business case relates to the Project as a whole and is not prepared for individual options considered during the Project's development phase.

The guided busway and A14 are both located to the north of Cambridge and would not provide convenient access to Cambridge South and the Biomedical Campus. The

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Cambridgeshire Autonomous Metro (CAM) is also no longer being progressed, however, both Northern Approach to Cambridge and Southern Approach to Cambridge would provide potential links to the proposed Cambourne to Cambridge (C2C) busway. The preferred Southern Approach to Cambridge would complement this by providing quick, direct connectivity to the new Cambridge South and existing Cambridge stations as well as having the potential for EWR trains to be extended to Cambridge North as well subject to relatively minor upgrades to the track and platforms at and near the current station.

With regard to the impact of Covid-19, as detailed in paragraph 2.2.4 of the Non-Statutory Consultation Technical Report, the outbreak significantly cut demand for rail travel in the short term. However, EWR would not enter into service until the end of the decade and the purpose of EWR is to enhance connectivity across the Oxford to Cambridge area as a whole and, in so doing, unlock constraints on economic growth within the region. Work is still ongoing to understand how the Covid-19 pandemic may affect commuter, business and leisure travel patterns over the longer-term, but since the end of the Covid-19 pandemic rail passenger numbers have increased to nearly 80% of pre-pandemic levels. We will continue to monitor these figures and to factor them into the iterative business case process.

EWR is addressing a fundamental lack of connectivity in the region. Although a majority of pre-pandemic commuters have returned to commuting at least once per week to their place of work, there is a significant number of commuters who are still working from home full-time. While no consensus has formed about the impact of a hybrid working pattern (working from home and in the workplace) on the long-term rail demand in the UK, we have started testing the long-term potential impact of an increase in flexible working patternson the route. But this is a much longer-term Project and will connect communities along the route for decades to come.

3.2.12 Infrastructure suggestions

Respondents have suggested that a northern route could have a grade-separated junction.

Respondents offered suggestions for an additional turnback platform at Cambridge South, allowing trains from Bedford to continue to Ipswich and Norwich or terminate.

Respondents suggested that there won't be the need for a grade separated junction at Milton.

Concerns were raised regarding the need to upgrade existing rail junctions and infrastructure to accommodate for increased passenger and freight rail traffic.

Respondents suggested using a short tunnel into the Barrington Quarry to avoid adverse impacts on the landscape.

Respondents suggested that having two tracks through Harston is a limiting factor to rail capacity and future-proofing the line and that widening this section would also enable multi-modal transport such as cycle paths, busways, trams or light rail.

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Respondents suggested that the inclusion of a junction connecting Cambridge to the Kings Cross line would remove the requirement for the closure of Station Road in Harston.

Respondents suggested that a tunnel under the A14/M11 or taking the road over the railway would be beneficial.

It is accepted that there will be a need for upgrade of infrastructure and introduction of new junctions to integrate EWR with the Royston Branch Line, the WAML and at Cambridge South and Cambridge station approaches, including new junction at Hauxton where the Southern Approach to Cambridge joins the existing rail network. We do not believe at this point that we need to grade separate the existing Shepreth Branch Junction.

Cambridge South station's Transport and Works Act Order has already been approved. This will provide a four platform station. In order to provide direct connectivity to Cambridge South station under a northern approach, turnback facilities would be needed at, or near Cambridge South station. However, it would not be possible to introduce turnback facilities for EWR trains approaching from the north due to space contraints at Cambridge South station; with Hobson's Park to the west and the Biomedical Campus to the east. Any turnback using the proposed configuration would lead to conflicting crossover moves and would create constraints on the WAML timetable. This turnback at Cambridge South station is not required for a southern approach as trains would pass through from the south towards Cambridge station.

The existing line between Cambridge and Ely is near capacity. For the reviseed northern approach to alignment, a grade separated junction would be required at Milton to avoid EWR services conflicting with existing services and impacting their performance. If a grade-separated junction was not provided here then this would undermine the capacity of the junction and cause the Northern Approach to Cambridge to perform worse compared to the Southern Approach to Cambridge. We have assumed that the Northern Approach to Cambridge would include a grade separated junction at Milton, with a south facing chord for passenger services into Cambridge and a north facing chord for freight. The grade-separated junction is required so as to not cause unnecessary conflicting moves, a capacity constraint and likely performance delays to the twin track WAML where the new EWR line joins it from the West. However, even if this grade-separated junction is built, this would not alter our decision to prefer the Southern Approach to Cambridge which provides higher potential benefits in terms of unlocking growth, better connectivity and more flexible options to extend EWR services in the future.

In designing the railway, we have focused on EWR's ability to encourage sustainable travel patterns. EWR Co and Network Rail analysis shows that the existing two tracks on the Royston Branch line would provide enough capacity and resilience for the increase in services which EWR would deliver. However, the Southern Approach to Cambridge would not preclude additional tracks being provided if required in the future. By comparison to a Northern Approach to Cambridge, this would be less disruptive than providing additional tracks on the West Anglia Main Line north of Coldham's Lane to increase future capacity if a northern approach was chosen.

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For the Southern Approach to Cambridge the EWR proposals would connect the new line to the Royston Branch Line (which carries trains to King's Cross station) to the south of Harston using a new junction. This means that Station Road would need to be re-routed to join the A10 to the south-west.

We will continue to explore possible solutions for crossings, including tunnelling. Our option selection process includes assessment of impacts of each option, including environmental, cost and time, as well as the extent to which the option meets the Project objectives. This is partly because they are more complex and expensive to build, operate and maintain than above ground structures. Tunnels also require additional land for ventilation and exit provisions in case of emergency as well as pumping and drainage systems to deal with groundwater flows.

Barrington Quarry is not on the current proposed route and would require a significant detour so a tunnel would not be appropriate. In addition, the quarry is currently an active reception site for HS2 tunnel arisings.

The northern approach would cross over the A14 and requiring new infrastructure. The A14 is an eight-lane dual carriageway in this location which means that a substantial structure would be needed. By comparison, the Southern Approach to Cambridge could go under the M11 on the existing Royston Branch line rather than requiring a new bridge or tunnel to be constructed. Accordingly, this matter would not cause us to re-open the decision to prefer the Southern Approach to Cambridge.

Further details of the design will be provided at the forthcoming statutory consultation, which we expect to take place in the first half of 2024.

3.2.13 Heritage

Respondents suggested that fewer ancient monuments will be impacted if the new railway approached Cambridge from the north rather than the proposed southern alignment.

Concerns were raised about where the northern route passes through grade listed buildings. Respondents raised concern about impact of the northern route on an iron age settlement between Milton and Landbeach and associated heritage sites.

Concerns were raised that many designated heritage assets in Histon are potentially affected by the proposals and have not been identified in the consultation.

Concerns were raised regarding adverse impacts of southern route on historic villages, heritage assets, such as listed buildings, Scheduled Monuments and conservation areas i.e. Chapel Hill, Landbeach and Money Hill tumuli.

Concerns were also raised that there are more listed buildings and heritage sites near the southern approach.

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Respondents raised concerns that listed buildings would be affected by all routes however there are four times the number of Grade 2 listed buildings within 500 metres of the track on the southern route, than on the northern one.

Historic England suggested that further analysis of heritage assets is required to come to a balanced view on preference of route.

We understand the concern around the impact of the proposals on heritage and historic buildings.

As far as is reasonably practicable, we will aim to avoid harm to the setting of designated heritage assets, prioritising those of the highest sensitivity such as Scheduled Monuments, Grade I and Grade II listed buildings and parks and gardens. In order to do this, early identification and surveys of those assets most likely to be affected has been, and will continue to be, carried out so the Project can be designed to avoid these and, where this is not possible, incorporate appropriate mitigation measures.

As set out in Appendix F of the Non-Statutory Consultation Technical Report, there are no Scheduled Monuments within 10m of the Northern Approach to Cambridge and two within 10m of the Southern Approach to Cambridge and both designs would have the potential to impact on the settings of a number of heritage assets. Despite this, the revised northern appraoch would not represent an overall improvement compared to the Southern Approach to Cambridge in this regard as both options would still have the potential to result in impacts to a number of designated heritage assets. Accordingly, this matter would not cause us to re-open the decision to prefer the Southern Approach to Cambridge.

Further work has been undertaken in development of the Southern Approach to Cambridge, including within the Cambridge-to-Shepreth Branch junction corridor, to gain a more detailed understanding of the the potential impacts on the Nine Wells area, greenspaces, and Scheduled Monuments. For the Southern Approach to Cambridge thet route and construction boundary would likely be adjacent to existing Scheduled Monument in the Harston area as well as parallel to the WAML, south of Addenbrooke's Road. Whilst direct impacts are likely to be avoided on the area of land scheduled, there remains potential for impacts on the setting of these assets.

The Southern Approach to Cambridge would not have any impacts on heritage assets in the Landbeach area, Chapel Hill and The Money Hill Tumuli. Non-listed or scheduled areas may be impacted in the Haslingfield area by the Southern Approach to Cambridge and further work will be undertaken in order to assess this and potential mitigation measures.

A Northern Approach to Cambridge would not have a direct impact on any listed buildings between Cambourne and Cambridge, except Cambridge station (Grade II listed) which may require modification. However this would also apply to the Southern Approach to Cambridge and so this consideration does not differentiate between them.

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The decision to continue to prefer the Southern Approach to Cambridge means that any impacts on heritage sites between Milton and Landbeach and near Histon would be avoided.

The PEIR will include information regarding the historic environment baseline, preliminary construction and operation assessment of direct impacts and the setting of heritage assets, buried archaeology and historic landscapes. A Zone of Theoretical Visibility, which identifies the potential visibility of the Project across the landscape, will be produced to inform extent of change to settings. The PEIR will be presented at statutory consultation with an Environmental Statement being submitted as part of the DCO application.

The design has considered heritage assets and followed the environmental mitigation hierarchy by seeking to avoid significant adverse effects on heritage assets and, where this isn't possible, seeking to reduce and mitigate impacts and, if necessary, providing compensation where feasible. At this stage the Project is primarily focused on trying to avoid and reduce impact, by making decisions that help 'design out' the potential for environmental impacts.

The heritage issues discussed above do not differentiate between the Northern Approach to Cambridge and Southern Approach to Cambridge and would not alter our decision to prefer the Southern Approach to Cambridge as this provides higher potential benefits in terms of unlocking growth, better connectivity and more flexible options to extend EWR services in the future.

3.2.14 Cycle paths, routes and facilities

Respondents were keen for cycling routes alongside the railway to form a key part of the design for EWR.

Concerns were raised about the potential loss of cycling routes, including those from Fowlmere to Harston, which respondents said would be disrupted during construction.

Respondents suggested that the Northern Approach to Cambridge would enable people to cycle to stations, helping to ease current congested roads.

Other suggestions included:

- Proposals should include underpasses with cycle lane/footpath provision.
- Trains and train stations should be able to accommodate bicycles.
- All stations should be accessible by public transport, pedestrians and or bicycle.
- Bike storage must be secure to help tackle bike theft at railway stations.
- The Northern Approach to Cambridge should include a footbridge over the A428 for cyclists and walkers.

With regards to existing cycling infrastructure, respondents said that:

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- Further work should be undertaken to protect the cycle path from Shelford to Addenbrookes, ensuring it is still possible to easily cycle between the Shelfords and Hauxton/Harston.
- The cycle path and greenway connections between the Eversdens, Comberton and Cambridge should be improved.
- A replacement route for the DNA cycle path in Cambridge should be constructed if the Southern Approach to Cambridge is implemented.
- The bridleway between Bourn and Cambridge should be upgraded into a high-quality cycleway.

We are committed to encouraging active travel (walking, wheeling and cycling) and are focused on integrating this with existing and future regional and local plans and planning strategies. We want to deliver a real step-change in the quality of active transport infrastructure across the EWR route, so that pedestrian and bicycle travel becomes a realistic and attractive choice for short journeys. Such facilities could then serve as a catalyst for greatly improved active transport infrastructure nationwide and would bring the associated health and economic benefits to the communities that it serves.

We will make sure that the ease of using new and improved active travel modes (walking, wheeling and cycling) is appropriately considered in the development of our station designs, including for example safe cycle storage requirements at stations. Provision would also be made for bicycles to be taken on trains. More information on active travel will be provided at the statutory consultation.

We have considered the impact of the Project on existing highways, ProW and private access roads as part of the design and assessment of route alignment options, and we are seeking to maintain existing highway connections wherever feasible. Where it is not feasible, we'll ensure that a suitable alternative is available which minimises the impact on communities and users. During construction, we will seek to reduce impacts on ProWs. Where a ProW is affected, we will consider options that include closing the route temporarily, providing a temporary diversion, or opening an alternative permanent route before the existing one is closed. We will consult in more detail on proposals for individual highways, ProW and private access roads at the statutory consultation.

The works required to the WAML are currently proposed to be contained within the existing Network Rail corridor and should not impact the DNA cycle path.

Creating a cycle route alongside the line is not part of the scope for the EWR Project. However, we will ensure that public transport connectivity and the ability to use new and improved active travel modes are appropriately considered in the development of our station designs. The potential for opportunities to improve cycle path and greenway connections, including those highlighted by respondents, will be considered as the design is developed.

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3.2.15 Environmental impact – general

Respondents suggested that the proposals include crossings for pedestrians, bikes, wildlife, agriculture and cars, to minimise disruption and improve connectivity between communities. Respondents suggested that environmentally friendly construction techniques are used and that the Project delivers 10% Biodiversity Net Gain.

Concerns were raised that the southern alignment crosses areas of greenbelt. Respondents suggested that a northern approach would travel through more brownfield sites and would have fewer negative impacts on the environment.

Respondents raised general concerns about impacts from trains on environment, villages, wildlife and odour.

Respondents commented that minimising impacts on the environment should be a priority in decision making on the alignment and design of the new railway. Respondents suggested that further work is required to minimise the impact of the proposals on the local environment.

Respondents were concerned that the proposed southern alignment option will cause long-term impacts on the environment.

Respondents commented that the impacts of the railway cannot be offset by planting trees. Respondents expressed the opinion that because the northern approach does not require the creation of a complex junction in the Harston area, the associated environmental damage would be avoided.

Respondents suggested that a route north of Cambridge would have less environmental, noise and social impact, in comparison to a southern route.

Respondents suggested that EWR should consider, for the northern route, tunneling beneath roads, flood plains and existing water sources, which would make the proposals cleaner and greener.

Respondents suggetsed that the Northern approach would affect just two villages and, according to the Wildlife Trust, cause less environmental damage than the southern approach. Respondents suggested that bodies including CPRE, BCN Wildlife Trust, The Woodland Trust and Natural England believe that a northern approach would be better than a southern alignment.

Concerns were raised that the northern approach would have an impact on the environment and result in irreversible damage. Concerns were raised that villages affected by the northern route would still be recovering from the impact of works on the A14, and that the ecosystem takes a long time to recover.

Respondents were concerned that proposals for the northern approach would impact the local environment in the area north of the A428 at Cambourne and also at Knapwell.

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We fully appreciate concerns around the potential environmental impacts of EWR. These are inherent in a major infrastructure Project like the new railway line which we would be constructing.

We are committed to encouraging walking, wheeling and cycling (active travel) and are focused on integrating this with existing and future regional and local plans and planning strategies. We are committed to delivering a real step-change in the quality of active transport infrastructure throughout the EWR corridor, so that travelling by bike and as a pedestrian becomes a realistic and attractive choice for short journeys. Such facilities could then serve as a catalyst for greatly improved active transport infrastructure nationwide and would bring the associated health and economic benefits to the communities that it serves.

Options for active travel could include new and improved walking and cycling routes, new or altered bus services and on-demand services that could provide a door-to-door service between the station and a customer's destination, timed to connect with the train service. This will also include for example associated cycle storage requirements at stations.

Regarding the movement of wildlife, we recognise the importance of ecological connectivity and reconnecting fragmented areas of habitat to strengthen them and promote movement of wildlife. Green bridges, wildlife tunnels, SuDs, restoring woodland and creating new green areas and parks will be considered to mitigate severance of habitats, maintain historic features, improve connectivity, and positively integrate with landscape character.
We appreciate the concerns around the environmental impact and will consider the importance of environmental sustainability in the activities and the decisions made in order to ensure that the Project is designed, constructed, operated and maintained in an environmentally responsible manner that minimises negative environmental impacts.

Construction-related impacts on the environment for the preferred route will be identified and managed, as far as reasonably practicable, by a CoCP submitted alongside the DCO application. This will include measures to control impacts related to construction noise and vibration, air quality, contaminated land, ecology, historic environment, construction traffic, tree protection, surface and groundwater management, waste management and general site operations. In addition, it will state permissible contractor working hours.

Our teams will continue to engage with local people and communities to understand the arrangements which are least disruptive to people's lives and businesses and will ensure that appropriate measures are in place to protect the flora and fauna of the corridor through which construction works will take place. It is our intention to build on the commitment of 10% Biodiversity Net Gain made in relation to the part of EWR between Bicester to Bletchley and we will work with the stakeholders to do this. We will prioritise avoiding high value and priority habitats and where necessary enhance existing and create new habitats. Further information on plans for achieving 10% Biodiversity Net Gain will be provided during statutory consultation.

We acknowledge the concerns around the impacts on the green belt and will work to identify and reduce impacts and protect it wherever reasonably practicable. Cambridge is surrounded

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by designated green belt which means that the railway would pass through it no matter whether the Northern Approach to Cambridge or Southern Approach to Cambridge is used to approach the city. Accordingly, this matter would not cause us to re-open the decision to prefer the Southern Approach to Cambridge.

To help reduce impacts, we are following the environmental mitigation hierarchy by seeking to avoid significant adverse effects on the countryside and where this isn't possible, seeking to reduce and mitigate impacts and if necessary, looking at environmental compensation measures. We recognise concerns about the impact of odour and noise and are committed to considering measures such as choice of trains, track technology, and noise barriers, although we do not consider that this would itselff differentiate between the Northern Approach to Cambridge and Southern Approach to Cambridge to a material degree.

As stated in the environment and heritage information presented in Appendix F of the Non-Statutory Consultation Technical Report, the Southern Approach to Cambridge would interact with a greater number of priority habitats than the Northern Approach to Cambridge. Based on the design presented in Appendix F of the Non-Statutory Consultation Technical Report, we concluded that in terms of the environment, the revised northern approach would not be likely to perform materially better than the southern approach. However, the updated Northern Approach to Cambridge design prepared as part of the ACP has lowered the alignment through the countryside and reduced upgrade works, associated demolitions, and potential impact on environmental features including priority habitat and open green space within Cambridge. Both the northern and southern appraoches would pass by various settlements in Cambridgeshire between the new Cambourne station and the point at which they join the existing rail network near Cambridge (near Milton and Hauxton respectively). Both would also involve works in the built-up area of Cambridge itself and the new EWR trains would also run through the built-up area, although the northern approach would have a greater length in the built-up area than the southern appraoch.

The number of properties within 500 metres of the northern and southern approaches (between the Cambourne and Cambridge stations) would be broadly similar overall although, as set out in Appendix F of the Non-Statutory Consultation Technical Report, there would be more properties within 200m of the northern approach alignment compared to the SATC i.e. more properties are located closer to the northern approach. EWR Co considers that the impacts on Community would be broadly neutral.

It is important to note that the works needed to deliver the northern approach would require the closure of, and replacement diversion for, Fen Road level crossing, which would have the potential for impacts on the established traveller community in this area. Whilst we consider it to be possible to provide mitigation measures (such as by constructing a replacement road access for the community), EWR Co notes that it is possible to avoid these impacts arising in the first place. The SATC avoids these impacts on the traveller community.

For environmental impacts and opportunities Assessment Factor (AF 14), the revised northern approach design is considered to perform better than the southern appraoch as it avoids

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locating new infrastructure within the core sustenance zone of the Barbastelle bat colony at Eversden and Wimpole Woods SAC, and is expected to have lower levels of embodied carbon. It is noted, that whilst environmental impact is important to EWR, there are fourteen other assessment factors that EWR uses to assess options. These include, for example, assessment of ability of an option to unlock growth, provision of connectivity and ability to extend EWR services in the future.

We will continue to explore possible solutions for crossings, including tunnelling. Our option selection process includes assessment of impacts of each option, including environmental, cost and time, as well as the extent to which the option meets the Project objectives. It is noted that tunnels are more complex and expensive to build, operate and maintain than above ground structures. Tunnels also require additional land for ventilation and exit provisions in case of emergency as well as pumping and drainage systems to deal with groundwater flows. A tunnel would also have a much greater amount of embodied carbon due to the amount of concrete required in its construction.

We recognise the need to minimise environmental impact and that use of previously developed land is preferable where appropriate. However, both the northern and southern approaches would require significant construction in the open countryside so this is not considered to be a differentiating factor.

We are considering the importance of environmental sustainability in the activities and the decisions made in order to ensure that the Project is designed, constructed, operated and maintained in an environmentally responsible manner that minimises negative environmental impacts as far as reasonably practicable whilst also delivering the opportunities for enhanced connectivity and unlocking growth which the Project affords. We are determined to be an industry leader on environmental sustainability across the whole life cycle of the Project. We are aiming not just to reduce impact but to realise opportunities to enhance the environment in line with the Government's 25 Year Environment Plan and our own vision for the EWR Project. We are aiming to protect and enhance the natural and historic environment; to be a net zero carbon railway; to ensure the resilience of the infrastructure; and to contribute to the wellbeing of communities and customers.

We have carefully considered all of the feedback received during the consultation, including from environmental organisations, and their reasoning behind any route preferences. The northern and southern appraoches share the same alignment until they are east of Cambourne and are approximately 2km from Knapwell. The preferred route alignment north of Cambourne would run parallel to the A428. This could help to reduce some adverse impacts of the Project. Visual changes to the landscape would be concentrated in the A428 corridor rather than in areas not already subject to development, and there may be the opportunity to combine landscaping and other environmental mitigation measures. In these circumstances, this would not be a differentiating factor between the northern and southern approaches. The design solution will continue to consider the longer-term environmental impacts of the Project, and we will seek to include specific measures within the design to reduce the impact of the Project on the surrounding environment during construction and operation. Assessing the impact of the Project on the environment is a fundamental part of the Project's

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development, including consideration of possible mitigation measures. We will identify elements of the Project that could result in significant environmental effects, primarily by undertaking an Environmental Impact Assessment (EIA) in accordance with UK legislation, which will be informed by associated environmental assessment and environmental survey activities.

Part of the EIA process includes procedures for consultation with Statutory Bodies and other stakeholders including the making of representations by them about the environmental effects of the development. We continue to engage with statutory bodies and other stakeholders, to build positive relationships, promote best practice, engage on key issues to help inform the design and agree mitigation.

The potential environmental impact of the Project has been carefully considered throughout the optioneering process to date. Now that a preferred route alignment between Bedford and Cambridge has been selected further more detailed work will be undertaken to identify elements that could result in significant environmental impacts.

We acknowledge that the villages and ecosystems located to the north and northwest of Cambridge – which would be potentially affected by the Northern Approach to Cambridge – have recently experienced effects from the construction of the A14 upgrade scheme by National Highways. The decision to continue to prefer the southern approach means that further impacts in this area would be avoided.

Socio-economic impacts, such as those on businesses, are not expected to differentiate between the northern and southern approaches to a material degree.

We are looking to ensure that landscape mitigation measures are closely integrated with the ecological requirements of both the Project and the wider area to ensure that the environmental legacy of the works is positive and to support our commitment to achieving biodiversity net gain. Further information on our proposals will be provided at the statutory consultation.

3.2.16 Air quality/pollution

Respondents raised concern that Harston already has poor air quality and that running diesel trains through the area will adversely impact air quality.

General concerns were raised about adverse impact on air quality as a result of diesel emissions, including particulates and CO2. Concerns raised regarding the impact of the proposed new rail line on air quality in surrounding villages.

Respondents raised concern about the railway's proximity to villages (Haslingfield Primary School, Harston, Comberton Village College, Newton, Harlton, Barrington, Royston, Foxton, Hauxton, Little and Great Eversden) and associated impacts on air quality.

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Concerns were raised about adverse impacts on air quality as a result of farm vehicles needing to travel further due to the presence of the railway.

Concerns were raised about potential adverse impacts on air quality as a result of construction of the southern route.

General concerns were raised about possible adverse impacts on air quality as a result of an increased number of vehicle journeys that will be taken during the construction period.

Respondents raised concern that seven times more people will be experience adverse air and noise quality impacts from proposals for the northern route, compared with the southern route.

Respondents suggested that a southern route would have adverse impacts on community connectivity, which will result in increased use of private vehicles, leading to adverse impacts on air quality.

Concerns were raised that the southern approach would exacerbate adverse air quality impacts associated with the A10.

Respondents were concerned that trains traveling on Route E, when compared with the northern approach, would require more fuel due to the workload from the climbs, which would result in adverse impacts on air quality.

Concerns were raised regarding freight trains running close to Addenbrookes and Papworth hospitals, which will be particularly sensitive to air pollution impacts. General concerns were raised about the increase in air pollution due to the number of freight trains using the line.

Respondents expressed the opinion that the impact of noise and air pollution and loss of access to roads and footpaths will be greater on the communities in the rural southern area compared with the area north of Cambridge.

Respdondents suggested that EWR proposals will means roads will be used less and as such CO2 emissions will be reduced.

Respondents were concerned if the track is not electrified, the use of diesel trains will have a negative effect on air quality, with particular reference to potential impact on children's health in Histon.

We take our commitment to delivering sustainable transport seriously and are developing the Project in line with the policy and law of the UK Government, such as the Clean Air Strategy. In 2018, the Government challenged the rail industry to produce a vision for the removal of all diesel-only trains from the network by 2040 and we are committed to running a sustainable railway in the long term, with reduced emissions, including for carbon, Nox and particulates, and the use of sustainable traction power in the long term. Therefore, we are exploring how we can introduce new and emerging technologies in the long-term train fleet. No final decision

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as to the traction that will be used to operate the new EWR services between Bedford and Cambridge has yet been taken and more information about traction power will be provided at statutory consultation. Accordingly, this matter would not cause us to re-open the decision to prefer the southern approach.

In relation to air quality, the Northern Approach to Cambridge would perform worse overall due to additional works within the AQMA areas north of Cambridge station. These works are not required for the southern approach. Harston is not within a current AQMA. More of the Northern Approach to Cambridge would pass through the built-up area of Cambridge which would bring the works within closer proximity to more residents. We have considered this and this matter would not cause us to change the decision to prefer the southern approach.

The ES will assess changes in nitrogen oxides (Nox), fine particulates (known as PM2.5 and PM10) and dust. This assessment will follow best practice and guidance such as the guidance set by the Institute of Air Quality Management and other recognised bodies. The team will seek to reduce the impact the new railway may have on air quality. This will include considering what vehicles and equipment will be used during the construction and operation of the railway, as well as how to manage work sites to avoid and reduce any dust creation. Construction-related impacts on the environment, including potential sources of pollution, will be identified and managed, as far as reasonably practicable, by a Code of Construction Practice (CoCP) or similar document submitted alongside a Development Consent Order (DCO) application. This will include measures to control impacts related to construction noise and vibration, air quality, contaminated land, ecology, historic environment, construction traffic, tree protection, surface and groundwater management, waste management and general site operations.

The southern approach would run past the villages of Haslingfield, Harston, Harlton, Comberton, Newton, Hauxton and Little & Great Eversden, several of which have local schools and colleges.

Royston would be approximately 10km away from the railway alignment and is unlikely to be affected by the southern approach. The revised northern approach would run past villages of Dry Drayton, Oakington, Westwick, Histon, Landbeach and Milton. However, more of the Northern Approach to Cambridge would be within the built- up area of Cambridge itself. 3,800 properties would be within 200m of the southern approach alignment, whereas 4,600 would be within 200m of the Northern Approach to Cambridge alignment. This means that the Northern Approach to Cambridge is considered to be comparable overall in terms of community and worse in terms of air quality impacts.

The PEIR will identify any potential beneficial environmental impacts in addition outlining mitigation and control measures, and any likely and potential environmental effects of the proposals from both construction activities and operation. The assessments used to identify these impacts will consider factors such as local geology and topography.

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We do not consider that air quality impacts arising from diversion of farm vehicles would be material and, accordingly, this matter would not cause us to re-open the decision to prefer the southern approach.

For the southern approach the railway would pass within approximately 350m of Haslingfield Primary School, approximately 1.5km of Barrington Primary School, and approximately 340m of Harston Primary School. The Northern Approach to Cambridge would pass close to the village of Histon, including approximately 750m from the new location of the Histon and Impington Park Primary School.

The Project team will work with local authorities to understand the current air quality conditions in communities and how to consider other potential receptors, such as the schools mentioned by respondents. Plans for mitigation will also be included in the ES.

We are seeking to maintain existing highway connections wherever practicable. Where it is not practicable to retain existing highways, ProW and private access roads in their current location, we will ensure that a suitable alternative is available which minimises the impact on communities and users.

EWR aims to deliver modal shift (both passengers and freight) onto EWR from the existing road network. We expect that either the northern or southern approaches could assist to reduce traffic congestion in and around Cambridge and therefore help to reduce CO2 emissions. Changes in carbon emissions resulting from modal shift will be considered for the preferred alignment and reported in the ES.

The impact of gradients on modern diesel traction is less significant than in older rolling stock designs. As a result, all route options presented are suitable for modern diesel traction trains. The infrastructure we will build will be designed to industry standards that ensure safety and reliability.

EWR trains will be over 200m from the Royal Papworth and Addenbrookes Hospitals and at this stage we do not anticipate that railway would have significant impacts on these facilities. Rail freight can help decrease overall emissions by removing freight from the road. The Rail Delivery Group estimates that one freight train can remove up to 76 Heavy Goods Vehicles (HGV) from the road, reducing congestion, delivering environmental benefits (as a tonne of rail freight emits 76% less CO2 than a tonne of road freight) and safety benefits.

Whilst the actual number of freight services which run is a matter for the wider industry and freight operators, EWR co is designing the railway to maintain existing freight operating on its route and accommodate potential future growth in freight. Our work indicates that the volume of new freight flows over EWR will depend on additional investment taking place on the national network and as such, our current scope is likely to enable up to two new freight train paths per day per direction from Felixstowe, routed via Cambridge, through to Oxford and beyond. Significant investment in other enhancements, both on EWR and elsewhere on the network, would be required for freight to exceed these levels. We continue to work closely

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with the industry and stakeholders to inform our approach to freight. Traction choices are the responsibility of the freight operators.

3.2.17 Visual impact

Respondents suggested that the northern approach would have a lower visual impact if trenching was used and also that it would negate the need for viaducts.

Concerns were raised about visual impact of infrastructure where rail has to be on raised embankment/bridge e.g. across A14 and A1307. Concerns were also raised about the visual impact of crossing A428.

Respondents raised concerns that embankments and concrete structures such as flyovers will have a significant visual impact on the local environment.

Respondents raised concerns about impact on local communities, specifically regarding wellbeing following the pandemic and the visual impact associated with the proposals.

General concerns were raised about visual impact of northern route on countryside, impacting views across landscape. General concerns were raised regarding the visual impacts of the southern route on the landscape and countryside.

General concerns were also raised regarding landscape and visual impacts associated with rail infrastructure including bridges, viaduct and embankments.

Respondents suggested that a southern route will have greater impact on the landscape than northern route, with specific refence to opportunities to aligned with existing transport corridors.

Respondents raised concern that the proposed route impacts too many villagers and areas of natural beauty around Harston, Hauxton and Haslingfield.

Due to the greater length of viaduct and embankments required to cross floodplains and roads in the revised northern approach design (presented within Appendix F of the Non-Statutory Consultation Technical Report), the Northern Approach to Cambridge would have a greater visual impact than the southern approach. However, the revised northern approach design has lowered the alignment through the countryside although, again, impacts on the rural character of this area could not be avoided completely.

EWR agrees that placing the railway in a trench would negate the need for viaducts and would potentially have a reduced visual impact. However, we do not agree that using a trenching method would have less of an impact on the environment. It would create a large amount of excavated material, require significant construction necessitating many HGV movements, have much higher levels of embodied carbon, and have a greater impact on hydrology than the revised northern approach design which is predominately close to ground level. In addition, this technique would have a significantly greater cost and programme implications

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and have much greater long term drainage requirements. Use of trenching would also provide a worse customer experience as trains would predominately be within a retained cutting.

Assessing the impact of the Project on the environment is a fundamental part of the design of the Project's development, including possible mitigations. This includes consideration of landscape and visual impacts. We are carefully considering how the development can be designed to blend in with the local environment. This includes the consideration of where to create embankments and where viaducts are potentially required.

Both northern and southern approaches require viaducts and embankments, due to the topography and environmental features.

We accept that the construction of a new railway line will inevitably have visual impacts on the landscape and countryside. This would be the case whether the revised northern approach or southern approach is built and this matter would not in itself cause us to re-open the decision to prefer the southern approach.

Since the 2021 consultation, we have been reviewing the design of the Southern and Northern Approaches to Cambridge and exploring opportunities to reduce the height of embankments and viaducts. This includes minimising the amount the railway alignment is raised while allowing for road and other accesses to cross over or under the railway. It is now expected that the length of viaduct in the revised northern approach could be significantly reduced, whilst remaining above predicted flood levels, through measures such as reconstructing local roads and the guided busway to cross above the railway on bridges. The revised northern approach would cross the A14 and A1307 via either a large bridge or a viaduct, but the decision to continue to prefer the southern approach means that landscape and visual impacts in the area north and northwest of Cambridge would be avoided.

Further examples of where visual impacts are being considered are the potential use of landscape earthworks to soften the appearance of embankments and integrate them into the wider landscape or considering the sensitive placement of appropriate planting to either screen views from sensitive receptors, or to soften the appearance and presence of engineering earthworks.

The revised northern approach was considered to be a minor improvement compared to the southern approach for landscape and visual impacts due to the lower overall sensitivity of the landscape impacted, although a grade-separated 'flyover' junction would still be needed near Milton. However, this is not considered a differentiating factor in our decision to continue to prefer a southern approach.

We will seek to include specific measures within the design to reduce the impact of the Project on the surrounding environment during construction and operation. For example, measures to reduce visual intrusion may include the use of landscaping and screening. The PEIR will include information regarding the landscape and visual baseline, preliminary construction and operation assessment of the preferred alignment's impact on landscape character and views.

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With specific regard to the A428, the southern approach would need to cross the A428 near Highfield Caldecote, but this could be in an underpass which would reduce the visual impact compared to a bridge or viaduct.

3.2.18 Noise and vibration

Concerns were raised about the potential negative impacts of noise and vibration from EWR trains using both the Northern Approach to Cambridge or the southern approach, both during the day and at night.

In general, respondents were concerned about possible adverse noise impacts on children's wellbeing and education, a loss of rural tranquillity, local villages, listed buildings and property values.

Concerns were also raised about noise from freight trains (including at night), diesel trains, and as a result of the additional new infrastructure required.

Questions were raised about the noise mitigation measures that would be used, and suggestions were made to electrify the EWR line to minimise noise.

Respondents said that noise pollution from trains running up to 15 metres above ground level will affect more than just the 200 metre zone either side of the track, which is the implied noise zone.

Suggestions were made that by following an existing travel corridor, where nearby residents would already be used to traffic noise, the addition of periodic EWR trains would be less significant.

Regarding the southern approach , respondents were concerned about possible adverse noise impacts on local primary schools, wildlife, footpaths, villages including Highfields Caldecote, the Mullard Radio Astronomy Observatory (MRAO), and the mental health of local residents. Concerns were raised about embankments exacerbating any noise pollution generated by the trains using a southern approach. The southern approach possible adverse noise and vibration impacts would be experienced both day and night; and that trains travelling uphill could be particularly noisy.

Suggestions were made that further work is required to the proposed southern approach to minimise adverse noise impacts during construction. South Cambridgeshire District Council also recommended that Heritage assessments need to consider the impact of increased vibration.

In terms of the Northern Approach to Cambridge, respondents were concerned that noise pollution would be far greater in the flat northern flood plains than undulating hills of the south. Others said that trench design would result in less significant noise impacts compared with the proposed approach. There were also concerns that diesel trains having to idle for longer in Cambridge would result in increased noise pollution.

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Other concerns about noise impact from the Northern Approach to Cambridge included:

- That it would will be difficult to mitigate the noise impacts of elevated sections of the route due to the flat landscape.
- Noise from construction and potential demolitions would be greater than for the southern approach.
- Impacts on villages including Dry Drayton, Caldecote and Oakington.

We recognise concerns about the potential impact of noise and vibration and we are committed to considering measures that will reduce these. This includes the choice of trains, track technology, and noise barriers (which form one of a number of mitigations that may be appropriate where tracks may create noise and vibration). Noise and vibration are not considered to be a differentiator between the northern and southern approaches. Comprehensive assessments will be carried out and will use industry-leading computer modelling, which incorporates information on local geology to simulate potential noise and vibration impacts along the whole route as part of the assessments of any mitigations required. In these assessments specific consideration will be given to sensitive receptors such as schools. At this stage, we do not consider that adverse impacts on children's wellbeing and education would differentiate between the northern and southern approaches to a material degree.

We will develop a PEIR to describe the likely environmental effects of the proposals. We will identify potentially significant adverse impacts resulting from the proposals, allowing us to identify appropriate measures to avoid or minimise impacts, where possible, as well as identifying any potential beneficial environmental impacts. The PEIR will include information regarding the existing baseline noise and vibration (where there were already vibration generating sources) environment, together with construction and operational noise limits having regard to the appropriate guidance and legislation. Construction and operational noise levels generated from the proposed works will also be presented as part of the PEIR which will be available to for consideration at the statutory consultation.

An ES will be submitted as part of the DCO application. Additionally, further detail will be provided on the freight strategy, and the approach to avoiding or reducing potential noise and vibration impacts from freight trains which may run on EWR, during statutory consultation.

At this stage, we do not anticipate that vibration impacts from EWR train services would cause property damage for either the northern or southern approaches.

At a later stage in the planning and development process, we will develop a noise policy, which will set out a plan designed to establish and mitigate noise and vibration to avoid any significant adverse impacts on health and quality of life.

As detailed, 3,800 properties would be within 200m of the southern approach alignment, whereas 4,600 would be within 200m of the Northern Approach to Cambridge alignment. This distance is intended to provide an illustrative comparison for the purpose of understanding potential impacts.

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We have set up the Need to Sell (NTS) property scheme to support property owners who have a compelling reason to sell their property but due to EWR are unable to do so other than at a substantially reduced value or, if they are unable to sell their property, would face an unreasonable burden in the next three years. Applicants will need to satisfy five criteria including evidencing that they currently have a compelling need to sell. The NTS scheme reflects feedback received during the non statutory consultation and the NTS consultation, both held in 2021. This applies in addition to the statutory entitlements to compensation for loss of property value under the compensation code.

The Northern Approach to Cambridge would be closer to more listed buildings than the southern approach which means that the Northern Approach to Cambridge has a greater potential to have impacts on these designated heritage assets. Accordingly, this matter would not cause us to re-open the decision to prefer the southern approach.

EWR proposed operational hours for passenger services in Appendices A and B of EWR Co 2021 Consultation Technical report, with less intensive train movements as required outside these hours for infrastructure maintenance, inspection, freight, and other activities as part of the national rail network.

With regards to timetabling, the southern approach allows trains to run at 15 minute intervals, this is not possible with a northern approach.

No commitment on the traction power type to be used has yet been made by Government, and electrification is only one of the options being considered. To the extent that noise differentiates between traction options then this will be considered before a final decision is taken. Further information will be presented at the statutory consultation, followed by the ES that will be submitted as part of the DCO application. We have considered this and this matter would not cause us to change the decision to prefer the southern approach.

The impact of noise generated from the railway on biodiversity is not considered to be a differentiating factor between the northern and southern approaches. Where there is potential for significant impacts on biodiversity as a result of noise from the railway, we will seek to mitigate these as far as reasonably practicable.

We're in ongoing discussions with the Mullard Radio Astronomy Observatory/ University of Cambridge to understand how impact to the observatory can be reduced for the southern approach and, if unavoidable, mitigated. More information on how EWR Co plans to mitigate potential impacts on the observatory will be provided at the statutory consultation.

Since the 2021 consultation, we have been reviewing the design of the alignment and looking for opportunities to reduce the height of embankments and viaducts. This includes minimising the amount the railway alignment is raised while allowing for road and other accesses to cross over or under the railway. When considering these opportunities, we aim to reduce the overall impact of our design and any noise effects will be taken into account as the detailed design is developed.

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It is agreed that operational noise could be mitigated by trains running within retained cuttings (trench design). However, construction of these trenches would likely have negative environmental impacts, creating a large amount of excavated material, requiring significant construction and HGV movements, and resulting in much higher levels of embodied carbon. It would also likely create significant noise impacts during construction and would have a significantly greater cost and programme and have much greater long term drainage requirements. For these reasons, we do not consider use of trenching to be a suitable solution for this part of the Project.

We have considered this and the option of using retained cuttings is not limited to the revised northern approach so this matter would not cause us to change the decision to prefer the southern approach.

Both approaches to Cambridge will require additional infrastructure to be constructed and this will inevitably lead to some impacts, including noise and vibration. The decision to continue to prefer the southern approach means that impacts on villages in the area north and northwest of Cambridge, including Dry Drayton and Oakington, would be avoided. We acknowledge that the proposed southern approach would pass close to the northern end of Highfields Caldecote and as mentioned, our noise policy will set out a plan designed to establish and mitigate noise and vibration to avoid any significant adverse impacts on health and quality of life.

3.2.19 Wildlife, biodiversity and woodland

Concerns were raised regarding possible adverse impacts of the southern route on species (e.g. Barbastelle and Pipistrelle bats) and sensitive habitats (e.g. chalk hills and Eversden and Wimpole Woods Special Area of Conservation (SAC)). These concerns were also raised by Natural England. Respondents raised concern about the impacts of the northern route on the Eversden and Wimpole Woods SAC. Concerns were raised that the proposals will adversely affect the Barbastelle bat populations in Toft, Comberton, Barton, Great Eversden, Little Eversden and Harlton. Concerns were raised that embankments associated with the southern route will adversely impact the foraging behaviour of the Wimpole and Eversden Barbastelle bat populations.

Respondents raised general concern regarding the impact of the proposals on biodiversity.

Respondents suggested the railway will impact woodlands, greenbelt, nature reserves, such as Mansell Wood, Edwards Woods, Hardwick Wood, Park Lane and Milton Country Park. Concerns were raised about the impact of the northern route on Edwards Wood and Coldham's Common County Wildlife Site. South Cambridgeshire County Council and Bedford Borough Council suggested that the construction impact and any potential loss of habitat would need to be fully considered at these sites.

Concerns were raised that the northern route would impact ancient woodlands and open spaces, specifically Mansell Wood, The Centenary Wood and the ancient right of way, Gun's Lane.

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Concerns were raised over potential impact of proposals on a 10-acre orchard, with trees that are over 100 years old, on the Northern edge of Histon.

Respondents expressed concern about where the northern route passes through SSSIs.

Concerns were raised about the impact of the northern route on well used green open spaces.

Respondents suggested that further work is required to minimise the impact of the proposals on lowland meadows, as there are very few remaining.

Respondents raised concern about the impact of Cambourne North station development on trees, woodlands and areas of biodiversity value.

Concerns were raised regarding environmental damage associated with the proposals, including the suggestion that further work is required to minimising the loss of irreplaceable habitats.

Concerns were raised that the proposed route would impact the countryside and communities in Bedfordshire.

Respondents raised concern about the impact the southern approach will have on environmental habitats and greenbelt.

Respondents suggested that further work is undertaken to minimise the impact of the proposals on local biodiversity, access to nature, and wildlife mapping.

Concerns were raised that the route would impact the greenbelt and priority habitats.

General concern was raised regarding impact on sensitive low-lying habitats and also displacement of wildlife from habitats e.g. grass snakes and adders near Northstowe.

Respondents were concerned that the construction phase of the Project will be the most disruptive and it will take impacted habitats a long time to recover.

Concerns were raised that the railway would decimate farmland where wildlife and birds are protected, with specific mention made of RSPB Hope Farm, Knapwell.

Respondents suggested that as part of the wildlife impact mitigation strategy, more trees are planted.

Concerns were raised about the impact on habitats in Toft during construction works. Respondents raised concern that there are more sensitive habitats along the southern route compared with the northern route.

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Respondents were concerned that the proposed southern approach to Cambridge will have greater impacts on the environment including trees, protected habitats, plant and animal species and SSSIs.

Concerns were raised regarding impacts of southern approach on ecological and environmental assets, e.g. Watts Wood, Nine Wells Nature Reserve and Bourn Brook.

Respondents were concerned about the impact on trees, plants and animal species between Newtown and Harston during construction.

Respondents suggested that CPRE, BCN Wildlife Trusts, Woodland Trust and Natural England all support the Northern approach due to the protected species that will be affected by the southern approach.

Concerns that the southern alignment will have an adverse impact on habitat (e.g. Bourn Brook Valley) and wildlife including protected plant (e.g. rare orchids) and animal (e.g. bats) species.

Concerns were raised that the southern alignment would create a barrier that prevent some fauna species accessing water courses. There were concerns that proposals would result in wildlife migration and movement barriers.

Concerns were raised that the proposed embankment between Haslingfield and Newton will adversely impact local wildlife.

Concerns were raised that Lowfields Little Eversdens woodlands and associated plants, animal and fungi species will be adversely impacted.

Respondents were concerned that the chalkland habitat of Chapel Hill will be adversely affected.

Respondents suggested that the southern route impacts approximately 2.5 times the area of habitat compared with the northern route.

Concerns were raised that the southern route will adversely impact local owl population, specifically the route from Cambourne north to Hardwick and Toft.

All alignments have avoided direct impacts on key national features including known ancient woodland. The Project has committed to delivering 10% Biodiversity Net Gain which requires that habitats for wildlife are enhanced and left in a measurably better state than they were pre-development, which includes woodland.

We are committed to protecting the natural environment for example by finding approaches to delivery that avoid impacts to valued habitats, such as lowland meadows. Where impacts are unavoidable then all efforts would be made to reduce or mitigate these.

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We have considered the potential impact of the southern approach on protected species, such as Barbastelle bats. The updated Northern Approach to Cambridge design is considered to perform better than the southern approach as it avoids the use of the area of landscape to the southeast of Cambourne.

Throughout 2022 we carried out a number of surveys to better understand the Barbastelle population in the area and we will continue this work, and other ecological surveys – including for other protected species, such as owls, in 2023.

As part of the PEIR, we will include information regarding the ecology and biodiversity baseline supported by survey data, alongside a preliminary construction and operation assessment of impact on designated sites, habitats and species.

The Environment and Heritage data presented in Appendix F of the Non-Statutory Consultation Technical Report showed that the southern approach alignment interacted with a greater number of Priority Habitats than the Northern Approach to Cambridge and concluded that the Northern Approach to Cambridge is less likely to interact with bat populations associated with the Eversden and Wimpole Woods SAC. However, we concluded that, in terms of the environment, a northern approach would not be likely to perform materially better than the southern approach due to a range of considerations for environment.

The updated Northern Approach to Cambridge design has lowered the alignment through the countryside and reduced works, associated demolitions, and potential impact on environmental features including priority habitat and open green space within Cambridge.

The updated Northern Approach to Cambridge design is considered to perform better in relation to biodiversity than the southern approach as it avoids the use of the area of landscape to the southeast of Cambourne and therefore avoids locating new infrastructure within the core sustenance zone of the Barbastelle bat colony at the Eversden and Wimpole Woods SAC.

Both northern and southern alignments would not have any direct impact on any known areas of ancient woodland. The southern approach alignment would pass within approximately 650m of Hardwick Wood but would have no direct impact on this woodland area. The southern approach would pass approximately 1.5km from Watts Wood, Comberton. The proposed alignment of the Northern Approach to Cambridge would be in close proximity to the 10-acre orchard and the intervention required to allow the Cottenham Road to cross the railway may affect the orchard. The decision to continue to prefer the southern approach means that these impacts will be avoided.

The need to re-align the guided busway to cross the railway on the Northern Approach to Cambridge would potentially impact Mansell Wood. The decision to continue to prefer the southern approach means that this impact would be avoided as well as impacts to Milton Country Park and Edwards Wood.There would be no direct impact on the Centenary Wood.

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The Northern Approach to Cambridge alignment would also cross Gun's Lane, requiring mitigation.

Cambridge is surrounded by designated green belt which means that the railway would pass through it no matter which route alignment it uses to approach the city. Throughout the design process, we will seek to avoid, reduce and mitigate adverse impacts to green belt land as far as is reasonably practicable.

The widening of the WAML is not expected to directly impact Nine Wells as the railway is being kept largely within the existing Network Rail boundary.

We do not anticipate that the southern approach would directly impact the Lowfields Little Eversdens woodlands or any associated plants, animals or fungi.

For the southern approach, the design solution for Chapel Hill will consider the longer-term environmental impacts of the Project, and we will seek to include specific measures within the design to reduce the impact of the Project on the surrounding environment during construction and operation. This will include considering the impacts the Project will have on specific habitat types, such as chalkland habitats.

The proposed southern approach alignment passes approximately 1km south of the southernmost boundary of RSPB Hope Farm. Consequently, we do not anticipate that there would be any direct impacts on this site.

The southern approach would have no direct impact on the Wimpole and Eversden Woods and at this stage it is considered that impacts on the Eversden and Wimpole Woods SAC would be capable of mitigation so as to avoid an adverse effect on the integrity of the site. We have considered this and this matter would not cause us to change the decision to prefer the SATC.

We recognise the importance of biodiversity and protecting the habitats of local wildlife including priority habitats such as woodland as well as parks and greenspaces. As part of our commitment to changing the environment for the better, we are thinking carefully about these habitats when designing the railway.

The PEIR will include information regarding the ecology and biodiversity baseline supported by survey data, preliminary construction and operation assessment of impact on designated sites, habitats and species. A programme of habitat surveys and species-specific surveys is designed to help understand where species and habitats are in the landscape and how they are used, enabling the Project to avoid, reduce, mitigate and if necessary, compensate for identified impacts throughout the design of the railway.

As mentioned, we are following the environmental mitigation hierarchy by seeking to avoid significant adverse effects on woodland and ancient woodland and where this isn't possible, seeking to reduce and mitigate impacts and if necessary, providing compensation where feasible.

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We will also avoid direct impacts on the most significant nationally and internationally designated environmental assets including, National Nature Reserves (NNRs), Ramsar Sites, Sites of Special Scientific Interest (SSSIs), Special Areas of Conservation (SACs) and candidate Special Areas of Conservation (cSACs), Special Protection Areas (SPAs) and candidate Special Protection Areas (cSPAs), Ancient Woodland and Veteran Trees.

The decision to continue to prefer the southern approach means that any potential impacts on Mansell Wood, Centenary Wood, Milton Country Park and Edwards Wood will be avoided.

We recognise the importance of ecological connectivity and reconnecting fragmented areas of habitat to strengthen them and promote movement of wildlife. Green bridges, wildlife tunnels, SuDs, restoring woodland and creating new green areas and parks will be considered to mitigate severance of habitats, maintain historic features, improve connectivity, and positively integrate with landscape character.

We will aim to ensure ecological connectivity by connecting or reconnecting fragmented areas of habitat to strengthen them, increase their future resilience, and promote the movement and migration of species. The Project aimsto create a broad, well-connected corridor of green infrastructure that integrates into the surrounding landscape, including providing suitable access to water courses where relevant.

Green bridges may be considered to mitigate severance of habitats and we'll also look at other crossing types, including the use of underbridges and underpasses (for example, a greened underbridge that encourages species to safely cross beneath the railway). Our preference will be to integrate the engineering and environmental requirements into a single feature wherever practicable.

We are in regular contact with Natural England to discuss development of the proposals for EWR. We have also considered the feedback received from other environmental organisations that responded to the non-statutory consultation, considering their preferences for route alignments, and their reasoning behind such preferences, carefully.

Whilst CPRE and the BCN Wildlife Trust supported a northern approach, Natural England and The Woodland Trust expressed no preference. We are considering the importance of environmental sustainability in the activities and the decisions made in order to ensure that the Project is designed, constructed, operated and maintained in an environmentally responsible manner that minimises negative environmental impacts as far a reasonably practicable.

We are aware of the high-value nature of many areas of the water environment through which the route will pass directly or near to, including rivers and streams (including chalk streams), floodplains, wetlands, SPZs and principal aquifers, as well as the many surrounding conservation features that are sustained by the water environment. For water resources and flooding the updated Northern Approach to Cambridge would perform worse overall due to the greater area of route within flood zone and areas known to be susceptible to flooding. This

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would require design mitigations to ensure the infrastructure would be suitably resilient and avoid increasing flood risk elsewhere which are not required for the southern approach.

We will identify surface water and groundwater features that have the potential to influence or be influenced by the proposed route. Where we identify potential impacts, we will apply an avoid-control-mitigate-manage hierarchy that seeks to avoid impacts through design where possible and then looks to minimise, mitigate, and manage residual impacts where it is not possible to avoid a potential impact. Any identified potential impacts on water dependent habitats shall be considered in close consultation with ecologists and appropriate mitigation to protect these features shall be applied where necessary.

The design solution for Chapel Hill will consider the longer-term environmental impacts of the Project, and we will seek to include specific measures within the design to reduce the impact of the Project on the surrounding environment during construction and operation. This will include considering the impacts the Project will have on specific habitat types.

3.2.20 Impact on farmland

Concerns were raised that the northern route would traverse certain farms e.g. Scotland Farm, Dry Drayton, and Knapwell farm.

Suggestions were made that further work is required to minimise impacts, specifically around Dry Drayton and Madingley.

Respondents raised general concern about the railway's impacts on farmland and greenbelt.

Concerns were raised regarding the loss of farmland, countryside around Cambourne North station and also the impact on the surrounding landscape.

Respondents raised concern that quality agricultural land will be adversely affected as a result of environmental and ecological impacts associated with the proposal.

Respondents suggested that a northern route would have far less impact than the southern route on the farming activities around Cambridge, e.g. arable production.

Concerns were raised that the southern route will adversely affect farmland, which will impact crop production.

Respondents raised concern that proposals for the southern alignment have not given adequate consideration to the need for connectivity of agricultural land.

Respondents raised concern about the potential impact of the southern route on high quality arable land to the south of Cambridge.

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Concerns were raised about the impact to farmland/habitat and food production from pollution caused by the southern route, as well as boundaries, loss of agricultural land and loss of livestock.

Concerns were raised about the impact of embankments on agricultural land.

Concerns were raised regarding the potential adverse impacts the southern route will have on soil, particularly regarding soil pollution, and environmentally sensitive farms in the area.

Respondents suggested that difficulties with landowners should be overcome to allow the southern route to proceed.

General concerns were raised that agricultural land will be affected e.g. through purchase, drainage, infrastructure being built.

Concerns were raised that the railway would divide farmland.

We understand the importance of agriculture to the communities the railway will serve and are focused on finding solutions that avoid, reduce or mitigate negative impacts to farmland and holdings. The new railway will inevitably have an impact on farmland, the countryside and the landscape regardless of which approach to Cambridge is chosen.

At each stage of the planning and development process, we will assess the environmental impacts on important areas such as agricultural land (including best and most versatile (BMV) land) and the countryside. To better understand how the land is used, we will continue to work with landowners, occupiers and land managers to gather information that will help inform the design process.

We are following the environmental mitigation hierarchy by seeking to avoid significant adverse effects and, where this isn't possible, seeking to reduce and mitigate impacts and if necessary, looking at compensation. At this stage the Project is primarily focused on trying to avoid and reduce impact, by making decisions that help 'design out' the potential for environmental impacts.

EWR may impact agricultural land and access for farm vehicles during construction. We will seek to reduce and mitigate such potential impacts by working closely with farmers and landowners to understand how they use their land. We will also seek to ensure that access to severed land for farmers and farm vehicles is maintained during construction. Utility diversions, protection and the relocation of farm irrigation infrastructure may be required. We will work with farmers and landowners to ensure a comparable supply is maintained during construction.

The PEIR will include information regarding the baseline for the soil environment, including presence of BMV land, and existing agricultural and forestry land use and agricultural land holdings. The potential impacts and likely effects on the baseline soils environment arising from disturbance and displacement, and mitigation such as outline plans for soil management

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during construction will also be included within the PEIR. In addition, the potential impacts and likely effects on forestry land use and agricultural land holdings arising from land-take, demolitions of key agricultural infrastructure, severance and changes in accessibility will also be included as part of the PEIR. An ES will then be submitted as part of the DCO application.

For all alignments approaching Cambridge, agricultural land will be required for construction as well as potential environmental mitigation measures such as planting, enhancements for ecological compensation or flood compensation.

Cambridge is surrounded by farmland which means that the railway would pass through it no matter which route alignment it uses to approach the city, although it is noted that the highest-grade farmland is located to the northwest of Cambridge. The southern approach would have a shorter length through best and most versatile (BMV) land and potentially intersect a smaller number of agricultural fields than the updated Northern Approach to Cambridge, however the Northern Approach to Cambridge is considered to perform better than the southern approach due to the lower impact on agricultural infrastructure.

The Northern Approach to Cambridge is expected to have a direct impact on farmland within the area north and northwest of Cambridge, including Scotland Farm, Dry Drayton and some farms in the Knapwell and Dry Drayton Areas. The decision to continue to prefer the southern approach means that impacts on green belt and farmland in the area north and northwest of Cambridge will be avoided, including around Dry Drayton and Madingley.

It is unlikely that pollution arising from constructing or operating the southern approach will have a significant impact on food production. WeWe will continue to consider the potential impacts on livestock or livestock capacity, as well as impacts on soil resources and an assessment of this will be provided within the PEIR and then the ES.

Construction-related impacts on the environment, including potential sources of pollution, will be identified and managed, as far as reasonably practicable, by a Code of Construction Practice, or similar document, submitted alongside the DCO application. This will include measures to control impacts related to construction noise and vibration, air quality, contaminated land, ecology, historic environment, construction traffic, tree protection, surface and groundwater management, waste management and general site operations.

Since consultation, we have been reviewing the design of the route between Bedford and Cambridge and looking for opportunities to reduce the height of embankments and viaducts within the design. This includes minimising the amount the railway alignment is raised while allowing for road and other accesses to cross over or under the railway. When considering these opportunities, we aim to reduce the overall impact of our design, including on agriculture.

We'll discuss the design of the Project with relevant landowners when the land requirements are known, to seek to reduce its impact. We will identify land requirements in advance of statutory consultation and will engage landowners. Where land acquisition is required, compensation would be payable for the land acquired and reduction in value for the land

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retained, as explained in the in Guide to Compulsory Acquisition and Compensation on the EWR website.

3.2.21 Light pollution

Concern raised about impact of light pollution from new stations/car parks.

We recognise light pollution from both the construction and operation of the railway is an important issue for local communities. The potential effects of light pollution from the railway will be considered as we develop the design for the Project. For lighting, this will include considering the location and layout of lighting in stations, maintenance compounds, new access routes, construction compounds and work sites. Through the design, we will seek to avoid impacts on "sensitive receptors", such as nearby residential areas or ecological habitats. We have considered this and, this would not be a differentiating matter and would not cause us to change the decision to prefer the SATC.

3.2.22 Impact on waterways

Respondents raised concern regarding the potential adverse impacts of the southern alignment on several rivers and waterways that would be traversed by the railway in South Cambridgeshire.

Concerns were raised that the route would cause damage to waterways.

Respondents raised concern about the impact of the proposed southern route on chalk streams, specifically mentioning the Rhee near Harston, and a number of its tributary chalk streams, as well as Harlton Woods, which would be avoided by the northern route.

General concerns were raised about potential loss of footpaths and waterways.

We are aware of the high-value nature of many areas of the water environment through which the route will pass directly or near to, including rivers and streams, floodplains, wetlands, source-protection zones (SPZs) and principal aquifers, as well as the many surrounding conservation features that are sustained by the water environment, such as Bourn Brook, Nine Wells and Hobsons Brook. Based on the design presented at NSC, we do not anticipate that the southern approach would directly impact Harlton Woods.

We have worked, and will continue to do so, to identify and reduce impacts and protect the countryside, including important ecosystems such as chalk streams, wherever reasonably practicable. To help reduce impacts, we are following the environmental mitigation hierarchy by seeking to avoid significant adverse effects on the countryside and where this isn't possible, seeking to reduce and mitigate impacts and if necessary, looking at environmental compensation measures. The potential impact of the southern approach on chalk streams has been taken into account as part of this process and this matter would not cause us to change the decision to prefer the southern approach.

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For water resources and flooding as well as climate resilience the revised northern approach to Cambridge is considered to perform worse than the southern approach due to having a greater area of route within a flood zone and areas known to be susceptible to flooding. This would require design mitigations to ensure the infrastructure would be suitably resilient and avoid increasing flood risk elsewhere, thus having a greater potential impact on the riparian environment. As the revised northern approahc would perform worse, we would not look to re-open the decision to prefer the southern approach.

All potential impacts on surface or groundwater features as a result of the Project and any proposed mitigation will be developed in consultation with relevant regulators, key stakeholders and in accordance with relevant legislation and best-practice guidelines. This information will be included in the PEIR, followed by an ES submitted as part of the DCO application.

Accordingly, this matter would not alter our decision to prefer the southern approach which provides higher potential benefits in terms of unlocking growth, better connectivity and more flexible options to extend EWR services in the future.

3.2.23 Carbon emissions/footprint

Respondents suggested that the Project's carbon footprint needs to be considered from design stage and throughout the Project lifecycle.

Respondents raised concern that proposals do not adequately take into consideration climate change issues and associated carbon footprint.

Respondents were concerned that greater traction energy will be used in a southern approach, compared with the northern approach, which will result in higher emissions.

Respondents suggested that the Project defies the UK Governments 2050 carbon targets.

Concerns were raised about the increased carbon footprint during construction and the effect it will have on the net zero carbon ambitions.

Respondents raised concern about carbon emissions resulting from the soil disturbance that will be necessary for the cuttings and embankments associated with the southern route.

Respondents raised concern that a change of direction at Cambridge, which would be required for the northern route, would result in longer journey times and consumption of energy and therefore increased emissions, compared with the southern approach.

Concerns were raised that the northern route will impact new infrastructure e.g. Cambridge North station and some not yet complete developments e.g. Chisholm Trail, which will be wasteful and ultimately increase the EWR carbon footprint.

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Respondents were concerned that infrastructure and associated construction requirements needed for northern route would make carbon neutrality a significant challenge.

We are aiming to deliver a net zero carbon railway, in line with existing and developing net zero carbon policy, legislation and commitments at a global, national and local level which requires the UK to reach net zero greenhouse gas emissions by 2050. Any decision to grant development consent for the Project will need to demonstrate that it would not have a material impact on the ability of the UK Government to meet its carbon reduction targets, but EWR itself will not be carbon neutral.

As detailed in the Consultation Technical Report provided as part of the 2021 non-statutory consultation, environmental factors including Greenhouse Gases (GHGs) have been considered as part of developing the proposed route alignments.

As the Project advances, we will continue to develop our approach to delivering on our Net Zero Carbon Railway ambition and will provide further information around the scope of the target at the statutory consultation, which we expect to take place in the first half of 2024. We anticipate that we will achieve these objectives, accordingly, this matter would not cause us to change the decision to prefer the southern approach.

As the Project develops, detailed analysis of the Project and potential impacts will be undertaken. The PEIR will include information regarding the methodology used to assess the significance of the carbon emissions associated with the Project, the carbon management and reduction approaches already in place, and those which will be used during construction and operation. The ES will include a full whole life assessment of carbon emissions, including the embodied carbon of the materials used to construct the Project, which will make up a significant proportion of the total emissions. The significance of those emissions against regional, national and/or international carbon budgets and targets will be set out.

Due to the greater length of viaduct and embankments required in the Northern Approach to Cambridge design presented within Appendix F of the Non-Statutory Consultation Technical Report, the Northern Approach to Cambridge would have greater embodied carbon and require far more imported materials than the Southern Approach to Cambridge . However, the updated Northern Approach to Cambridge design has reduced bridge and embankment works and reduced works within Cambridge and the southern approach is now expected to include a greater volume of earthworks than the Northern Approach to Cambridge.

This would mean that the revised Northern Approach to Cambridge design would represent an improvement compared to the southern approach in terms of overall embodied carbon. However, we do not consider that carbon emissions specifically resulting from soil disturbance, such as through excavations, would in itself be a material differentiator between options in the context of the much greater emissions associated with construction of the railway.
We have considered this and this matter would not cause us to change the decision to prefer the southern approach which provides better overall connectivity, greater scope to unlock economic growth across the region and provides more flexibility to extend EWR services in the future.

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We take climate change and the future risk of flooding seriously and will continue to develop our approach to understanding and mitigating any Project-related risks linked to climate change. This includes considering how to accommodate changes to climatic conditions and extreme events within the design of the Project. The Northern Approach to Cambridge would perform worse in terms of climate resilience due to a greater area of the route being within flood zone and other areas known to be susceptible to flooding. This would require design mitigations to ensure that the infrastructure would be suitably resilient and avoid increasing flood risk elsewhere which would not be required at a similar level for the southern approach.

No decision has yet been made regarding the traction which will be used to operate the new EWR services between Bedford and Cambridge, but given the relatively similar length of route and taking account of the proposed gradients, traction-related emissions are not anticipated to be materially different between the northern and southern approaches. We have considered this and this matter would not cause us to change the decision to prefer the Southern Approach to Cambridge .

The revised northern approach would likely impact on the expanded Chisholm Trail due to the requirement to add additional tracks between Coldham's Lane and Cambridge station. The southern approach would have no direct impact on the Chisholm Trail.

3.2.24 Embankments, viaducts, tunnels and bridges

Respondents were concerned that embankments and concrete structures such as flyovers would have a significant visual impact on the local environment. This concern was also raised by South Cambridgeshire District Council. They suggested that the visual and landscape impact of embankments must be fully evaluated and less intrusive options explored. Concerns were raised that EWR Co are not considering tunnels due to the associated costs.

Respondents suggested that a road bridge or tunnel through an embankment should be provided wherever level crossings are closed.

Respondents raised concern that the embankment structures associated with the southern approach would exacerbate any adverse air, noise and landscape impacts, and would lead to increased Project costs. Concerns were raised about the potential impacts of high embankments to the east of Harston on wildlife and habitats. Respondents suggested that altering the location of some of the viaducts on the southern approach would reduce the height and associated adverse impacts (such as near Caldecote).

Respondents shared concerns relating to Chapel Hill and the associated high embankments, viaducts, culvert and the impact on local communities.

Respondents suggested that a viaduct over the A14 would not be visible from the American Cemetery and a bridge should be considered.

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Respondents suggested that a bridge over the A14 will not impact the landscape, or be too costly in comparison to the proposed southern alignments.

Respondents raised concern that embankments associated with the southern route will restrict existing access roads and paths in South Cambridgeshire, which will adversely impact travel and access, including within and between villages such as The Shelfords, Haslingfield and Harlton.

It was suggested that EWR Co should consider the alternative engineering solutions, technologies and plans, including those proposed by CBRR, to overcome potential issues with a northern route, with specific mention to consider a "cut-and-cover tunnel" beneath the A14 near the crematorium.

Concerns were raised that the area surrounding the southern route is located on ground considered unstable, and a cutting through Chapel Hill may put houses in Haslingfield at risk of subsidence.

Assessing the impact of the Project on the environment is a fundamental part of the design development, including possible mitigations. This includes consideration of landscape and visual impacts. We are carefully considering how the development can be designed to blend in with the local environment. This includes the consideration of where to create embankments and where viaducts are potentially required.

Further examples of where visual impacts are being considered are the potential use of landscape earthworks to soften the appearance of embankments and integrate them into the wider landscapeor using sensitive placement of appropriate planting to either screen views from sensitive receptors, or to soften the appearance and presence of engineering earthworks. Due to the greater length of viaduct and embankments required to cross floodplains and roads in the Northern Approach to Cambridge design presented within Appendix F of the 2021 consultation Technical Report, the Northern Approach to Cambridge would have had a greater visual impact. Since the consultation, we have been reviewing the design of the southern and northern approach routes and looking for opportunities to reduce the height of embankments and viaducts within the design. This includes minimising the amount the railway alignment is raised while allowing for road and other accesses to cross over or under the railway. When considering these opportunities, we aim to reduce the overall impact of our design.

The revised northern approach was considered to be a minor improvement compared to the southern approach for landscape and visual impacts due to the lower overall sensitivity of the landscape impacted, although a large viaduct over the A14 and grade-separated 'flyover' junction near Milton would still be needed. We have considered this and, this would not cause us to re-open the decision to prefer the southern approach which provides better overall connectivity, greater scope to unlock economic growth across the region and provides more flexibility to extend EWR services in the future.

We are continuing to explore the use of tunnels for the Project during the design process, but only consider them to be a practical option in specific areas where they can provide a solution

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for addressing constraints. This is partly because they are more complex and expensive to build, operate and maintain than above ground structures. Tunnels also require additional land for ventilation and exit provisions in case of emergency as well as pumping and drainage systems to deal with groundwater flows.

We will use industry best practice and learn from other comparable infrastructure Projects to inform our approach to delivery of the railway. We will use a range of techniques to estimate costs and monitor and manage risk including sensitivity analysis, quantified risk analyses and benchmarking. Value engineering and innovative approaches to design, construction, and operation of the railway, will help us to monitor and manage costs to minimise the likelihood of overspend.

The proposed southern approach would be elevated to the east of Harston where it joins with the Royston branch line at a new grade-separated junction.

The bridge/viaduct crossing the A14 for the Northern Approach to Cambridge has been included along with all other structures within the environmental assessments and cost estimates. The width of the A14 dual carriageway together with the existence of other local roads and the local topography mean that a large viaduct would be needed to carry the new railway in this location which would have a significant visual impact on the landscape.
This viaduct is not required for the Southern Approach to Cambridge , which remains our preference as it provides higher potential benefits in terms of unlocking growth, better connectivity and more flexible options to extend EWR services in the future.

We do not agree that building the railway in a trench in this area (as proposed by CBRR) would be a preferred construction method. It would create a large amount of excavated material, require significant construction and HGV movements, have much higher levels of embedded carbon and have a greater impact on hydrology than the updated Northern Approach to Cambridge design which is predominately close to ground level. In addition, this technique would have a significantly greater cost and programme implications, and have much greater long term drainage requirements. Use of trenching provide a worse customer experience as trains would predominately be within a concrete-lined retained cutting.

A cut and cover tunnel to cross underneath the newly constructed A14 would cause major disruption to this key road. We therefore do not consider a cut and cover tunnel to be a preferrable solution compared to a viaduct in this location.

The design solution will consider the longer-term environmental impacts of the Project, and we will seek to include specific measures within the design to reduce the impact of the Project on the surrounding environment during construction and operation. The design is based on proven construction practices that have been carried out successfully on other projects. It has been developed while taking account of the local context including topography, geology and environment factors.

The current southern approach design has been developed primarily using geotechnical information gathered through desktop research. There is no indication that ground conditions

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within Chapel Hill would put houses in Haslingfield at risk of subsidence, as suggested by the respondent. As the design progresses further, more detailed ground investigations will be undertaken to understand geological conditions along the route and mitigate any potential impacts arising from ground movements during construction.

We have considered this and this matter would not cause us to change the decision to prefer the southern approach.

3.2.25 Impacts of construction

Concerns were raised about the construction process, including:

- Potential road closures, increased HGV movements and severance of roads, paths and bridleways in Cambridge.
- Impacts on the countrsyide, peace and tranquility, and protected species.
- The duration of disruption.
- The amenity of nearby residents, and potential severance of communities.
- Potential impacts on the safety of children travelling to school.

It was suggested that further work is needed to understand when construction would begin and how local roads would be disrupted, and that compensation is needed for the disruption caused.

In terms of the southern approach, concerns were raised about potential delays for emergency services travelling to Addenbrooke's Hospital during the construction period. Respondents also said that agricultural land would be adversely impacted by the southern approach during construction and queried whether all such land would continue to be able to be used after construction.

Concerns were raised about the amount of concrete that would be required to construct the viaducts associated with the southern approach comparede to the northern approach . Regarding the Northern Approach to Cambridge, concern was expressed that certain villages will be disproportionately affected in the long-term by construction, including Dry Drayton and Oakington. Respondents felt that construction of a Northstowe station would mean that the Oakington community would be surrounded by Northstowe works.

There were concerns about potential traffic disruption as a result of the new or upgraded infrastructure required for the Northern Approach to Cambridge, such as bridges to cross major roads (A428, A14, A1307) and the guided busway, particularly on the A10, M11, Shelford Road, A603, A1198, Hills Road, the five-way junction in Newton, London Road, Trumpington into Cambridge, in central Cambridge, and at the level crossing at Foxton.

Respondents raised concerns for the safety of the elderly, children and pets due to increased traffic through small villages during the construction period.

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Resdpondents were concerned about the impacts of constructing the Northern Approach to Cambridge on trees, plants and wildlife between Newtown and Harston.

There were suggestions that further work would be required in relation to the Cambourne North station to minimise the impact from construction traffic.

However, others felt that less construction work would be needed for the Northern Approach to Cambridge, compared with the southern approach.

In developing our proposals, we have aimed to minimise the negative impact the construction process may have on communities and the environment. However, inevitably with an infrastructure Project of this size, there will be some people who will be directly affected and impacts which cannot be avoided. We'll continue to work to mitigate any impacts we cannot avoid and work closely with people who could be affected.

As mentioned earlier, both the northern and southern approaches would pass by various settlements in Cambridgeshire between the new Cambourne station and the point at which they join the existing rial network near Cambridge (near Milton and Hauxton respectively). Both would also involve works in the built-up area of Cambridge itself and the new EWR trains would also run through the built-up area, although the northern approach would have a greater length in the built-up area than the SATC.

The number of properties within 500 metres of the northern and southern approaches (between the Cambourne and Cambridge stations) would be broadly similar overall although, as set out in Appendix F of the Non-Statutory Consultation Technical Report, there would be more properties within 200m of the northern approach alignment compared to the SATC i.e. more properties are located closer to the northern approach. EWR Co considers that the impacts on community would be broadly neutral.

It is important to note that the works needed to deliver the northern approach would require the closure of, and replacement diversion for, Fen Road level crossing, which would have the potential for impacts on the established traveller community in this area. Whilst we consider it to be possible to provide mitigation measures (such as by constructing a replacement road access for the community), EWR Co notes that it is possible to avoid these impacts arising in the first place. The SATC avoids these impacts on the traveller community.

We are aware that roadworks related to the Project will impact traffic in the local road network. As part of the Environmental Statement, we will prepare a Transport Assessment to consider the impact on the strategic and local highway networks, road safety, and transport including use by the emergency services. We will work closely with the emergency services to understand their needs and potential concerns, who will be a key stakeholder in the development and implementation of our Traffic Management Plan.

We have considered the impact of the Project on existing highways as part of the design and assessment of route alignment options, including the A10 and A603. The southern approach would cross over the A10 and A603 near Harston and Harlton. These works would require

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some temporary road closures, however, access will be maintained for road users and for the communities connected by these roads.

We will develop a comprehensive logistics strategy to be adopted by our contractors and suppliers. This will enable us to plan the way in which people, materials and equipment are moved to and from the various worksites along the route of the proposed railway. We will work with local authorities and other developers to ensure that our use of the local highway network is appropriately managed. Changes to existing traffic patterns because of predicted construction traffic will be considered as part of the Transport Assessment that we will prepare as part of the Environmental Statement.

We are aiming to maintain existing highways, PRoW and private access roads in their current location, but where this is not possible we will ensure that a suitable alternative is available which minimises the impact on users and communities. Where a PRoW is affected, we will consider options that include closing the route temporarily, providing a temporary diversion, or opening an alternative permanent route before the existing one is closed. How the impacts are mitigated will depend on factors such as the type of works in the area and any safety implications.

We will consult in more detail on proposals for individual highways, PRoW and private access roads at the statutory consultation.

We appreciate the concerns around the impacts on the countryside and wildlife and will work to identify and reduce impacts wherever reasonably practicable. We are mapping where EWR may cross or border habitats used by protected species and other wildlife populations in order to consider how best to avoid impacting them altogether or, if this is not possible, to mitigate impacts upon them. A programme of habitat surveys and species-specific surveys will be undertaken to help understand where species and habitats are in the landscape and how they are using it. This will enable the Project to avoid, reduce, mitigate, and if necessary, compensate for identified impacts throughout the design of the railway.

We recognise the importance of ecological connectivity and reconnecting fragmented areas of habitat to strengthen them and promote movement of wildlife. Green bridges, wildlife tunnels, SuDs, restoring woodland and creating new green areas and parks will be considered to mitigate severance of habitats, maintain historic features, improve connectivity, and positively integrate with landscape character.

Construction-related impacts on the environment will be identified and managed, as far as reasonably practicable, by a CoCP or similar document submitted as part of the DCO application. This will include measures to control impacts related to construction noise and vibration, air quality, contaminated land, ecology, historic environment, construction traffic, tree protection, surface and groundwater management, waste management and general site operations. In addition, it will state permissible contractor working hours. Our teams will continue to engage with local communities to understand the arrangements which are least disruptive to people's lives and businesses and we will ensure that appropriate measures are in place to protect the flora and fauna of the corridor through which construction works will

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take place. Often this will involve the use of physical barriers and occasionally will require the relocation of species to an alternative location. Compliance with the CoCP will be secured through a Requirements of the DCO.

Where public works – such as construction of a new railway line like EWR – are carried out then the statutory compensation code enables eligible claimants to recover compensation for the loss in value of land attributable to the construction of the Project. We will comply with our legal obligations to pay compensation under the code.

We have considered, and will continue to consider, the safety of the public and workers at all stages of the design process, and this will continue during the construction, operation and maintenance or EWR. During construction, we will ensure that health, safety, and wellbeing performance meets or exceeds minimum legal requirements and industry best practice, inlcuding for children travelling to and from school.

We understand the importance of agriculture to the communities EWR will serve and we are focused on finding solutions that avoid, reduce or mitigate adverse impacts on land use and agricultural holdings. At each stage of the planning and development process, we will assess the environmental impacts on important areas such as agricultural land (including best and most versatile (BMV) land) and the countryside. As part of this, we are exploring ways to reduce the impact of the railway on agricultural land holdings and soil resources.

To better understand how the land is used, we will continue to work with landowners, occupiers and land managers to gather information that will help inform the design process. The PEIR will include information regarding baseline soils environment, including presence of BMV land, and existing agricultural and forestry land use and agricultural land holdings. The potential impacts and likely effects on the baseline soils environment arising from disturbance and displacement, as well as mitigation such as outline plans for soil management during construction, will be presented as part of the PEIR and will be presented at the statutory consultation. Potential impacts and likely effects on agricultural and forestry land use and agricultural land holdings arising from land-take, demolitions of agricultural infrastructure, severance and changes in accessibility will also be presented as part of the PEIR, with an ES then being submitted as part of the DCO application.

Construction-related impacts on the environment will be identified and managed, as far as reasonably practicable, by the CoCP or similar document, which will include measures to control impacts related to contaminated land.

As we develop the plans for EWR, consideration will be given to ensuring land required temporarily can be put back into use, for example, by ensuring soils are retained and can be reused following completion of construction works.

A Northern Approach to Cambridge would pass close to villages located north and northwest of Cambridge, including Dry Drayton and Oakington. The decision to continue to prefer the southern approach means that impacts on these villages will be avoided. A Northern Approach to Cambridge would not cross the A428 but bridges are expected to be required to cross over

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the A14 and A1307. The guided busway would also have to be reconstructed on a different alignment in order to cross above the railway.

A new station at Northstowe/Oakington was considered as a potential option for the Northern Approach to Cambridge which would have needed further investigation should the Northern Approach to Cambridge have been chosen as the preferred option. We agree that the potential impact on Oakington could have been a particular concern in this regard, but the decision to continue to prefer the southern approach means that this will be avoided.

We agree that further work is required in order to finalise the construction programme and assess impacts on local roads. We will explain our approach to the construction and operation of EWR and provide further details of potential effects of this during the statutory consultation. This does not in itself differentiate between the Northern Approach to Cambridge and the Southern Approach to Cambridge.

3.2.26 Impacts on PRoW/bridleways

Respondents raised concern regarding the potential impact of southern route on equestrian users and suggestion that further work is required to minimise these. Concerns raised that closing bridleways will adversely impact the equestrian community and require horse riders to use roads.

Concerns were raised about the impact of the southern route on the Haslingfield old quarry, and the numerous footpaths and nature walks in the area. Respondents were concerned that the southern route would have an adverse impact on land, road access and public walkways.

Respondents suggested that further work is required to preserve access to the countryside via all existing public rights of way, including Bourn to Cambridge, via Caldecote, Hardwick.

Respondents raised concern that the railway would require the disconnection of a number of footpaths (e.g. in Chapel Hill), which may adversely impact residents mental health. Concerns were also raised that the railway may divide villages that it passes through and that footpaths and bridleways will not be as accessible.

Our designs consider equestrian users where appropriate and we will promote and prioritise both active and sustainable transport modes as we continue to develop the design. Our proposals for PRoWs will be designed to the latest standards and will maintain or increase safety for walkers, cyclists and horse riders.

During construction, we will seek to reduce impacts on PRoWs and maintain existing highway connections wherever feasible. Where it is not feasible to retain existing highways, PRoW and private access roads in their current location, we will ensure that a suitable alternative is available which minimises the impact on users and communities. Where a PRoW is affected, we will consider options that include closing the route temporarily, providing a temporary diversion, or opening an alternative permanent route before the existing one is closed. How

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the impacts are mitigated will depend on factors such as the type of works in the area and any safety implications.

Based on the designs presented at NSC, we do not anticipate directly impacting Haslingfield old quarry.

We recognise that the countryside, parks and green spaces, and access to them, are important to local communities and will work to reduce the impact of the Project on these.

We understand the importance of agriculture to the communities the railway will serve and we are focused on finding solutions that avoid, reduce or mitigate negative impacts to farmland. It is not envisaged that the southern approach would pass through villages en route. As such, these matters would not cause us to re-open the decision to prefer the southern approach.

3.2.27 Community impacts

Respondents were concerned that because there are no stations between Cambourne and Cambridge south, the communities in this area will not benefit from improved connectivity.

Respondents suggested that the train line needs to improve public transport and stop at the passing villages.

Concerns were raised that communities and villages adjacent to the southern route will not benefit from the proposals.

Respondents were concerned that a number of communities will be affected by long viaducts, specifically Highfields Caldecote and Harston.

Respondents suggested that a northern approach into Cambridge would avoid impacting the countryside and villages to the south including Toft, Harlton, Little Eversden, Hauxton, Little Shelford, Great Shelford, Harston and Haslingfield.

Concerns were raised about the impact of the southern alignment on golf courses.

Respondents raised concern regarding possible adverse impacts of road closures during construction on communities, businesses and local economies. Concerns were raised regarding possible impacts of a southern approach on emergency services access/egress in associated villages and on local churches and people's ability to practice religion.

Respondents expressed the opinion that the area to the north of Cambridge is less rural than south Cambridge, with more large-scale transport infrastructure, and therefore would have less impact on the character to the area.

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Respondents suggested that local amenities and green space should be protected, specifically The Garden Centre, cemetery and the Recreation Ground at Oakington and Milton Country Park.

Concerns were raised that the southern route will adversely impact the quiet nature of many communities.

Concern was raised regarding the possible adverse impacts of the southern route on people's mental health.

Respondents were concerned about the possibility of southern Cambridge becoming more urbanised and rural Cambridgeshire becoming part of Cambridge urban area/city. There was concern over villages becoming more urbanised – e.g. creation of a 'Greater Cambourne' if Cambourne North were to become a reality.

Concern was raised over impact to local schools and children's health, with Histon mentioned specifically. Concerns included the safety of children in Harlton travelling to schools during construction.

Concerns were raised regarding potential adverse impacts of southern route on school journeys and the education of pupils/students in the area.

General concerns were raised about the impact on routes for schools, particularly Comberton Village College as there are over 20 buses that transport children to and from school.

Respondents were concerned that communities adjacent to the A14 have had years of disruption already, which would be exacerbated by the northern route.

Respondents suggested that litter and fly tipping would increase as a result of the Project.

Concerns were raised about the impact of embankments, road closures and diversions and freight trains on community life, specifically Chalton Hamlet Bedford.

Respondents raised concern that the area surrounding Dry Drayton is already over developed and therefore a railway is not needed.

Concerns were raised that the southern approach would adversely impact surrounding communities, particularly areas in Colmworth.

Respondents raised concerns that the character of Great Shelford will adversely impacted by a southern alignment.

EWR is addressing a fundamental lack of connectivity in the region. The Project will deliver a range of benefits to the local, regional and national economy. It will support economic growth of one of the most successful regions in the economy through the provision of cheaper, greener and faster transport in an area constrained by poor east-west connectivity. Improved

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connectivity will join up key business clusters, broaden the labour pool for businesses, provide access to markets, enable greater collaboration and innovation for businesses and universities, and attract both investment and top talent to the UK.

In addition to improving local connectivity, EWR will also offer new journeys to local communities because of its key intersections with most of the UK's main rail lines – including the East Coast Main Line, Midland Main Line and West Coast Main Line – for example making it easier to get from Milton Keynes to Leeds or Cambridge to Manchester, as well as improved connections to international airports at Luton and Stansted.

The proposed EWR station locations have been chosen to support the delivery of new housing and help create new jobs along the corridor, as well as helping to ease pressure on the housing market. Whilst there is not considered to be sufficient demand at other locations on the southern approach routes to justify an additional station stop in terms of cost and additional journey time, the southern approach design does not preclude the possible construction of additional stations at a future time. Accordingly, this matter would not cause us to re-open the decision to prefer the southern approach which still provides better overall connectivity, greater scope to unlock economic growth across the region and provides more flexibility to extend EWR services in the future.

One of EWR's core priorities is to increase connectivity across the Oxford to Cambridge area. This includes consideration of local connectivity, bus services and customer experience while travelling to EWR stations within our station designs. We will promote and prioritise both active and sustainable transport modes, and will continue working with other organisations, including bus operators, to improve facilities, including interfaces and interchange with bus services at stations and provision of onward travel information.

In developing our proposals, we have aimed to minimise the negative impact this may have on communities and in particular people's homes. However, inevitably with an infrastructure Project of this size, there will be some people who could be directly affected. We will continue to work to mitigate any impacts we cannot avoid and work closely with those people who could be affected.

Assessing the impact of the Project on the environment is a fundamental part of the design of the Project's development, including possible mitigations. This includes consideration of landscape and visual impacts and we are carefully considering how the development can be designed to blend in with the local environment, such as where to create embankments and where viaducts are potentially required.

Since consultation, we have been reviewing the design of the route between Bedford and Cambridge, looking for opportunities to reduce the height of embankments and viaducts and to move these structures further from properties, including within the Highfields Caldicott and Harston areas. We are considering how we can minimise the amount that the railway alignment is raised while allowing for road and other accesses to cross over or under the railway. When considering these opportunities, we aim to reduce the overall impact of our design.

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The southern approach would run past the villages of Haslingfield, Harston, and Hauxton and would have visual impacts on the landscape in this area by introducing new railway infrastructure. We'll consider how this can be mitigated as we develop the design, including through potential landscaping and planting to integrate the new railway into the landscape.

Both the northern and southern approaches would pass by various settlements in Cambridgeshire between the new Cambourne station and the point at which they join the existing rial network near Cambridge (near Milton and Hauxton respectively). Both would also involve works in the built-up area of Cambridge itself and the new EWR trains would also run through the built-up area, although the northern approach would have a greater length in the built-up area than the SATC.

The number of properties within 500 metres of the northern and southern approaches (between the Cambourne and Cambridge stations) would be broadly similar overall although, as set out in Appendix F of the Non-Statutory Consultation Technical Report, there would be more properties within 200m of the northern approach alignment compared to the SATC i.e. more properties are located closer to the northern approach. EWR Co considers that the impacts on Community would be broadly neutral.

It is important to note that the works needed to deliver the northern approach would require the closure of, and replacement diversion for, Fen Road level crossing, which would have the potential for impacts on the established traveller community in this area. Whilst we consider it to be possible to provide mitigation measures (such as by constructing a replacement road access for the community), EWR Co notes that it is possible to avoid these impacts arising in the first place. The SATC avoids these impacts on the traveller community.The emerging preferred route alignments that were presented in the 2021 consultation Technical Report would have had a direct impact on Cambridge Meridian Golf Club. Since consultation, we have moved the alignment slightly to the east and amended the design to run in cutting beneath the B1046 Comberton Road, between Comberton and Toft. This means with a minor realignment of the road a direct connection can be maintained between the two towns and the direct impact on Cambridge Meridian Golf Club can be avoided. Accordingly, this matter would not cause us to re-open the decision to prefer the southern approach.

We will aim to reduce impact on existing travel routes during construction. We will consider how we move our people, materials and equipment to and from the various worksites along the route of the proposed railway. We will work with local authorities and other developers to ensure that our use of the local highway network is managed and to ensure that construction traffic is appropriately managed. Changes to existing traffic patterns because of predicted construction traffic will be considered as part of the Transport Assessment that will form part of the ES.

As mentioned, we have considered the impact of the Project on existing highways, PRoW and private access roads as part of the design and assessment of route alignment options and we are seeking to maintain existing highway connections wherever feasible. Works are planned for a number of roads for the southern and northern approaches, which may require some

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temporary road closures. However, access will be maintained to communities whilst this work is undertaken which means that this would not differentiate between the Northern Approach to Cambridge and southern approach.

Emergency service access is an important consideration as we develop the proposals for the Project. We invited emergency services to participate in the 2019 and 2021 non-statutory consultations and we will continue to seek feedback as the EWR design progresses. We will also engage the emergency services as a key stakeholder in the ongoing development of the design.

We have considered and will continue to consider, the safety of the public and workers at all stages of design and this will continue during construction and into operation and maintenance. During construction, we will ensure that health, safety, and wellbeing performance meets or exceeds minimum legal requirements and industry best practise. The CoCP or similar document will set out additional standards to maintain safety and security. Compliance with the CoCP will be secured by the Requirements in the DCO.

These mitigations mean that we do not consider that the construction of the southern approach would pose any material risk to the safety of children travelling to school, whether in Harlton or elsewhere, and this matter would not cause us to re-open the decision to prefer the southern approach.

We aim to maintain connectivity between villages such as The Shelfords, Haslingfield and Hauxton, and the Chapel Hill area. Each road link has been considered on a case-by-case basis and, where the railway will impact on the existing connections, alternative provisions have been proposed including diversionary route or grade separated replacements. Accordingly, this matter would not cause us to re-open the decision to prefer the southern approach. The preferred southern approach would not impact Washpit Brook as it would be located a significant distance away.

Locating the railway to follow the existing A428 and A14 road corridors between Cambourne and Cambridge is likely to have significant impacts on the existing settlements located along these routes, not least because it would 'sandwich' these villages between the new railway and the adjacent dual carriageways.

Whilst the northern approach would avoid impacts on Toft, Harlton, Little Eversden, Hauxton, Little Shelford, Great Shelford, Harston and Haslingfield, it would have direct and indirect impacts on the countryside and villages north and north west of Cambridge, namely Dry Drayton, Oakington, Westwick, Histon, Landbeach and Milton. Accordingly, this matter would not alter our decision to prefer the southern approach.

We recognise that the countryside, parks and green spaces, and access to them, are important assets and will work to reduce the impact of the Project. We are following the environmental mitigation hierarchy by seeking to avoid significant adverse effects on the countryside and, where this isn't possible, seeking to reduce and mitigate impacts and if necessary, providing compensation where this is feasible. The decision to continue to prefer the southern approach

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means that any impacts on local amenities and green space that would have arisen on a northern approach will be avoided.

We do not accept that litter and fly tipping would increase as a result of the Project and this does not differentiate between the northern and southern approaches. We've taken into consideration a number of factors when assessing the different station location options, including potential housing delivery opportunities for each location, as well as the associated challenges regarding housing deliverability. We've also considered the potential for coalescence of smaller villages along the route, due to an increase in development. As stated in paragraph 9.6.28 of the 2021 Non-Statutory Consultation Technical Report, a station at Cambourne North and the subsequent housing and economic development is expected to be able to retain separation from and between existing settlements.

We're not promoting housing development, and the allocation of land for development is a matter for local planning authorities. Any future development brought forward would need to take account of all relevant planning considerations such as proximity to existing settlements and would be addressed through the normal planning processes. Effects upon the identity of smaller villages and towns as a result of development is a matter for the assessment of those developments and not for EWR.

Environmental impacts – and potential resulting impacts on human health – will be considered throughout the Project's development with the aim of avoiding and reducing them where possible through the design. The Northern Approach to Cambridge would have passed approximately 750m away from the new location of the Histon and Impington Park Primary School. The decision to continue to prefer the southern approach means that any potential impacts on this school will be avoided. Likewise, the decision to continue to prefer the southern approach means that impacts on the areas surrounding Dry Drayton will be avoided. Charlton Hamlet in Bedford is not located close to either the northern or southern approaches, so this matter would not differentiate between the northern and southern approaches. Accordingly, this matter would not cause us to re-open the decision to prefer the southern approach.

Based on the design presented in Appendix F of the Non-Statutory Consultation Technical Report, we stated that, in terms of the environment, the northern approach would not be likely to perform materially better than the southern approach. However, the revised northern approach has lowered the alignment through the countryside and reduced works, associated demolitions, and potential impact on environmental features including priority habitat and open green space within Cambridge. For environmental impacts and opportunities, the updated Northern Approach to Cambridge design is considered to be a minor improvement overall compared to the southern approach.

Colmforth is approximately 3km away from the proposed railway in Bedfordshire. Accordingly, any impacts on this settlement would not differentiate between the Northern Approach to Cambridge and Southern Approach to Cambridge and this would not cause us to re-open the decision to prefer the Southern Approach to Cambridge.

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3.2.28 Homes and property

Concerns were raised about the potential impacts of EWR on homes and property in general, including the proximity of the railway (and freight trains) to homes; decreasing property values; and the requirement for demolitions.

Whilst respondents said that the number of homes within 200 metres of EWR would be seven times greater on the southern approach than the northern approach, others thought that the proposals did not provide enough detail regarding the proximity of the railway line to adjacent properties. Suggestions were made that EWR operational hours are limited to 7am-9:30pm due to the proximity of the railway to residential properties.

There were particular concerns that the southern approach would reduce property values in Harlton; and would reduce the desirability of South Cambridgeshire in general.

Whilst there were suggestions that the level of property demolitions proposed should be minimised by EWR Co, and also that Route E would result in the demolition of more homes than the Northern Approach to Cambridge; others said that the demolition of houses in the north of Cambridge should not be an obstacle for the Project.

Other concerns raised included that EWR Co's cost calculations do not account for the reduction in value of residential properties; and that that there should be proactive and early compensation for any reduction in property value as a result of the proposals.

Concerns were raised that the southern approach passes within close proximity to existing residential homes.

We appreciate that disruption from the construction and operation of EWR is an important issue for local communities, and we will seek to reduce impacts as far as reasonably practicable. Appendix F of the Non-Statutory Consultation Technical Report stated that 3,800 properties would be within 200m of the southern approach alignment, whereas 4,600 would be within 200m of the Northern Approach to Cambridge alignment. The decision to continue to prefer the southern approach that a lower number of properties in the city are likely to be affected and impacts in the area north and northwest of Cambridge will be avoided.

EWR proposed operational hours for passenger services in Appendices A and B of EWR Co 2021 Consultation Technical report, with less intensive train movements as required outside these hours for infrastructure maintenance, inspection, freight, and other activities as part of the national rail network.

We are aware that the Project could have potential impacts on local property values and that this could have consequential impacts on householder's wellbeing. We have set up the Need to Sell (NTS) Property Scheme to support property owners who have a compelling reason to sell their property but due to EWR are unable to do so other than at a substantially reduced value or, if they are unable to sell their property, would face an unreasonable burden in the next three years. Applicants will need to satisfy five criteria including evidencing that they currently have a compelling need to sell. The NTS scheme reflects consultation feedback received in 2021. More information can be found in the NTS Property Scheme Guidance and Application

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Form [Link to be added]. Compensation is available under the statutory compensation code for reduction in property value experienced by eligible landowners. In the meantime, we are also introducing a Need to Sell scheme under which we would buy property if owners are unable to sell on the open market due to the impact of the Project. An estimation of compensation payments is included within the land costs, which are included in our overall cost estimates and have been taken into account.

Environmental impacts and opportunities, which include consideration of demolitions and impacts on housing and communities, is one of the fifteen Assessment Factors used during our decision making process. The design for the Northern Approach to Cambridge as presented at the 2021 consultation would require the demolition of 40 – 85 properties, however due to the reduced amount of four-tracking of the West Anglia Main Line the updated design is now expected to require no demolitions. The southern approach design presented at NSC stated five demolitions would be expected to be required for this option.

In developing our proposals, we have aimed to minimise the negative impact this may have on communities and in particular people's homes. However, inevitably with an infrastructure Project of this size, there will be some people who could be directly affected. We will continue to work to mitigate any impacts we cannot avoid and work closely with people who could be affected. We will discuss the design of the Project with the landowners when the land requirements are known. This will be in advance of the statutory consultation. Accordingly, this matter would not cause us to re-open the decision to prefer the southern approach.

3.2.29 Community benefits

Concerns were raised that many of the communities that would be impacted would not realise any benefits from EWR.

Respondents suggested that a southern route should go north of Hauxton and Haslingfield, as the villages will not benefit from the line.

Respondents suggested that while construction is challenging for a northern route, there is likely to be greater long-term benefit for communities north of Cambridge than will be realised by proposed route to the south – with specific reference to opening up more employment and educational opportunities north of Cambridge (e.g. the Science Park).

Respondents suggested that EWR could serve and improve transport links for growing communities and new developments north of Cambridge, including the areas of Northstowe, Waterbeach and Longstanton, as well as St Neots and Cambourne.

Concerns were raised that Cambridge Approaches and Cam-Bed Rail Road have not identified any benefits to the southern route.

It is expected that the new rail link would support significant local economic growth that will benefit individuals, communities, educational and research establishments, and businesses in the Oxford to Cambridge region. EWR will provide increased connectivity to households and

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businesses across the route. For households, residents will benefit from decreased journey times to areas along EWR and workers will be better connected to additional job opportunities. Businesses will be able to attract an increased pool of labour due to the reduction in journey time. We consider that the decision to continue to prefer the southern approach is more likely to advance these aims.

The northern approach would afford direct connectivity to Cambridge North station which is situated near the Cambridge Science Park, whilst the southern approach would afford direct connectivity to Cambridge South station, which is adjacent to the Biomedical Campus, a major pharmaceutical centre. Cambridge South station will offer approximately three times the number of jobs within fifteen minutes walk than Cambridge North station.

It would not be possible for EWR trains to serve Cambridge South directly if the Northern Approach to Cambridge is selected, whereas it would be possible for trains to be extended directly to Cambridge North subject to relatively minor upgrades to the track and platforms at and near the current station. The southern approach also provides greater flexibility to extend the new EWR services to other destinations north and east of Cambridge directly in the future, subject to infrastructure upgrades elsewhere on the rail network. This means that the southern approach would provide greater direct connectivity to more places.

In addition, communities north of Cambridge already have public transport links to north Cambridge and the Science Park via the guided busway, and existing services on the WAML. EWR is not required in order for planned development to come forward because adequate public transport provision is already in place or planned.

Both Northern Approach to Cambridge and Southern Approach to Cambridge routes would directly serve stations at Cambourne and south of St Neots.

Construction of an alignment north of Haslingfield and Hauxton would be expected to have a significant impact on infrastructure and communities between Trumpington and Great Shelford/Hauxton and would need to cross large areas of floodplains. It would also be necessary to construct an additional crossing of the M11 motorway instead of utilising the existing bridge on the Royston Branch line (which is a feature of the proposed southern approach) therefore adding cost and complexity.

An alignment along the route of the previous Varsity Line was explored but was discounted due to impact on housing and communities within Cambridge as well as a consequence of its impact on the guided busway.

3.2.30 Economic benefits

Respondents suggested that a northern route would create more economic revenue through commuter links.

Respondents express the opinion that a northern approach would provide regeneration and a “levelling up” to north Cambridge.

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Concerns were raised that a northern approach to Cambridge, when compared with a southern approach, does not provide as much economic benefit, is less able to satisfy the overall objectives of EWR and also presents more operational difficulties.

Respondents suggested that a northern route, including a station at Northstowe and north of Cambourne, would bring large-scale economic and cost benefits to the area, including helping residents to access jobs and growing housing developments.

Respondents suggested that additional information is provided regarding the economic benefits from both passenger and freight.

The Southern Approach to Cambridge would provide much-needed connectivity directly to the new Cambridge South station which is adjacent to the Biomedical Campus, the largest employment site in Cambridge. This would not be possible via the Northern Approach to Cambridge, which means that commuters would need to change trains. By comparison, it would be possible for EWR trains on the Southern Approach to Cambridge to be extended to Cambridge North subject to relatively minor upgrades to the track and platforms at and near the current station in order to facilitate the extra services.

It would be possible for the Southern Approach to Cambridge to provide four trains per hour on an even interval pattern. This would be more attractive to passengers. This even interval service pattern cannot be provided on a northern approach without either significant additional four-tracking in Cambridge (leading to significantly higher requirements for property acquisition and demolition) or detrimental impacts on current and planned rail services provided by existing operators.

Accordingly, this matter would not alter our decision to prefer the Southern Approach to Cambridge which provides higher potential benefits in terms of unlocking growth, better connectivity and more flexible options to extend EWR services in the future.

EWR can support the national levelling up agenda by providing the right environment for businesses to grow across an area where new business formation, innovation and entrepreneurship is already strong. This will aid not only new business growth and survival, but also assist in retaining businesses and investment in the UK encouraging further investment and scaling up across other parts of the country. Many of the businesses and industry sectors that EWR will support already have strong links to other parts of the country considered priority areas for levelling up.

In order to assess the economic impacts of the Project, our analysis includes the impact of East West Rail not only on transport users but also on the wider economy, specifically its impact on economic growth, investment, jobs, housing, and connectivity across both the region and the country (an approach consistent with current guidance outlined in DfT's WebTAG and the HM Treasury Green Book). This will form part of the strategic and economic cases for the Project and will be included within the Business Case process. We have considered how the proposed route alignments would contribute to enabling housing and supporting economic growth.

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Both the updated Northern Approach to Cambridge and the Southern Approach to Cambridge afford access to high quality jobs in central Cambridge, and the forecast development of Cambridge North and expansion of the Biomedical Campus will only see these numbers increase. However, we believe that more economic growth will be unlocked by a southern approach over a northern approach to Cambridge.

Regarding operational difficulties, as explained in Appendix F of the Non-Statutory Consultation Technical Report, any future services on a northern approach utilising the EWR lines to travel further east to Norwich and Ipswich could not do so without reversing manoeuvres at Cambridge station. This would still be the case for the revised northern approach design.

It is noted that for both a northern and a southern approach, additional infrastructure work would be required outside of the scope/ remit of EWR to enable these onward journeys.

Both the Northern Approach to Cambridge and Southern Approach to Cambridge would provide access to jobs and housing. However, Northstowe is already served by the guided busway which provides fast, frequent, direct public transport links to the Cambridge Science Park, Cambridge North station and Cambridge city centre. An EWR station in this area would duplicate this existing provision.

Accordingly, this matter would not alter our decision to prefer the Southern Approach to Cambridge which provides higher potential benefits in terms of unlocking growth, better connectivity and more flexible options to extend EWR services in the future.

The business case is being developed in parallel with the design. Further information on the economic benefits of the Project, including from both passenger and freight, will be provided at statutory consultations and within the DCO Submission, and submitted to DfT as part of the Full Business Case.

3.2.31 Impacts on green spaces/amenities

Concerns were raised that local amenities and leisure businesses would be impacted by the northern approach e.g. Oakington garden centre, the riding school in Dry Drayton.

Respondents raised concern that a northern route would impact the proposed Cambridge Country Park and Sport Lakes.

Concern was also raised regarding impact on green space, woodland and countryside associated with local villages e.g. Knapwell.

In developing our proposals, we have aimed to minimise the negative impact this may have on communities and, in particular, on people's homes. However, inevitably with an infrastructure Project of this size, there will be some people who could be directly affected. We will continue to work to mitigate any impacts we cannot avoid and work closely with people who could be affected. The decision to continue to prefer the Southern Approach to Cambridge means that

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any potential impacts on local amenities and businesses in the area north and northwest of Cambridge, including Oakington garden centre and the Dry Drayton riding school, will be avoided.

The decision to continue to prefer the Southern Approach to Cambridge means that impacts on the proposed country park and sport lakes north of Cambridge could be avoided if these developments were to come forward.

We recognise that the countryside, parks and green spaces, and access to them are important and will work to reduce impacts. We are following the environmental mitigation hierarchy by seeking to avoid significant adverse effects on woodland and ancient woodland and where this isn't possible, seeking to reduce and mitigate impacts and if necessary, looking at compensation. At this stage the Project is primarily focused on trying to avoid and reduce impact, by making decisions that help 'design out' the potential for environmental impacts. Both the revised northern and southern alignments would both be roughly the same distance from Knapwell and would have broadly the same impact in this area which means that this is not a differentiating factor.

3.2.32 Impacts on community access/connectivity

Respondents raised concern that the northern route would run close to Dry Drayton and impact the main route out of the village.

Concerns were raised that northern route would impact community connectivity.

Respondents raised concern regarding potential disruption to active travel routes and public rights of way e.g. cyclists who travel from Bar Hill through Dry Drayton, access from Landbeach to Cambridge, Gunn Lane and the Westwick bridleway.

Respondents raised concern over the potential severance of villages and that connectivity to countryside would be adversely impacted by the proposals.

Respondents were concerned that some villages would be completely surrounded by major transport routes and that local connectivity will be impacted.

There was concern that the Southern Approach to Cambridge proposals specifically will result in reduced connectivity for communities within the surrounding area, potentially isolating them.

Respondents raised concern about the amenities in Haslingfield, Harston and Hauxton and suggested that the proposals will adversely impact community connectivity (e.g. Harlton, Toft, Haslingfield, Hauxton), which may lead to village fragmentation and changes in travel patterns.

Concerns raised regarding the possible impacts of the proposed route on Landbeach village, including connectivity within the village and also with Milton.

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Concerns were raised about the loss of Hauxton School and damage to Chapel Hill. Concern raised over the risk of school children having to cross the rail line as pedestrians or having to walk through long dark tunnels. Concern that the proposed southern approach to Cambridge will sever important roads that connect villages, and will impact schools, including Haslingfield Primary School and Comberton Village College.

Whilst the Northern Approach to Cambridge route would run near the eastern edge of Dry Drayton, the decision to continue to prefer the Southern Approach to Cambridge means that there will be no impact on access routes to the village.

In developing our proposals, we have aimed to minimise the negative impact this may have on communities, including on local connectivity The decision to continue to prefer the Southern Approach to Cambridge means that impacts on communities in the area north and northwest of Cambridge would be avoided.

We note that the proposed southern route would have no impact on active travel routes between Bar Hill and Dry Drayton, access from Landbeach to Cambridge, Gunn Lane and the Westwick bridleway Generally, and with regard to active travel, we will consider the end to end journey, including how services can connect to existing modes of transport. Provision of facilities to encourage use of active travel modes, including walking, wheeling and cycling, is a key consideration to the customer proposition as designs are developed. We have considered the impact of the Project on existing highways, PRoW and private access roads as part of the design and assessment of route alignment options, including for routes mentioned by respondents. As mentioned, we are seeking to maintain existing highway connections wherever feasible. Where it is not feasible to retain existing highways, ProW and private access roads in their current location, we will ensure that a suitable alternative is available which minimises the impact on users and communities.

The decision to continue to prefer the Southern Approach to Cambridge means impacts on active travel routes and PROWs in the area north and northwest of Cambridge, including those identified by respondents, will be avoided.

Both the northern and southern approaches would pass by various settlements in Cambridgeshire between the new Cambourne station and the point at which they join the existing rial network near Cambridge (near Milton and Hauxton respectively). Both would also involve works in the built-up area of Cambridge itself and the new EWR trains would also run through the built-up area, although the northern approach would have a greater length in the built-up area than the SATC.

The number of properties within 500 metres of the northern and southern approaches (between the Cambourne and Cambridge stations) would be broadly similar overall although, as set out in Appendix F of the Non-Statutory Consultation Technical Report, there would be more properties within 200m of the northern approach alignment compared to the SATC i.e. more properties are located closer to the northern approach. EWR Co considers that the impacts on the community would be broadly neutral.

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It is important to note that the works needed to deliver the northern approach would require the closure of, and replacement diversion for, Fen Road level crossing, which would have the potential for impacts on the established traveller community in this area. Whilst we consider it to be possible to provide mitigation measures (such as by constructing a replacement road access for the community), EWR Co notes that it is possible to avoid these impacts arising in the first place. The SATC avoids these impacts on the traveller community. As set out in Appendix F of the Non-Statutory Consultation Technical Report, both the Northern Approach to Cambridge and Southern Approach to Cambridge would interact with approximately the same number of road crossings which means that there will be some impact regardless of which approach is selected. We note that many villages in the area north and northwest of Cambridge are already located in close proximity to existing major transport infrastructure such as the A14 dual carriageway. The construction of EWR in this area has the potential to result in impacts to these communities. However, the decision to continue to prefer the Southern Approach to Cambridge means that impacts in the area north and northwest of Cambridge will be avoided.

The Southern Approach to Cambridge alignment would run adjacent to residential properties at Highfields Caldecote and in proximity to other residential areas north and south of the Bourn Brook. Several measures to reduce the potential landscape and community impacts of the Southern Approach to Cambridge have been considered, such as appropriate replacement of road links and PRoW.

In relation to agriculture and landscape, the areas north and south of Cambridge are both rural in character and contain a variety of existing settlements and transport infrastructure. The Northern Approach to Cambridge design presented within Appendix F of the Non-Statutory Consultation Technical Report would have a high visual impact due to the length of the viaduct and embankments required to cross floodplains and roads in this area. However, the updated Northern Approach to Cambridge, which has been lowered in the landscape, is considered a minor improvement for Landscape and Agriculture when compared against the Southern Approach to Cambridge due to the lower overall sensitivity of the landscape and avoidance of the loss of agricultural infrastructure.

We recognise that the countryside, parks and green spaces, and access to them are important and will work to reduce impacts. The decision to continue to prefer the Southern Approach to Cambridge means that impacts on access to the countryside in the area north and northwest of Cambridge would be avoided.

The detailed design for the railway will be carried out in accordance with recognised industry standards to provide a high level of safety, including for school children. We have considered, and will continue to consider, safety of the public and workers at all stages of design and this will continue during construction and into the route's operation and maintenance. We are satisfied that the Southern Approach to Cambridge will not have any material impact on the safety of school children. Accordingly, this matter would not cause us to re-open the decision to prefer the Southern Approach to Cambridge.

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The Southern Approach to Cambridge route is not expected to directly impact Hauxton School. Regarding access via the level crossing, whilst no decision as to whether it will be closed or not has yet been taken, if the level crossing needs to be closed then there are a number of options that we will consider to ensure access to the school is maintained, including the provision of a diversion or a grade separated replacement (such as a road bridge) in the existing location, which could be for general traffic or restricted to only those using active travel modes such as pedestrians and cyclists.

Regarding impact on Chapel Hill, we're developing the design and considering options to reduce the potential impacts on Chapel Hill. Further details of the proposed design will be provided at the forthcoming statutory consultation.

These matters would not cause us to re-open the decision to prefer the Southern Approach to Cambridge.

3.2.33 Flooding

There are concerns that the extent of engineering works would displace a large volume of water and increase flood risk to nearby properties. It is argued that the local sewers cannot cope now in times of heavy rainfall, even before the increased runoff from the track.

Concerns were also raised that a northern approach would encourage further housing developments across flood plains and impact drainage and sewerage.

Concerns were raised regarding an increased risk of flooding associated with the southern route and that it passes through areas which flood regularly.

Respondents raised concern about whether new housing developments were taken into consideration when performing flood assessments.

Respondents raised concern that there is a lack of Sustainable drainage systems (SuDS) incorporated into the EWR Project proposals.

Respondents suggested that technical difficulties associated with floodplain along the northern route can be overcome as areas to the north of Cambridge will have large housing developments built.

Respondents suggested that a station should be considered at Northstowe as it would avoid the floodplains.

There was general concern raised about the impact of the northern route on flood plains and drainage.

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Concerns were raised about knock on effect of infrastructure on flood plains and flooding risk within surrounding villages e.g Elsworth already suffers, in addition to Dry Drayton, Oakington, Histon, Cottenham.

Respondents were concerned that if the northern route was preferred there would be a need for a junction with the existing WAML which would be located north of Milton and sit on floodplain.

Concerns were raised around drought risk and drainage problems associated with southern approach and suggestion that EWR works with new housing developments and planners to ensure water management systems are integrated to ensure preservation of existing water sources.

The railway drainage system design will give appropriate consideration to impacts on existing sewers, drainage and water systems and will seek to avoid or mitigate potential adverse impacts.

We will develop flood risk assessments to help inform the design process, which will incorporate taking account of and planning for the future requirements of a changing climate. The PEIR will include baseline data supported by surveys, flood modelling and a preliminary construction and operation assessment of impact on surface water, ground water, flood risk and land drainage and this will be shared at the statutory consultation.

The Northern Approach to Cambridge would perform worse than the Southern Approach to Cambridge in terms of impact on water resources and flooding and climate resilience due to the greater length of route within flood zone and areas known to be susceptible to flooding. This would require design mitigations to ensure the infrastructure would be suitably resilient and avoid increasing flood risk elsewhere.

Accordingly, this matter would not cause us to re-open the decision to prefer the Southern Approach to Cambridge.

We have been monitoring the progress of new and emerging development plans across the area, including in Bedford Borough, Central Bedfordshire and the proposed Greater Cambridge Local Plan. Existing or proposed projects (i.e. permitted local plan projects) will be considered as part of the EWR flood modelling and assessments. However, any future development brought forward would need to take account of considerations such as flood risk, drainage, sewerage, and the proximity to existing settlements, addressed through their respective planning processes.

We acknowledge that it is technically possible for new railways to be constructed through floodplain, and all alignment options approaching Cambridge would cross areas of flood zone.

However, building the new railway in a flood zone would increase the complexity of the construction due to poorer ground conditions, the requirement to raise the alignment above

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predicted flooding levels and the need to mitigate potential impacts on hydrology and flood risk for surrounding communities.

The Northern Approach to Cambridge design presented in Appendix F of the Non-Statutory Consultation Technical Report included a 3.4km viaduct. This was included as a mitigation measure regarding flood risk and to cross above existing roads. Further optioneering on the revised northern approach has included further flood risk reviews. This indicates that the length of viaduct could be reduced, plus design amendment, such as reconstructing local roads and the guided busway to cross above the railway on bridges. However, these amendments have not affected our decision to prefer a southern approach, which better meets the objectives of the Project.

The northern approach would have a junction with the WAML at Milton, which is in a floodplain. The presence of new infrastructure within a large area of floodplain would require design of the infrastructure to be resilient to flood risk and avoid increasing flood risk elsewhere. The decision to continue to prefer the Southern Approach to Cambridge means that these risks would be avoided.

Moving the alignment to connect to a station at Northstowe would have a greater impact on more residents and the railway would still need to cross through large areas of floodplain and as such, we do not consider this to be a feasible option.

Based on the current designs, we do not anticipate that EWR would have a significant adverse effect on existing water sources. Further work will be done in later stages of the Project to confirm that this remains the case. We are committed to protecting the environment by finding approaches to delivery that avoid, reduce or mitigate negative environmental impacts and will continue to consider how we can best avoid impacts on water and drainage systems as we develop the design.

Utility and drainage works will conform to the appropriate regulatory and statutory clearances and distances, with works carried out in accordance with health, safety, and construction legislation, as well as relevant technical standards and guidance.

Construction-related impacts on the environment will be identified and managed, as far as reasonably practicable, by a Code of Construction Practice or similar document submitted alongside the DCO. This will include measures to control impacts related to construction noise and vibration, air quality, contaminated land, ecology, historic environment, construction traffic, tree protection, surface and groundwater management, waste management and general site operations.

Accordingly, this matter would not cause us to re-open the decision to prefer the Southern Approach to Cambridge.

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3.2.34 Requests for information

Respondents requested more detailed mapping, including overlay on a satellite map, so people can more clearly see how the proposals relate to the surrounding area.

Concerns were raised regarding lack of access to the data that underpins the decisions that have been made by EWR Co. Cambridgeshire County Council and South Cambridgeshire District Council both requested more information about how EWR Co reached the decision for the preferred route.

Concerns raised that a full safety assessment of the proposals hasn't been made available.

The 2021 consultation covered various sections of the Project from Oxford to Cambridge and included maps and diagrams. The online interactive maps offered additional detail and allowed people to personalise the information presented to them. We do not consider that the ability to overlay the interactive map layers on a satellite image background would have provided any material additional assistance given the high level, indicative stage of design.

More detailed maps will be provided as the design develops. Further supporting materials to help communities understand the proposals will also be provided at statutory consultation which we expect to take place in the first half of 2024.

We are committed to making sure that communities have the right information they need, with a level of detail appropriate to each stage of the Project's development. As a general approach, the proposals provided at the 2021 Non-Statutory Consultation are part of the design process. This means that the proposals are at an early stage and require further input to develop, which includes environmental data, traffic and modelling data and public consultation feedback. This work is ongoing and more information about the proposals, and the information, data and methodologies behind that process, will be provided at statutory consultation.

We recognise that individuals, communities, stakeholders, and those that are interested in the Project sometimes ask similar questions or request more information than the Project is able to provide at any given time. EWR is still at an early stage of the planning process and not all detailed engineering, design work or environmental information is yet complete.

We did, however, aim to publish as much relevant information in the 2021 consultation as possible to enable the public and stakeholders to scrutinise the Project's design at that stage of maturity. Our approach was to share as much in an accessible format as possible, including through technical reports, factsheets, live webinars and interactive mapping on our website.

Safety is at the heart of everything that we do. We will comply with all relevant safety standards and build on industry best practice and designs are continuously assessed to ensure safe construction and operation of our assets, whether infrastructure or systems. Safety was assessed against the Assessment Factors and no major differentiators were identified between the Southern Approach to Cambridge and Northern Approach to Cambridge. Accordingly, this

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matter would not cause us to re-open the decision to prefer the Southern Approach to Cambridge.

3.2.35 Cost

There were suggestions that the Northern Approach to Cambridge would be more cost efficient and cheaper to construct than the Southern Approach to Cambridge. Reasons cited included that the Northern Approach to Cambridge doesn't require four-tracking, is more direct, the land is generally flatter, it would not need embankments, has fewer major crossings, and it would not require the acquisition of buildings.

Whilst there were also concerns about the higher cost and increased risks of the Northern Approach to Cambridge, there were suggestions that it should not be discounted for cost reasons as it would provide more value for money in the long-term by serving planned housing developments. It was also said that the Northern Approach to Cambridge would be cheaper if "properly evaluated".

Concerns raised about the cost of the Southern Approach to Cambridge included the cost of a Cambridge south station; cutting/tunnelling through Chapel Hill; and the cost of additional infrastructure that would be needed to carry freight.

Concerns raised about the cost of the Northern Approach to Cambridge included the cost of the requirement to reverse trains at Cambridge to travel east; and the 'uneconomic route' from Cambourne to Cambridge.

There were suggestions that money would be better invested in improving the bus service and technology, and Cambridge's amenities, such as sports centres and clubs.

Respondents felt that cost should not be a deciding factor in choosing the approach to Cambridge, and that the potential impact on local communities should be given more consideration.

Respondents queried whether the costs for potential legal objections have been taken into consideration and said that EWR does not represent good value for money for the tax payer.

As detailed, both the Northern Approach to Cambridge and Southern Approach to Cambridge would be complex to construct, especially in the built-up area of Cambridge where significant upgrades will be needed to the existing railway infrastructure. This applies even if the potential for reduced four-tracking on the Northern Approach to Cambridge (as described earlier) is taken into account. Whilst the Northern Approach to Cambridge passes through a flatter landscape than the Southern Approach to Cambridge, the Northern Approach to Cambridge still requires significant lengths of track to be located on embankments or viaducts and would require major road crossings (including of the A14 and A10). The Northern Approach to Cambridge would also not enable EWR trains to serve Cambridge South station directly and it would be less flexible should EWR services be extended to destinations north and east of Cambridge.

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As mentioned, work undertaken since the 2021 consultation indicates that the Northern Approach to Cambridge could potentially have a lower construction cost than the Southern Approach to Cambridge. However, the Southern Approach to Cambridge is expected to provide higher potential benefits in terms of unlocking growth, better connectivity and more flexible options to extend EWR services in the future; and remains our preferred approach to Cambridge.

Therefore, we have not altered our decision to prefer the Southern Approach to Cambridge which provides higher potential benefits, and greater flexibility for future connectivity.

We will use industry best practice and learn from other comparable infrastructure projects to inform our approach to delivery of the railway. We will use a range of techniques to estimate costs and monitor and manage risks. Value engineering and innovative approaches to design, construction, and operation of the railway, will help us to monitor and manage costs.

We have included the costs for building the Southern Approach to Cambridge through the Chapel Hill area and for accommodating the expected freight. Whilst the Southern Approach to Cambridge provide direct connectivity to Cambridge South station, the development of the Cambridge South station itself is a Network Rail Project and does not form part of the EWR Project.

We agree that the Northern Approach to Cambridge would make the extension of EWR services further east more challenging due to the turnarounds and reversing moves that would be required at Cambridge station. The Southern Approach to Cambridge would avoid these issues.

We do not agree that the Southern Approach to Cambridge is uneconomic, as it is necessary to consider both the costs and benefits of the Project when assessing its value for money. Whilst the Southern Approach to Cambridge cost more to construct in terms of upfront capital spend than the Northern Approach to Cambridge, it is expected to provide higher potential benefits as have been described.

In terms of investing money in existing services and public transport, we expect EWR to support significant local economic growth that will benefit individuals, communities, educational and research establishments, and businesses. One of our key objectives is to enable housing growth, that will support transformational growth across the region. The new railway is essential in order to unlock these opportunities which improvements to the local bus network alone would not achieve. You can read more about the benefits of EWR in the 'Community benefits' and 'Economic benefits' section in this chapter.

The decision to prefer the southern approach has been informed by assessing options against fifteen assessment factors. These include environment, cost, connectivity and economic growth and they reflect the objectives of the Project. Although the Southern Approach to Cambridge is expected to cost more it is considered that it performs better overall especially

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because of the higher potential benefits in terms of unlocking growth, better connectivity and more flexible options to extend EWR services in the future.

The cost estimates of the Project currently exclude costs associated with the Development Consent Order process. This is the statutory process to assess the environmental impacts of the Project and how these are proposed to be mitigated, and to allow representations from all those with an interest to be considered. Work will continue to assess the costs associated with EWR, including capital cost, whole life cost and the cost of mitigation measures as the design develops. More information on cost estimates will be presented at the statutory consultation.

3.2.36 Decision making and consultation

Concerns were raised that effective lobbying groups such as Cambridge Approaches and Cam Bed Rail Road will encourage EWR to reconsider the Northern Approach to Cambridge.

Respondents were concerned that errors and assumptions have been made about the Southern Approach to Cambridge. Concerns were raised regarding the viability of the Southern Approach to Cambridge and that not enough evidence has been provided to support this option. Respondents said that the Southern Approach to Cambridge has not been independently assessed.

Concerns were raised that the high number of complaints and feedback received from south Cambridge communities, compared with north Cambridge communities, will increase the validity of their argument and the likelihood of the northern route being given preference.

Respondents raised concern that RA1 and RA9 have become 'emerging preferences' due to influence of pressure groups, especially with the emerging preference of a Cambourne North station.

Concerns were raised that the assessment of alignment options has been primarily based on economic considerations rather than environmental and local considerations. Natural England added that there was limited environmental information within the documents, particularly relating to any alternative route, and they were therefore unable to draw definitive conclusions on which approach is most likely to be least impactful from an ecological perspective.

Respondents suggested that residents who live north of Cambridge have expressed interest in EWR taking a northern route into Cambridge and the associated potential benefits with the development of new stations in their area (e.g. Dry Drayton, Northstowe).

There were concerns that there has not been a fair consultation on a northern approach, and needs to be considered again.

There has been suggestion that a judicial review of EWR should be undertaken. Concerns were raised that the northern route would be challenged by judicial review.

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Concerns were raised that the communities who are impacted by the northern alignment have not been properly consulted and also that planning for the northern approach is behind the southern approach.

Respondents have raised concern that the southern route is preferred by large businesses (e.g. Astra Zeneca) that have influenced the decision, despite it being the most expensive route.

Respondents raised concerns that the consultation process has not been fair.

Concerns were raised that the information provided in Appendix F of the Consultation Technical Report is incomplete and inaccurate.

Concerns were raised that the reasons EWR Co has given for not preferring the Northern Approach to Cambridge also apply to the Southern Approach to Cambridge (demolition of homes, negative impacts on wildlife, habitats and community connectivity, and increased journey times). Respondents said that the Northern Approach to Cambridge should be rejected due to a requirement for four tracks, but that this would still be required for the Southern Approach to Cambridge.

All feedback received in response to our public consultations, whether from organised lobbying/pressure groups or anyone else, is processed and considered in the same way. We do not give preferential treatment to feedback from lobbying groups.

We are satisfied that the Southern Approach to Cambridge design is not materially affected by any errors and that the assumptions which underpin the design are appropriate to the Project and the early stage of the optioneering process. None of the consultation responses have provided any specific information to the contrary which would cause us to re-open the decision to prefer the Southern Approach to Cambridge.

Approaching Cambridge from the north was considered as part of the initial work led by Network Rail in 2018 - 2019 to identify a broad route corridor, and then again in further detail in 2019, both before and after the analysis of feedback from our first non-statutory consultation. During the 2019 consultation we received a range of comments on the prioritisation of these southern approach route options, including a response from Cam Bed Rail Road (CBRR). Acknowledging this and using further technical information we then carried out additional work to assess the case for a northern approach prior to the 2021 consultation. We considered all feedback received from the 2019 and 2021 non-statutory consultations on its own substantive merits. The decision to continue to prefer the Southern Approach to Cambridge has been made having regard to all the comments we received as well as our assessment of all other relevant information. As part of the 2021 consultation, we back-checked our decision and concluded there was no sufficient reason to re-open the previous conclusion that approaching Cambridge from the South is the right option for EWR. We published extensive information on this in our consultation Technical Report. All of the feedback we received has been considered and taken into account, including respondents' comments as to why they thought the Northern Approach to Cambridge might be preferable

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to the Southern Approach to Cambridge. We also considered a potential Northern Approach to Cambridge again in detail following the closure of the consultation, including through the extensive work undertaken as part of the ACP. The Southern Approach to Cambridge remains our preferred option because it provides better overall connectivity, greater scope to unlock economic growth across the region and provides more flexibility to extend EWR services in the future. This decision was not a 'vote' and the number of responses received in favour of or in opposition to a given option was not determinative because the decision has been made following a thorough assessment of each option's respective merits.

We identified a station location north of Cambourne as our emerging preference in the 2021 consultation following a review of how this compared to a station located south of Cambourne. Following consideration of the consultation feedback and the further work undertaken as part of ACP, we continue to consider that a Cambourne North station would be preferable.

The preferred option has been selected following a rigorous process which included review of factors including costs, consideration of community impacts, environmental impacts, contribution to enabling housing and economic growth and alignment with wider railway strategy / infrastructure. Although Southern Approach to Cambridge is expected to cost more it is considered that it performs better overall especially because of the higher potential benefits in terms of unlocking growth, better connectivity and more flexible options to extend EWR services in the future.

We have received feedback from local residents across Cambridgeshire. Generally, residents of areas south and southwest of Cambridge favour the Northern Approach to Cambridge and residents of areas north and northwest of the city prefer the Southern Approach to Cambridge, although this pattern is not absolute.

We note that Northstowe Town Council has objected to a proposed new EWR station in the area northwest of Cambridge. Accordingly, this matter would not alter our decision to prefer the Southern Approach to Cambridge which provides higher potential benefits in terms of unlocking growth, better connectivity and more flexible options to extend EWR services in the future. There is no clear support from residents in the area north and northwest of Cambridge for a new station in this location.

We take the views of local people, communities and their representatives seriously and we are required to demonstrate how we have consulted and engaged the public and where feedback has been used – or not used – to inform the design.

As detailed, we asked for views and feedback on the proposals presented at both stages of non-statutory public consultation in 2019 and 2021. Feedback was specifically invited in response to our decision to prefer the Southern Approach to Cambridge at both consultations. A Public Feedback Report was published in March 2020 that provided a summary of the 2019 consultation feedback and how that feedback had been considered. A similar approach has been taken with this document for the 2021 consultation (and post-consultation engagement where relevant).

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The Northern Approach to Cambridge has previously been discounted and the Southern Approach to Cambridge remains our preferred option. This means that undertaking additional design work on the Northern Approach to Cambridge would not be a proportionate or efficient use of the public funds entrusted to us.

To raise awareness of the 2021 consultation, we posted consultation information directly to 270,000 households, placed adverts in locations along the route, on local radio, on social media and in local print media. We also sent press releases to local media – including newspapers and radio stations – and our senior team conducted interviews with a range of outlets. At every step we were actively engaging with local residents and elected representatives to ensure they had all the information they needed.

The consultation was open to anyone and we have and we will continue to, take into account all relevant matters, including consultation feedback, when taking decisions about the Project. All feedback we received following the 2021 consultation was analysed by an independent company before being carefully considered alongside our own technical research, development and design work to progress design work and inform the proposals. All feedback is considered fairly as part of our review process.

We endeavoured to provide as much information as possible, while being open about our decision making and justification. We are satisfied that the content of the Consultation Technical Report was both appropriate and accurate and this matter would not cause us to re-open the decision to prefer the Southern Approach to Cambridge. This decision is based on a holistic assessment of how the Southern Approach to Cambridge performs and all of the feedback received. The threat of a judicial review is not relevant to the substantive merits of the Northern Approach to Cambridge or Southern Approach to Cambridge.

It is currently assumed that the additional tracks for both the southern and northern approaches could be constructed within the railway corridor on the sections north of Shepreth Junction into Cambridge for a southern approach, and on the section between a new Milton Junction and Cambridge station for a northern approach. However, if additional tracks were to be needed between Milton Junction and Coldham's Lane to increase capacity of a northern approach in the future, greater property acquisition and demolition would be needed than for a southern approach as the surrounding areas are more built up. This matter would not in itself cause us to re-open the decision to prefer the Southern Approach to Cambridge.

We remain of the view that the Southern Approach to Cambridge out-performs the Northern Approach to Cambridge by providing better overall connectivity, greater scope to unlock economic growth across the region and provides more flexibility to extend EWR services in the future.

3.2.37 Freight

Respondents were concerned that freight trains will travel in close proximity to rural villages.

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Concerns were also raised about the possibility of freight trains running for 18 hours a day, with up to 50 diesel freight trains measuring up to half a mile in length, running each night from 11pm to 5am. It was suggested that if diesel freight trains were to run on EWR at night, the railway should follow an existing travel corridor (such as the A14/M11) in the north of Cambridge, which is active 24 hours a day.

Respondents said that freight traffic to and from Felixstowe was not mentioned in the 2021 consultation.

Regarding the Southern Approach to Cambridge, respondents were concerned that it would force freight into Cambridge and questions were raised as to whether Cambridge residents were aware of this. It was suggested that a new chord line could be provided from the WAML south of the A1303 to join the Newmarket Line at Coldham's Common.

There were concerns about how many freight trains would use the Southern Approach to Cambridge.

Regarding the Northern Approach to Cambridge, concerns were raised that it may preclude freight traffic from travelling east to west.

Others felt the Northern Approach to Cambridge would be more suitable for freight trains than the Southern Approach to Cambridge because:

- It would remove the need for freight trains to travel through Cambridge city and could facilitate freight trains linking directly with other national routes and eastern ports (e.g. Felixstowe).
- It is less densely populated and therefore fewer residents would be impacted by potential noise, vibration, pollution and disruption from a freight line.
- It would have reduced freight journey time, and therefore would have less environmental impact.
- It is on the 'commercial side' of the region and therefore aligns better with roads such as the A14.
- Freight entering Cambridge via a northern route would reduce lorry traffic and emissions on roads.

There was a suggestion that if diesel freight trains will be running on the new railway at night, it should follow a northern route, as it would avoid the densely populated residential areas in the south of Cambridge.

EWR is principally intended to be a passenger route. However, it is being designed to maintain the current city for freight trains on the existing railway and we're considering the potential for future growth in demand for rail freight. Both the Northern Approach to Cambridge and the Southern Approach to Cambridge would be able to accommodate freight traffic. EWR aims to achieve modal shift (both passengers and freight) and to reduce crowding on the wider rail network, most notably on services into and out of London. It is therefore expected that freight trains using EWR would help to reduce lorry traffic within the region, but this would also be facilitated by our preferred Southern Approach to Cambridge.

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EWR proposed operational hours for passenger services in Appendices A and B of EWR Co 2021 Consultation Technical report, with less intensive train movements as required outside these hours for infrastructure maintenance, inspection, freight, and other activities as part of the national rail network.

How much freight would use the railway is not yet known as this is subject to Government policy and market demand and is likely to be affected by interventions on other parts of the rail network.

We're currently developing a freight strategy. Further detail on the strategy and the approach to avoiding or reducing impacts from freight trains which may run on EWR will be available at the statutory consultation.

EWR is being designed to maintain current capacity for freight trains on the existing railway and we are considering the potential for future growth in demand for rail freight. A Northern Approach to Cambridge would not allow all existing freight services in the Cambridge area to continue to operate as they currently do, whereas the Southern Approach to Cambridge would provide sufficient capacity for this.

Significant upgrades to the rail network outside of the geography and scope of EWR would be required to afford higher levels of freight, regardless of whether the Northern Approach to Cambridge or the Southern Approach to Cambridge is selected. The actual journey times and any associated infrastructure upgrades between Felixstowe and the EWR new Milton Junction are outside of EWR's scope and remit.

As part of the updated Northern Approach to Cambridge design, we considered a freight chord heading north to Ely at Milton Junction, which would allow east/west freight traffic to bypass Cambridge. However, this would increase the cost of the Northern Approach to Cambridge and it would not be possible for freight trains to access this chord without significant upgrades to other parts of the existing rail network. Accordingly, this matter would not cause us to re-open the decision to prefer the Southern Approach to Cambridge.

For the Southern Approach to Cambridge, it is expected that freight trains would run through Cambridge station in the same way as existing freight services.

Residents and businesses in Cambridge were included in the 2021 consultation, with a direct mailing to those potentially most affected by the proposals and a chapter on freight was included within the Non-Statutory Consultation Technical Report. We'll continue to consult communities as the Project develops, including about freight and its potential impacts. We have consulted at a formative stage and will continue to provide the public and stakeholders with more detail as the proposals for the route are refined.

Both the Southern Approach to Cambridge and Northern Approach to Cambridge routes run past rural villages in Cambridgeshire and we considered that the impacts on the Community would be broadly neutral.

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The land on Coldham's Common is subject to a number of protective designations, including as public open space and common land. It also forms part of an important green space within the heart of the city. In these circumstances, we don't consider that construction of a chord to allow freight services from the north to connect directly to the Newmarket Line, would be appropriate and it is not required in order for services to access EWR if the Southern Approach to Cambridge is selected.

The A14/M11 route does not follow the proposed route for EWR and would therefore require a significant diversion for the Project in order for the route to follow these existing transport corridors. This is because the M11 motorway runs north-south on the west side of Cambridge and would have to be crossed in order to serve the city itself. Locating the railway in close proximity to the A14/M11 is likely to have significant impacts on the existing settlements and environmental features located along these routes. In addition, the number of complex junctions on these roads would necessitate the construction of large bridge and viaduct structures, which are likely to have significant visual impacts. Therefore, the Southern Approach to Cambridge remains our preferred option.

As detailed, we are considering potential impacts on the community and how to reduce or mitigate disruption to local people, communities and the environment and how to avoid significant adverse impacts on health and quality of life. We will continue to work to mitigate any impacts we cannot avoid and work closely with people who could be affected.

3.2.38 Impact on the Mullard Radio Astronomy Observatory (MRAO)

Concerns were raised regarding potential impacts of development on the MRAO with suggestion that further work is required to ensure there is no impact.

Respondents also raised concern about the MRAO and the problems of electromagnetic interference.

Concerns were raised about interference of EWR and vibrations to the highly sensitive radio telescopes.
We took into account the potential for the new railway to affect the MRAO in the development of potential alignments. We're in ongoing discussions with MRAO to understand how impact to the observatory can be avoided for the Southern Approach to Cambridge and, if unavoidable, mitigated. More information on how we plan to mitigate potential impacts on the observatory will be provided at statutory consultation.

This matter would not cause us to re-open the decision to prefer the Southern Approach to Cambridge.

3.2.39 Operational issues

The suggestion was made that any issues with conflicting timetables with the Northern Approach to Cambridge could be overcome once services become operational.

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There was another suggestion that the Northern Approach to Cambridge could be implemented without the need for any reversing manoeuvres.

Regarding the suggestion that any issues with conflicting timetables with a northern approach could be overcome once services become operational, we note that this would not be appropriate as the necessary solution might require the provision of additional infrastructure. Any such requirement needs to be understood now so that it can be provided as part of the consented design, hence the timetable modelling that has been completed as part of the optioneering process for both northern and southern options.

We have been reviewing potential timetable conflicts with Network Rail and other operators as part of our work to look at removing the requirement for EWR services to operate at an even interval. We have concluded that it would be feasible to run four trains an hour on the northern approach, however the Southern Approach to Cambridge could provide the new EWR services on an even interval pattern, with a train every 15 minutes. This would be more attractive to passengers. This even interval service pattern cannot be provided on the revised northern approach without either significant additional four-tracking in Cambridge (leading to significantly higher requirements for property acquisition and demolition) or detrimental impacts on current and planned rail services provided by existing operators. These services would also not serve Cambridge South and the Biomedical Campus directly. Therefore, this would not change our decision to prefer the Southern Approach to Cambridge which provides higher potential benefits in terms of unlocking growth, better connectivity and more flexible options to extend services in the future.

If the Northern Approach to Cambridge is selected, it would only be possible for the new EWR services to travel to destinations further east without reversing, if calls at Cambridge station are omitted. Additional infrastructure would also need to be constructed where EWR joins the WAML near Milton and, potentially, at Coldham's Common and Ely. This would add extra cost and complexity and reduce the overall ability of EWR to deliver benefits for transport users and unlock growth in Cambridge because fewer trains would serve the city, including the Biomedical Campus and Cambridge South.

3.2.40 General/Other

Respondents suggested that a rail link to the medical campus would help to remove more traffic from the road network.

Respondents expressed the opinion that there should be a focus on stimulating economic growth and housing.

Respondents suggested that routes to London and major cities are more important and should be prioritised over a route that offers little benefit to those living and working in Cambridge. Respondents expressed an opinion that the southern route is already very well served and extremely busy, with the London lines. Respondents raised concern that entering Cambridge from the south prevents direct access to Stansted or to London without changing trains.

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Respondents suggested that EWR funding should instead be invested in modernising and improving existing railway services.

Concerns were raised about the health impact on residents such as asthma, young children/people's lungs, well-being and reduced quality of life.

Respondents suggested that the proposal will ruin EWR Co's reputation.

Respondents suggested that proposals will result in less pollution as the roads will be less grid locked.

Respondents raised concerns that a southern alignment presents more challenges that a northern alignment.

Respondents suggested using trenching technology, which would have less impact on the environment and the landscape and reduce noise and visual impact and also overcome many of the problems associated with the northern route. This technology is commonly used in the Netherlands, a country prone to flooding and experienced in building railways on floodplains. Suggestions were made that EWR should approach Cambridge from the west. Concerns were raised regarding the continuation of the railway west of Cambridge and through to Fulbourn, Dullingham and beyond.

EWR aims to deliver modal shift (both passengers and freight) from the existing road network to rail in addition to providing convenient connections to other transport modes and projects. By providing direct connectivity to Cambridge South station, the proposed Southern Approach to Cambridge could assist in reducing the number of car journeys to the Biomedical Campus, a key centre of employment, which is located adjacent to the station.

As mentioned, we will prepare a Transport Assessment to consider the impact on the strategic and local highway networks, road safety, and local sustainable modes of transport, including public transport. It will also set out the impact of construction on the road network, including changes to existing traffic patterns because of predicted construction traffic. The PEIR will include information regarding the baseline for transport, access and non-motorised users, together with a preliminary assessment of impacts and potential ways to mitigate these. This will be developed and refined for the ES that is submitted as part of the DCO application.
One of the strategic objectives underpinning the development of the Project is to stimulate economic growth, housing and employment through the provision of new, reliable and attractive inter-urban passenger train services between Oxford, Milton Keynes, Bedford and Cambridge. We recognise the role EWR will play in supporting this, and have analysed the Northern Approach to Cambridge and Southern Approach to Cambridge's ability to contribute. We've concluded that the greater ability of the Southern Approach to Cambridge to unlock constraints on economic growth at the Cambridge Biomedical Campus is a key part of the reason why the Southern Approach to Cambridge remains the preferred option for the new railway.

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EWR will provide shorter journey times to Cambridge from points further west, bringing more of the Bedford and Marston Vale areas within a reasonable commuting catchment of Cambridge. This will also facilitate the overlap of the economic hinterlands of Cambridge, Milton Keynes and Oxford and drive forward greater economic agglomeration benefits. Regarding connections to London, EWR is addressing a fundamental lack of connectivity in the region and will deliver a range of benefits to the local, regional and national economy. It will support economic growth of one of the most successful regions in the economy, through the provision of cheaper, greener and faster transport in an area constrained by poor east-west connectivity. Improved connectivity will join up key business clusters, broaden the labour pool for businesses, provide access to markets, enable greater collaboration and innovation for businesses and universities, and attract both investment and top talent to the UK.

EWR can support the national levelling up agenda by providing the right environment for business growth across an area where new business formation, innovation and entrepreneurship is strong. This will aid not only new business growth and survival, but also assist in retaining businesses and investment in the UK, and in encouraging further investment and scaling up across other parts of the country. Many of the businesses and industry sectors EWR will support already have strong links to other parts of the country considered priority areas for levelling up.

This complements existing and upgraded routes to London and other major cities; it is not an either-or decision. Accordingly, this matter would not cause us to re-open the decision to prefer the Southern Approach to Cambridge which provides better overall connectivity, greater scope to unlock economic growth across the region and provides more flexibility to extend EWR services in the future.

EWR's purpose is to improve and create direct connectivity by rail across the Oxford to Cambridge area, through the introduction of passenger services between Oxford and Milton Keynes, Oxford and Bedford, and Oxford and Cambridge. Whilst a northern approach does facilitate the provision of connections south to Stansted and London in principle, the Project is not required to provide a direct connection to Stansted or London, and neither the Northern Approach to Cambridge nor Southern Approach to Cambridge would provide direct connectivity to these locations.

It would, in principle be possible, under a northern approach to extend services to Stansted or London. However, this would require one or more of the four EWR trains per hour to be substituted by existing operator services, which would mean a risk of importing delays from other parts of the network, could constrain timetabling, and would require additional infrastructure and therefore cost.

Inter-working EWR and non-EWR services would also negatively affect the operational resilience of the whole EWR line.

However, both proposed routes would serve Cambridge station, where passengers could interchange to use services run by other operators to continue their journey to Stansted airport or London.

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Importantly, it would not be possible for EWR trains on a northern approach to serve the new Cambridge South station directly unless significant additional upgrades to the WAML are undertaken. By comparison, EWR trains using a southern approach can be extended to serve Cambridge North directly subject to relatively minor upgrades to the track and platforms at and near the current station.

Accordingly, this matter would not cause us to re-open the decision to prefer the Southern Approach to Cambridge which still provides better overall connectivity, greater scope to unlock economic growth across the region and provides more flexibility to extend EWR services in the future.

Concerning investment in existing services, the National Infrastructure Commission (NIC), which provides impartial, expert advice on major long-term infrastructure challenges, identified that the economic potential of the Oxford to Cambridge area is constrained by a lack of suitable housing and poor east-west connectivity. As explained in section 2.2.3 of the Non-Statutory Consultation Technical Report, the NIC concluded that EWR could play a key role in addressing these issues. The Government has confirmed its support for the NIC's vision for additional infrastructure (including EWR) required to ensure communities and businesses are better served and better connected.

One of EWR's core priorities is to increase connectivity across the whole region between Oxford, Milton Keynes, Bedford and Cambridge, which current rail transport from Cambridge does not do.

We'll achieve this through the introduction of passenger services between Oxford and Milton Keynes, Oxford and Bedford, Oxford and Cambridge, and consideration of services from Aylesbury to Milton Keynes. Modernising and improving existing railway services alone would not meet this requirement.

In addition, we are proposing to upgrade the existing WAML with two additional tracks south of Cambridge station as well as expanding Cambridge station with additional platforms. This will enable EWR services to operate. The Southern Approach to Cambridge will also enable all EWR services to call directly at the new Cambridge South station, helping to provide vital additional capacity and connectivity to the Cambridge Biomedical Campus and south side of the city. By comparison, it would not be possible for EWR trains using a northern approach to serve this new station directly without significant additional works to upgrade the West Anglia Main Line south of Cambridge station, adding cost and disruption. This means that the Southern Approach to Cambridge offers greater opportunity to remove traffic from the road network in the south Cambridge area than the northern approach.

EWR is supported by local authorities in the Oxford to Cambridge area as a vital enabler of transformation in the area, and it sits at the centre of England's Economic Heartlands' Transport Strategy.

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Regarding impacts on quality of life, we are considering potential impacts on the community and how to reduce or mitigate disruption to local people, communities and the environment, and how to avoid significant adverse impacts on health and quality of life. We are considering a range of matters including sound, noise and vibration, air quality, as well as potential impacts on public rights of way (PRoWs) and land and property requirements.

The PEIR will assess potential health impacts on local residents, including people who are likely to be more adversely impacted by air quality, including asthma sufferers or young children. At present, we don't consider that the Southern Approach to Cambridge will have any material adverse effects on residents' health.

In relation to air quality specifically, the Northern Approach to Cambridge would perform worse than the Southern Approach to Cambridge due to additional works within the AQMA areas north of Cambridge station which are not required for the Southern Approach to Cambridge. Accordingly, this matter would not cause us to re-open the decision to prefer the Southern Approach to Cambridge.

Both the Northern Approach to Cambridge and the Southern Approach to Cambridge would entail construction challenges as described earlier in this chapter. However, this would not cause us to re-open the decision to prefer the Southern Approach to Cambridge.

We don't agree that using trenching methodology would have less of an impact on the environment. It would create a large amount of excavated material, require significant construction and HGV movements, have much higher levels of embedded carbon, and have a greater impact on hydrology. Use of trenching would also provide a worse customer experience as trains would predominately be within a concrete-lined retained cutting.
A western approach to Cambridge was considered during Network Rail's 2019 consultation and not carried forward. It would have a significant impact on communities within west Cambridge and require extensive tunnelling beneath the historic core of the city.
These matters would not cause us to re-open the decision to prefer the Southern Approach to Cambridge.

Regarding responses suggesting that the proposal will ruin EWR Co's reputation, EWR is developing proposals that best meet the Project objectives and it is the extent to which the objectives are achieved on which EWR should be judged.

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