

Cambridge Approaches response to EWR 2026 consultation 14th April – 9th June: Bourn Airfield to Harston, with focus on environmental issues

Contents

Cambridge Approaches demands.....	1
Overview.....	4
In-combination and cumulative effects	5
Detailed Comments on the Consultation Brochure	9
Timeline: CS3 Bedford to Cambridge Route Corridor Selection	33
Appendix 1: Abbreviations.....	43
Appendix 2: In-combination Effects	44
References.....	49

Cambridge Approaches demands

1. Adopt the Northern Approach to Cambridge or extend the bored or mined tunnel at Bourn Airfield tunnel to pass beneath the affected area. EWR Co must demonstrate, before DCO submission, why the NATC has been discounted on environmental grounds when it avoids the Core Sustenance Zone of the SAC’s maternity roost of barbastelle bats and has much less impact on its functionally linked barbastelle colonies. EWR Co must also demonstrate why this long tunnel beneath the Core Sustenance Zone (Figure 1) and avoiding the Hardwick Wood SSSI - which would eliminate the open cuttings and their barrier and collision effects - has not been evaluated as a serious alternative. EWR Co’s Environmental Statement commits to applying the mitigation hierarchy - avoid, mitigate, compensate - in that order of preference. Where a less damaging alternative route exists that avoids the impact entirely, EWR Co’s stated approach requires it to demonstrate why avoidance is not reasonably practicable before proceeding to mitigation. A bare assertion that the SATC is preferred on economic grounds does not discharge that commitment.

2. Provide an evidenced, site-specific mitigation design. EWR Co must publish a mitigation design that specifies, for each proposed crossing structure, the target barbastelle flight paths it is intended to serve, the dimensions and planting specification required to achieve connectivity, and peer-reviewed evidence that structures of that design are effective for use by barbastelle bat specifically.

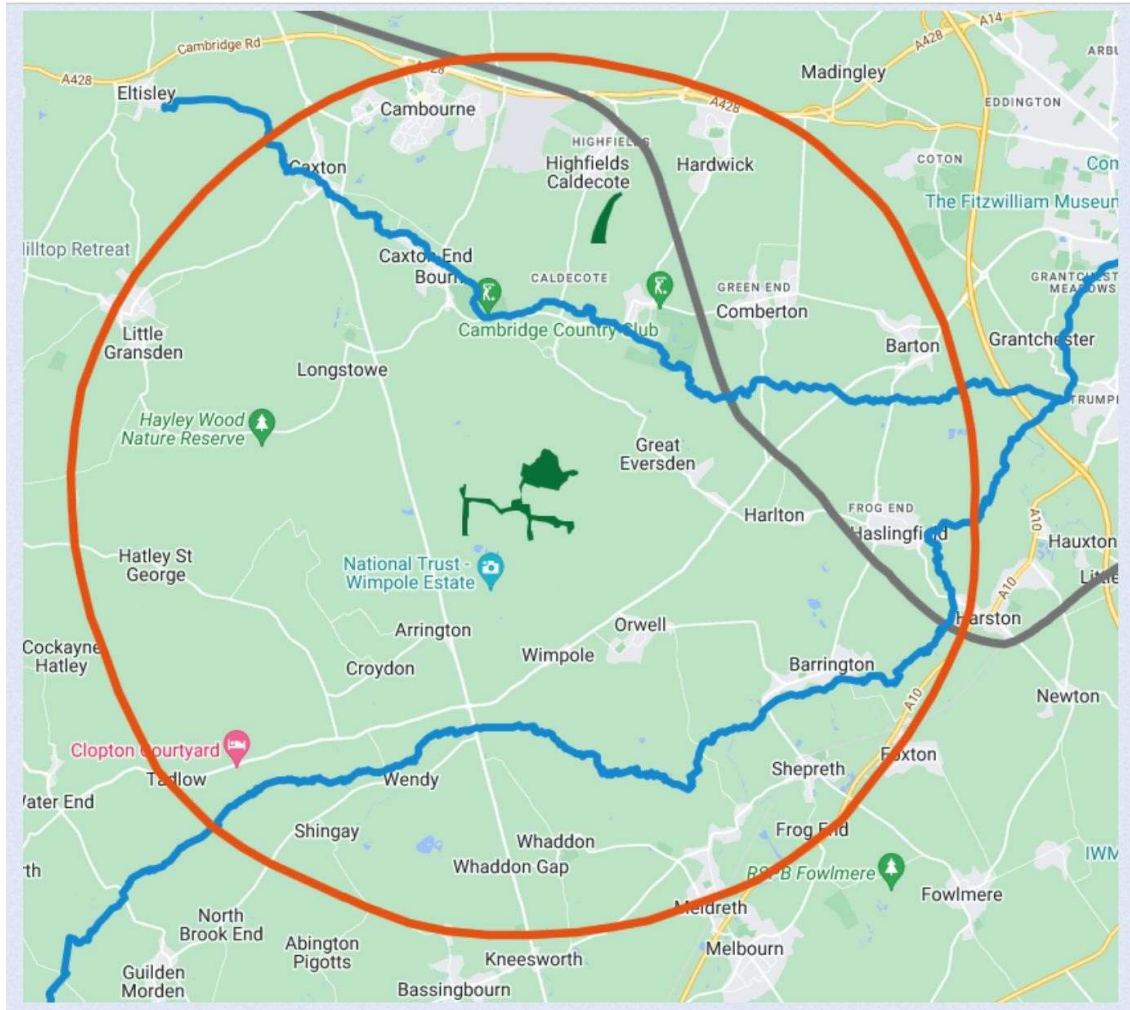


Figure 1 Eversden and Wimpole Woods SAC (centre) and its Core Sustenance Zone (orange circle of 7km Radius); note Hardwick Wood SSSI just south of the 'Highfields Caldecote' caption. The EWR route alignment (grey line intersecting the CSZ) is broadly based on the 2024 Non-Statutory Consultation but despite later adjustments remains broadly relevant to the points being made in this response. The route south first crosses Bourn Brook (blue), then the River Rhee before turning north towards Cambridge. Map prepared by Cambridge Approaches.

3. Commission and publish more rigorous and more comprehensive species-specific bat surveys. EWR Co must publish the composite map of radio-tracked barbastelle flight paths compiled from its 2020 and 2022 surveys, including the 68% of crossing points it had identified as of Nov 2025. This composite map was requested via Freedom of Information in December 2024 and has still not been released. Since Hardwick Wood SSSI is part of the HRA, EWR Co must carry out radio-tracking of barbastelles from its maternity roost(s) during the full extent of the maternity season, with a sample size sufficient to demonstrate key flight paths which characterise all key crossing points across the proposed route. To date, only 6 barbastelles (of which only 4 were breeding females) have been tagged and trapped in Hardwick Wood (2022 survey over 2 nights in Aug-Sep). This work must be completed and independently reviewed

before the DCO application is submitted. Given the serious threat to the SAC, the balance should be in favour of transparency on flight paths to make sure that the data can be reviewed and is robust.

4. Demonstrate the statistical robustness of survey results relative to total population size. EWR Co's two radio-tracking-surveys (2020 & 2022) produced a combined total of only 5 tagged adult female barbastelles from the SAC of which 4 were post-lactating. Before any conclusions about crossing points, flight paths, or mitigation effectiveness can be relied upon in an Appropriate Assessment, EWR Co must: (a) estimate the total size of the Hardwick Wood maternity colony and the wider SAC population; (b) demonstrate what proportion of that population the tracked individuals represent; and (c) provide a statistical analysis showing that the observed flight paths are representative of those colonies full range of commuting behaviour rather than a subset of individuals whose routes may not reflect the colonies' complete use of the landscape. Without this, the crossing points EWRCo proposes to protect with green bridges, underpasses and planted corridors may be based on an unrepresentative sample, leaving the majority of the colonies' actual flight paths unidentified and unprotected. The Wensum Valley Barbastelle Project - the most rigorous study of its kind in the UK - tracked far larger numbers of adult females over multiple seasons precisely because population-level conclusions require population-scale data.

5. Assess cumulative and in-combination effects. EWR Co must carry out a full in-combination assessment under Regulation 63 of the Habitats and Species Act, covering all plans and projects listed in the Appendix to this response that could affect the SAC individually or collectively. Natural England has required this since 2021.

6. EWR Co must demonstrate the effectiveness of its mitigation design in the light of the weight of expert evidence to the contrary. We believe this will be very hard. EWR Co's mitigation strategy rests on the assumption that barbastelles will use designed crossing structures - green bridges, underpasses and planted corridors - to maintain connectivity across the railway. The weight of published evidence runs directly against that assumption. The Wensum Valley Barbastelle Project found no compelling evidence that barbastelles use green bridges and concluded that the bats are unlikely to change traditional commuting routes to use them. Dr Hassall's independent expert evidence, accepted in the Norwich Western Link Road inquiry, stated that barbastelles have such precise and specialised habitat requirements that proposed green bridge mitigation was incapable of working. Other studies have found that after foraging the bats return to the roost directly on a broad front, casting doubt on the rationale of fixed crossing points and co-located mitigation structures. Reference ([10]) confirms that barbastelles may be reluctant to cross gaps even where habitat quality is maintained. A cutting of 150 metres - the proposed width at the southern end of the Bourn Airfield tunnel - is 7.5 times the 20-metre gap that the expert literature identifies as the maximum barbastelles will reliably traverse. EWR Co must therefore demonstrate, with species-specific empirical evidence from analogous schemes, that crossing structures of the

dimensions and specifications it proposes have actually been shown to maintain barbastelle connectivity in practice. The legal standard under Regulation 63 requires that adverse effect on integrity be excluded beyond reasonable scientific doubt — a standard that, in the face of the contrary evidence already on the record, EWRCo cannot meet by reference to design intent alone.

7. Acknowledge and address the monitoring and mitigation necessitated by the prolonged construction phase posing a significant risk of an adverse effect on the integrity of the SAC well before EWR is operational.

8. Commit to a legally binding post-construction monitoring programme. Given the documented time lag between construction impacts and detectability of effects on bat populations, EWR Co should commit to a minimum 10-year post-construction monitoring programme (Berthinussen and Altringham 2012: The effect of a major road on bat activity and diversity [14b]), with automatic remediation triggers if population indicators fall below agreed thresholds. Post-construction monitoring needs to include assessment of the long-term sustainability of BNG habitat compensation, and also any potential adverse hydrological effects, especially pollution of chalk streams and associated riverine habitat which serve as key commuting and foraging corridors for barbastelle bats, while also supporting other red-listed species such as otters and water voles.

8a. Given the level of concern expressed by many parties on this issue, EWR Co must consult with the public on its draft HRA as soon as possible and well before the DCO process starts, as specified in The Conservation of Habitats and Species Regulations 2017 as amended ([18c]) Reg. 63(4).

Overview

9. On the best available evidence, we consider that the CS3 route alignment (*aka* the SATC) will have, beyond reasonable scientific doubt, an adverse effect on the integrity of the Eversden and Wimpole Woods SAC and its Core Sustainment Zone (CSZ) by rendering its maternity roost of barbastelle bats unsustainable.

10. This would result in the extinction or abandonment of the colony. In response to EWR's 2024 Non-Statutory Consultation, Cambridgeshire County Council assessed the SATC as '*unacceptable*' and '*catastrophic*', '*including in the worst-case scenario, loss of the maternity roost*'. Other functionally-linked neighbouring colonies are at similar risk.

11. The southern route alignment directly intersects the SAC's CSZ, defined by the Bat Conservation Trust (BCT) as '*the area [up to 7km radius] surrounding a communal bat roost within which habitat availability and quality will have a significant influence on the resilience and conservation status of the colony*'; and could therefore be used to indicate the area (a) '*within which development work may impact flight paths and foraging habitat of bats using that roost, in the absence of information on local foraging behaviour. This will highlight the need for species-specific survey techniques where*

necessary’; and (b) *‘within which it may be necessary to ensure no net reduction in the quality and availability of foraging habitat for the colony...’* ([33]).

12. EWR Co needs to present the evidence to prove that it has applied robust ‘species-specific survey techniques’ at the appropriate spatial scale. According to Collins (2016), background data searches should be carried out up to a minimum of 2km from the proposed development boundary (including temporary works such as construction compounds and haul routes) or extend up to 10km for larger projects ([25]). EWR Co needs to be explicit about the compliance of its own data searches with this best practice recommendation.

13. In this regard, the well documented tendency of barbastelles to forage over a wide area is relevant. Vine (2002: *A study of Barbastelle bats at Wimpole Cambridgeshire, July 2000- August 2002*) tracked a radio-tagged juvenile female from Eversden and Wimpole Woods SAC to High Cross, Cambridge, over 11km from the individual’s roost in the SAC. Zeale et al. (2012) showed that post-lactating and nonbreeding bats travelled considerably greater distances to foraging sites than pregnant and lactating bats ([16]).

14. The fact that *‘Barbastelle bat is one of the UK’s rarest bat species and most difficult to study.’* ([33]) demands a specialist knowledge of the unique characteristics of the species and its likely responses to the scale of EWR development. As described below, EWR’s surveys (notably radio-tracking, transect and static detector) have not in our view been robust enough for developing adequate and effective mitigation measures.

15. Given that the SAC’s barbastelles are reliant on large areas of habitat containing a range of sites needed for supporting the bats’ life support functions at different seasons, one notable deficiency is the lack of identification of hibernation and potential swarming sites, a concern raised by Natural England in the Evidence Plan meeting 1 with EWR Co (18 Sept 2024), 5.6: *‘NE queried if there is data regarding barbastelle swarming / hibernation locations.’*

In-combination and cumulative effects

16. The Consultation is incomplete and deficient in failing to address and assess in-combination and cumulative effects in the HRA process. The impact of EWR on the SAC and other protected sites in scope (notably SSSIs with which barbastelles from the SAC interact) must be considered alongside other existing, approved, or proposed plans/projects or schemes in the area. This assessment must determine, during both the construction and operational phases, whether the EWR scheme - when combined with other developments - triggers a significant adverse effect on the integrity of the SAC.

17. In its response to EWR Co’s Non-statutory consultation 2021 ([4]), Natural England raised this issue:

‘NE has previously advised of the need to consider cumulative impacts between the EWR development and that being brought forward within the Oxford-Cambridge Growth Arc. This is particularly relevant where this scheme will itself influence and enable the spatial distribution of development.’

18. Here, the widely mooted issue of EWR as a catalyst for the secondary development of housing (and associated infrastructure) in the hinterland of the route alignment requires particularly close consideration (IENE 2022: [24]).

19. In summary, failure to comprehensively assess potential cumulative effects risks undermining proposed mitigation and compensation measures and, in turn, the HRA outcome desired by EWR. See **Appendix 2** to this NSC response for a list of in-combination plans and projects which we consider relevant to the EWR scheme.

20. As the SAC’s functionally linked land (FLL), the CSZ is afforded the same level of legal protection as the SAC itself. For any barbastelle colony, the CSZ has a radius of up to 7km (Bat Conservation Trust 2016, ([18b]). It is considered, however, that within this *‘the primary foraging area used by females when lactating and feeding their young will be within 3-4km of the roost as they require high quality foraging grounds nearby at this time’* ([33]).

21. At its closest point, the EWR route alignment is just under 3km from the SAC. According to the Consultation documentation, Hardwick Wood SSSI is only 600m from the centre line of the route alignment. Just east of Hardwick Wood SSSI, even closer (approx. 525m) to the route alignment lies Toft Plantation, for which there is evidence of use as a roost by (one or possibly more) barbastelles from colonies functionally linked to the SAC.

22. We consider that the adverse effect of EWR on the integrity of the SAC is likely to occur during the prolonged construction phase of the southern approach to Cambridge, long before the railway is operational, a window of risk which EWR Co has barely reflected on.

23. In summary, we conclude that EWR is likely to have an adverse effect on the integrity of the SAC on the basis of:

- loss of and damage to foraging habitat (including water courses), leading to fragmentation and loss of connectivity for which BNG cannot compensate, at least not in a sufficiently timely way
- loss of roost sites, a particular concern in South Cambs. where ancient woodland is rare and already highly fragmented
- severance of flight paths (barrier effects)
- risk of mortality from collision with trains
- pollution from chemicals and dust (especially to water courses), fumes, noise, vibration and light from construction through to operation and post-operation maintenance

- inadequate evidence for no Likely Significant Effects (LSEs) resulting from insufficiently robust ecological surveys
- absence of evidence of consideration of in-combination and cumulative effects
- a mitigation design incapable of reducing these threats sufficiently to avoid an adverse effect

24. EWR Co needs to consider the time lag between adverse impacts and detectability of effects on the population of barbastelles and other bat species when assessing and monitoring the EWR scheme and the effectiveness of the mitigation strategy. The effects of the different pressures and threats have different time scales. For example, habitat destruction and mortality from collisions have a relatively immediate negative effect, whereas barrier effects that threaten reproduction or reduce genetic diversity take longer and will be harder to detect (e.g. Berthinussen and Altringham 2015: [13]).

25. However, we urge EWR Co to avoid most of these impacts by choosing the alternative, environmentally less damaging Northern Approach to Cambridge (NATC) i.e. from Cambourne North Station to enter Cambridge from the North. The southern approach goes against the well-established ‘mitigation hierarchy’ in which project proposals must give the highest priority to ‘avoidance’ (before mitigation) for limiting adverse effects on biodiversity. In shunning this principle, **EWRCo rejected the inconvenient advice of its own Technical Partner, Arup, in 2022 that the alternative northern route into Cambridge was the better option.**

26. Further justification for the NATC derives from the impacts of a southern approach extending beyond the SAC to threaten the Favourable Conservation Status (FCS) of the regional barbastelle population. EWR Co’s radio-tracking survey in 2022 (5.1.8) indicated that the barbastelle colonies at Hardwick Wood SSSI, Madingley Wood SSSI and Waresley and Gransden Woods SSSI interact with the Eversden and Wimpole Woods SAC population due to their ‘shared common foraging areas’, i.e. these colonies are functionally linked to the barbastelles in the SAC and their Core Sustenance Zone (CSZ).

27. As established by the Evidence Plan meeting 10 (8 Oct 2025) between EWR Co and Natural England, the barbastelle colonies in Hardwick Wood SSSI and Kingston Wood SSSI are therefore part of the HRA for EWR, as should also be Madingley Wood SSSI and Waresley and Gransden Woods SSSI in our view.

28. Of particular concern here, considering its particularly close proximity to the route alignment, and the planned Bourn Airfield tunnel construction, is Hardwick Wood SSSI which, according to EWR, contains 4 maternity roosts (para 3.4.7 in *EWR 2022 Barbastelle Radio-Tracking Survey Report (EWRC35-WSP-EB-ZZ-RP-J-00001)*).

29. Our concern also extends to Toft Plantation, just east of Hardwick Wood and, by our calculation, approx 525m from the centre-line of the railway. The functional status of Toft Plantation needs further research but, taking a precautionary approach, needs to

be in scope, given that the EWR Co radio-tracking survey undertaken in 2022 recorded a breeding female barbastelle roosting there.

30. Given the legal imperative of protecting the SAC the focus of our detailed comments below is on issues related to the HRA process. However, many of these also apply to EWR's EIA Report. The importance of the CSZ as functionally linked land has an important resonance in the EIA in that the latter addresses not only the existence of habitat but also its *ecological functionality*. For the barbastelle population, if a piece of land currently functions as a bat foraging area, the EIA requires that this specific function be maintained or mitigated. Replacing a 'foraging area' with a 'non-foraging habitat' is a net loss in the eyes of the law, regardless of how many trees, hedgerows etc are planted.

31. In this regard, while there are numerous mentions in the Consultation of planting trees and other vegetation to provide connectivity and cover for barbastelles during and after construction, it will be years before saplings (e.g.) are big enough to substitute as functionally useful habitat for the bats. Provision of BNG would have had to have been initiated years before the construction and operational phases of EWR begin, and even then, in our estimation, would be unlikely to provide like-for-like and barbastelle-tailored substitution. It will be essential to monitor the growth and survival of plantings, given, for example, the extremely high die-off of saplings planted for the A14 upgrade in 2020, an issue likely to recur with advancing climate change ([23b]).

32. As ([10]) advises, mitigation measures 'will always have to be site-specific and most often also species-specific'.

33. EWR Co does not provide sufficient detail of plantings etc to inspire confidence that they have been carefully calibrated to meet the specific requirements of the rarest and most threatened species, the barbastelle bat. Furthermore, ([10]) warns that '*Compensation (e.g. habitat creation) is unlikely to be sufficient to negate significant negative impacts on bat populations because of their slow reproduction rate.*'

34. EWR Co also needs to give much more consideration to the long-term resilience and monitoring of its proposed mitigation measures and BNG, not just for barbastelles but also for other bat species and wider biodiversity. According to ([10]), '*The design of the scheme should consider the ecological requirements of all bat species present, and those species predicted to expand their range into the study area because of climate change.*'). In this regard, the northward range expansion of Bechstein's bat is a prime example.

35. Although we do not consider that EWR's mitigation strategy is fit for purpose, effective measures to maintain the barbastelle population within the 10km Zone of Influence of the Eversden and Wimpole Woods SAC will also potentially help protect a wider bat assemblage, notably rare species such as Serotine, Nathusius's pipistrelle and Leisler's bats.

Detailed Comments on the Consultation Brochure

P.117: Bourn Airfield Map 79: cutting at southern end of tunnel

36. According to our calculations based on detailed maps included in the Consultation documentation, Hardwick Wood SSSI is only 600m from the centre line of the route alignment. Just east of Hardwick Wood SSSI, even closer (approx. 525m) to the route alignment lies Toft Plantation, for which there is evidence of use as a roost by (one or possibly more) barbastelles from colonies functionally linked to the SAC.

37. A combination of this proximity and the width of the cutting poses an existential threat to the Hardwick Wood barbastelle colony. We calculate the cutting (top to top) at the southern end of the tunnel to be 150m wide which, as a void without providing commuting shelter, will result in major flight path severance of barbastelles, a debilitating energy loss for pregnant and lactating females, and a collision risk – especially for naïve juveniles. Energy expenditure in barbastelles can double from pregnancy to lactation (see refs in Russo et al. 2005: [14]).

38. In the Evidence Plan meeting 8 (9 July 2025), EWR Co described (para 4.2) the cutting ‘moving south from the tunnel’ as ‘*indicatively 100m in width at the widest part (top of the cutting)*’ – 50m narrower than shown in the consultation map. EWR Co sought to assure Natural England that the cutting would not be a barrier to bat movement on the assumption that ‘*barbastelle would fly over the cutting or utilise north-south planting/habitat either side of the cutting to use other crossing points.*’

39. However, this conclusion was ‘*queried*’ by Natural England (para 4.3), and rightly so in our view on the following grounds, bearing in mind that the 150m width indicated by the map magnifies all the concerns associated with the 100m discussed with Natural England in July 2025:

- (i) Based on peer-reviewed literature and recommended best practice, 150m is 7.5 times the 20m gap in cover ‘*considered to be the unfavourable threshold*’ for flight path severance of barbastelles ([32]).
- (ii) The 20m threshold is consistent with the expert evidence on barbastelles submitted in 2025 to the Cambourne to Cambridge (C2C) Guided Busway enquiry ([12]) in which (Table 4) Natural England ‘*strongly advise that 20m is much too wide for an effective crossing point’... ‘Barbastelles would not cross a 20m gap at height before complete darkness, they would instead cross close to the ground where it is more shaded – this therefore would encourage collisions with traffic rather than preventing it, particularly in locations closer to roost sites.*’
- (iii) We note that EWR Co’s erroneous dismissal of the barrier threat posed by a cutting of 100m width may have been influenced by the EWR (2023) Habitats Regulations Assessment-SATC (EWRCS35-WSP-EB-XX-RP-J-000002) which made the unattributed statement (6.3.71) that ‘*Evidence suggests that*

barbastelle bats will cross infrastructure corridors of up to 40m wide by simply flying over them.'

- (iv) There is no evidence that barbastelles would avoid the cutting by diverting their flight paths to '*other crossing points*' and it is speculation that they will do so. Attempting to cross the cutting due to attachment to traditional main flyways, carries mortality risks of predation and collision (see below) with trains; exposure to predation risk is heightened by EWR's proposal for minimal cover within the cutting to avoid making it attractive for bats to forage there (see Evidence Plan meeting 8, 4.5).
- (v) Especially during tunnel construction, '*north-south planting/habitat*' is not guaranteed to provide the quality of cover necessary to offer even the possibility of safe, alternative flight paths.
- (vi) According to ([10]), even if the habitat quality is not altered, bats may be reluctant to travel across the new infrastructure to access roosts or foraging areas. (see 4.3 [10]).

41. These considerations heavily outweigh EWR's contention in this consultation that planting to connect priority habitats '*would help reduce the impact of the wide cutting on wildlife movement, particularly for protected species*'.

42. In summary, likely outcomes of a 150m cutting for barbastelles at the southern end of the tunnel are mortality from heightened collision and predation risk, severance of flight path permeability, delayed access to (and possibly direct loss of) some foraging areas, resulting energy loss for the bats. All of these threats, along with potential limitation of gene flow, can adversely affect population sustainability.

Collision risk etc.

43. As extensively reviewed in ([10]), which see for references, '*... collisions with vehicles, even at low speeds, are most likely to be fatal to bats. However, in contrast to small terrestrial mammals or birds that produce multiple young in a breeding season, bat populations cannot quickly replace losses*'.

'Mortality of individual animals through collision with vehicles can be significant if extrapolated over a large area, or if losses are high at a specific location. The major driver for bat population dynamics seems to be adult, and in particular female, survival thus even slight additional mortality may be threatening to bat populations. Annual mortality of 5% of a colony would be unsustainable and is possible since a large proportion of the colony may be concentrated in a relatively small area at certain times of the year.'

'During the late spring and early summer pregnant and lactating females need to forage earlier and for longer, they make regular returns to the roost to feed young and are

heavier and less manoeuvrable and all these factors increase their exposure to traffic and susceptibility to collisions’.

‘Juveniles are more likely to be casualties than adults because of their reduced manoeuvrability and slower flight, and especially where maternity roosts are near to a transport route.’

‘Overhead power lines (catenary) above the track of electrified railways represent an additional source of potential impacts’.

44. In relation to the likelihood of an adverse effect of EWR on the SAC, we note in particular the 5% threshold for exceeding the annual mortality deemed likely to pose a threat to the sustainability of the population. EWR Co needs to be certain that its mitigation design is sufficient to avoid this level of threat. In this regard we note the absence of attention to, or any details of a post-construction monitoring programme, which is essential to first validate, then evaluate and improve any mitigation design in relation to its efficacy in maintaining the barbastelle population. Berthinussen and Altringham (2012) ([14b]) consider that *‘Demographic effects will be slow to reveal themselves, and monitoring over 10 years may be necessary to provide an insight into the full effects of road developments and mitigation on bat populations’*. There is no reason to suppose that this recommendation should not apply equally to EWR.

45. Collision risk is heightened by proximity to the route alignment. In this regard, the threat is even more acute for barbastelles in Hardwick Wood SSSI and Toft Plantation.

46. In February 2026, MKA Ecology (a third party) carried out a bat activity survey [37] for an outline application for a development of 138 residential dwellings in Hardwick 26/01263/OUT on land south of St Neots Road (see Appendix of this Consultation response), confirmed the presence of barbastelles, thought likely to have originated from Hardwick Wood SSSI, and other scarce bat species:

‘Common pipistrelle was the most frequently recorded species across the surveys, making up 93% of transect passes and 87% of static detector passes. This reflects its widespread distribution across the UK. Soprano pipistrelle was the second most common species but at much lower levels. Other species recorded include noctule, brown long-eared bat, Myotis sp., Nathusius’ pipistrelle, barbastelle and serotine, although all of these species were recorded at much lower numbers, many of which accounted for less than 1% of calls. Barbastelle activity accounted for 4.37% of static recordings, which is notable given the species’ rarity and strong association with ancient woodland. Although no woodland is present on or adjacent to the Site, hedgerow connectivity to Hardwick Wood SSSI (1.3km away) likely explains their presence.’

Cutting at northern end of tunnel

47. The same issues and concerns for the southern end of the tunnel described above also apply to the cutting at the north end of the tunnel (**P.117, map 79**). We calculate the cutting here to be 130 -135m wide (top to top), somewhat narrower than

at the southern end of the tunnel but still a major barrier to the flight paths of barbastelles and other bat species.

48. While the mined tunnel, once operational, obviates the need for the bat crossing proposed at this location in the 2024 Non-Statutory Consultation, this does not address the major barrier effect during the prolonged period of the tunnel's construction.

49. There is substantial evidence from radio-tracking, transects and static detector surveys that the Bourn Airfield site is a major foraging/commuting area for the barbastelles, with flight paths extending to the north of the A428. EWR's 2022 radio-tracking survey demonstrated that the home range for the barbastelles captured at Hardwick Wood SSSI included an area from Knapwell in the north-west to near Boxworth in the north.

50. This direction of travel is strongly supported by evidence provided by Paola Reason to the 2025 C2C Guided Busway enquiry ([37b]) (see also paras 5.1.7, 6.1.14, 6.1.15, 7.2.24, 7.2.25):

5.1.5 'The home range and core foraging areas for barbastelle from the Hardwick Wood colony primarily extend north of the woodland east of Highfield Caldecote and Bourn Airfield, and extend beyond St Neots Road and the A428, as well as within the Scheme boundary. The report in which this is detailed is not in the public domain, but the results were discussed in the HRA [CD1-11.05 TR5.11 para 6.1.2; PDF p55] and maps showing this colony's home range and core areas were shared with Natural England in the April meeting.'

6.2.9 'In the specific location of the Scheme, CD1-11.05 TR5.11, para 6.1.11 p54 describes the extensive radio-tracking of barbastelle throughout the wider landscape. During the radiotracking associated with Bourne Airfield, key barbastelle flight-lines were identified, two of which crossed the A428...'

51. Nearby Waters Wood at Highfields Caldecote is an important part of the functional habitat for the barbastelles from the maternity roosts in Eversden and Wimpole Woods SAC and Hardwick Wood SSSI, and the (presumably) temporary roost in Toft Plantation. Waters Wood has been assessed as a Habitat of Principal Importance (HPI) with high potential for temporary roosts/day roosts/hibernation and vital cover for safe commuting as well as foraging opportunities. Flight paths via Waters Wood are therefore at clear risk of severance from the proposed route alignment through Highfields Caldecote.

52. Barbastelles are very sensitive and susceptible to disturbance, risking roost abandonment and survival. Barbastelles flushed from hibernation in winter are at particular risk: during the slow waking-up process, valuable fat reserves are used up, and if the temperature is too low to forage and replenish reserves, the bats are likely to starve (Tuttle, 2017, How disturbance affects hibernating bats, [10a]).

P. 118: Hardwick and Toft

53. We note that the terms ‘green bridge’ and (on the map) ‘green overbridge’ are introduced without any detailed ecological context, and specifically no mention of barbastelles, as if EWR Co was trying to suppress drawing attention to this species posing a fundamental obstacle to CS3.

54. ‘Ecological context’ demands that EWR Co be explicit about the main barbastelle flight paths it has derived from its composite surveys (radio-tracking 2020 and 2022, transects and static detectors). However, the consultation contains no such current pattern of flight paths, making it impossible to judge if proposed mitigation structures are aligned with key flight paths.

55. We also note that in the maps these structures are, unlike in the 2024 Non-Statutory Consultation, no longer labelled ‘bat crossings’, suggesting that EWR Co thinks we should take it as gospel that these proposed structures co-locate with barbastelle flight paths.

56. It is over a year since we asked EWR to be transparent about this. In December 2024, in relation to the Non-Statutory Consultation at that time, a FOI request was submitted to EWR Co for a map of the flight paths of radio-tracked barbastelles dictating the locations of the ‘bat crossings’ (green bridges and underpasses) marked on the detailed route alignment maps between Highfields Caldecote and Harlton. EWR’s response in Feb 2025 to this request stated that *‘The barbastelle flight paths are not currently mapped from the radio-tracking surveys. The most relevant information is provided within the barbastelle bat-tracking surveys of 2020 and 2022. The information within those reports has informed the location of bat crossings shown within the [2024] non-statutory consultation, however, as we collate more information on the use of the landscape by barbastelle bats then the location and design of crossings will be refined.’*

57. And yet over a year later, with this 2026 Non-Statutory Consultation which we believe to be the last before its DCO application in 2027, **EWR Co continues to show no transparency** on the key flight paths derived from collating its data derived from radio-tracking (see below), transect and static detector data and Habitat Suitability Modelling (HSM). Without the opportunity for public scrutiny of the robustness of these results, we have no confidence in where and why the proposed mitigation structures are sited.

58. On 10 May 2021 our lawyers Leigh Day sent a Freedom of Information request to EWR. After nearly 3 years of legal and other pressure we received some answers to our requests including *‘EWR is asked to provide any report or other analysis it holds which caused it to conclude that embankments and viaducts will be required between Cambourne and Hauxton Junction on the southern approach.’* EWR Co’s response was a series of detailed plans and vertical sections. Of particular significance is that the bat mitigation measures were already identified on the maps prepared by ARUP dated 10 Feb 2022 identifying green bridges. These maps, although dated in the early part of 2022, must have been prepared over many months beforehand, and certainly before the

EWR's 2022 bat surveys were carried out. Any suggestion from this that survey evidence was used to justify pre-conceived locations of bat crossings would be very concerning.

59. There is empirical evidence from studies of roads (although presumed applicable also to railways) of the need for **precise co-location** of crossing points with bat flight paths to avoid severance. Berthinussen and Altringham (2015, [13]) concluded (7.2) that *'Crossing structures should be placed on the exact location of existing bat commuting routes: Attempts should not be made to divert bats from their existing commuting routes.'*

60. Accordingly, in the case of the A428 Black Cat to Caxton Gibbet Road Improvement Scheme, Natural England advised the Planning Inspectorate that crossing point structures *'need to be located precisely on existing flightlines and commuting routes'* of the barbastelles from the Eversden and Wimpole Woods SAC ([29]).

61. The Wensum Valley Barbastelle Project [11] – the most comprehensive and intensive known tracking study of barbastelles – could not find any compelling evidence for the effectiveness of green bridges for barbastelles:

p. 74: *'Our evidence from the adjacent road scheme, the NDR [Norwich Northern Distributor Road], showed that radio-tracked barbastelles avoided the green bridge, instead flying past it to cross at two specific (and potentially unsafe) locations beyond (with higher energetic costs), where they could be at risk from vehicle collisions.'*

p.74: *'Barbastelles in the area of the proposed NWL [Norwich Western Link] have a multitude of flyways and commuting routes that would be intercepted by the road route (see Figure 12), such that, even if green bridges were effective for barbastelles, the four proposed would not be sufficient to adequately cover the many flyways used by the barbastelles in the road area, meaning that many crossings would still be likely to occur at unsafe locations.'*

Pp 74-75: *'Conclusion: the barbastelle-specific evidence indicates that they avoid green bridges and there is a lack of other evidence to indicate that the proposed green bridges would be effective in significantly reducing barbastelle vehicle collision risk or the barrier effect.'*

62. This conclusion on the Norwich Western Link Road green bridges and other mitigation measures was endorsed in a report prepared by Dr Mark Hassall FRES (Emeritus Reader in Animal Ecology, School of Environmental Sciences, University of East Anglia).

'Dr Hassall is also of the opinion that there exists no evidence demonstrating the proposed mitigation will work. He states: '.....that the "Achilles heel" in the NCC case is their claim that damaging impacts to the barbastelle bat colony caused by the proposed development could be avoided by using mitigation measures such as gantries, green bridges and underpasses. As far as I am aware there is no published evidence to support this claim. On the contrary the completely unique biology of barbastelles makes it highly unlikely that such measures would be successful for this species,

however successful they may be for other species such as pipistrelle, brown long-eared or Daubenton's bats.'

'Barbastelle bats are as rare as they are because they have such extremely precise and specialised requirements for a combination of different sheltering and feeding sites and commuting routes between them. It is therefore extremely unlikely that these highly specialised requirements could ever be met by usual mitigation measures deployed for other species.'

63. And finally, *'They [barbastelles] are thus exceptionally unlikely to change their traditional commuting route to use gantries, green bridges or underpasses.'*

64. It is a reasonable assumption that Dr Hassall's final conclusion derived for a road scheme also applies to green bridges over EWR.

65. This conclusion is reinforced by radio-tracking of barbastelles from woodland roosts in Dartmoor which demonstrated that after having fanned out to forage, the bats' *'return commutes to roosting areas were fast and direct'*, in contrast to *'considerably slower and more circuitous'* outward commutes ([19]). Para 6.3.42 of *EWR (2023) Habitats Regulations Assessment-SATC* (EWRC35-WSP-EB-XX-RP-J-000002) concurs: *'Return commutes, prior to sunrise, are fast and direct, with no apparent ties to linear landscape features i.e., the bats tend to move more freely across the open landscape.'*

66. This finding is also supported by research on the use of green bridges by bats in Germany: *'A difference in activity levels between the evening and morning phases at each green bridge location suggests that individuals use larger spaces and do not return via the same route they came.'* (Bach & Müller-Stiehs 2005: *Use of green bridges by wild animals in Baden-Württemberg – Follow-up inspection FE 02.220.2002/LR*).

67. However, the German study did not include barbastelles, which negates the assertion by a senior EWR Co staff member (at the Hauxton EWR drop-in event on 14 March 2026) that the German study supported the use of green bridges by barbastelles.

68. Nevertheless, the overall commuting pattern demonstrated by these studies is that when returning to the roost after foraging, barbastelles from Eversden and Wimpole Woods SAC, Hardwick Wood and the other neighbouring colonies **will cross the EWR route alignment on a broad front**, which calls into serious question the logic and effectiveness of siting mitigation structures at a few fixed locations.

69. Importantly, EWR Co has produced no evidence to show that barbastelles from these different colonies cross in the same places, although EWR assumes that they do. At Evidence Plan meeting 8 (9 July 2025), 5.2, Natural England *'queried whether barbastelles from different woodland locations used the same crossing points.'* EWR *'confirmed that 2022 tracking data showing overlapping foraging ranges, therefore data supports use of same crossing points'.*

70. Without empirical evidence this statement is pure speculation. EWR's 2022 radio tracking survey did indeed show overlapping foraging ranges (for the maternity colonies

in, respectively, the SAC, Hardwick Wood SSSI and Madingley Wood SSSI). However, this was informed by just 3 ‘flight lines’ from individual barbastelles trapped and tagged in, respectively, Hardwick Wood SSSI, Kingston Wood SSSI and Knapwell Wood. The survey report does not address how this very limited data might inform the existence of shared crossing points. Further details of the 2022 tracking survey and its limitations are presented below.

Inadequacy of survey to define crossing points

71. We have significant concerns about the robustness of EWR’s radio-tracking surveys (2020 and 2022) and its transect & static detector surveys (2020) for informing (a) the spatial use by barbastelles from the SAC and other woodlands in the CS3 area; and (b) mitigation design, as described in (1) - (3) below.

1) EWR 2020 tracking survey report (by Corylus Ecology Ltd)

72. The target was to trap and tag up to 15 barbastelles ‘post maternity’, i.e. post-lactating (PL) females, the most important demographic group for the sustainability of the maternity roost. The aim was to (a) locate roosts and roost areas; (b) to determine if there are separate maternity colonies or a single colony with sub-groups; (c) determine core foraging areas and commuting routes.

73. The other target was to trap and tag up to 5 serotine bats post maternity to discover any maternity roosts, but **no serotines were caught**.

74. In the SAC, only 7 barbastelles were trapped and tagged, as shown in the Table below:

Trapped and tagged in Eversden & Wimpole Woods SAC		
Northern Belts	Eastern Belts	Eversden Wood
1 ad♀ (PL), 1 ad♂	2 ad♀♀	3 ad♀♀

75. In the Eastern Belts, however, the tag on one of the 2 females either failed or else the bat moved out of the survey area, so in total, the 2020 study yielded tracking data for only 5 adult females from the SAC, of which 4 were post-lactating.

76. Moreover, the 1 month (August) of EWR’s fieldwork was heavily constrained by weather, covid and other issues:

- **Covid** caused restricted contact between surveyors, and also between surveyors and bats, given the risk of human-bat transfer (3.3.1).
- **Bad weather** resulted in some surveys being cancelled and others restricted as woodlands could not be entered in high winds (1.4, 3.3.5).

- **No survey access** to ‘large swathes’ of land (in some cases to avoid disturbing local residents) at night ‘*which resulted in some bats not being tracked as widely as others*’, and loss of radio signal contact between some surveyors, ‘*making joint bearings more difficult*’ (3.3.6).

2) EWR 2020 Barbastelle Bat Transect and Static Detector Surveys Report (by BSG Ecology)

77. Direct quotations from the report are shown below in italics ([38])

The aim was to gain an understanding of the use of the preferred route option rail corridor by the barbastelle population of the Eversden and Wimpole Woods SAC and of any woodland roosts associated with that population.

Specifically the study sought to:

- *Determine if there are other breeding colonies of barbastelle within the woodlands to the north-west of Eversden and Wimpole Woods SAC around the villages of Eltisley, Gransden, Gamlingay and Waresley.*
- *Determine the foraging range, key flight paths and key foraging areas of barbastelle bats from within the Eversden and Wimpole Woods SAC across the preferred route option corridor and wider landscape.*
- *Determine the foraging range, key flight paths and key foraging areas of barbastelle bats from any other colonies, if present, across the preferred route corridor and wider landscape.*
- *Inform decisions to be made about survey work in 2021.*

3 walked woodland transects were carried out in Gamlingay Wood, Hayley Wood and Waresely & Gransden Woods. We note that none of these woods are part of the E&WW SAC.

12 automated detectors were deployed on 3 occasions from July to September at 8 locations and on two occasions from August to September at 5 locations.

78. We note the following limitations:

- *There were some failures on deployment and these were redeployed later to account for the failed deployments (2.18).*
- *Access was not granted at some locations for the full three month survey period (July – September). Some locations subsequently have data from August and September only (2.19).*

Overall, the results of the automated detector survey confirmed the presence of barbastelle at every recording location. A total of 850 barbastelle passes were recorded across twelve locations over the three month of survey period, equivalent to 14.32 barbastelle passes per survey hour (3.2).

For the purpose of analysis a bat pass is defined as a single, uninterrupted sequence of an echolocation call lasting a maximum of 15 seconds (2.11).

79. However, we consider that a significant caveat to registering the occurrence of a pass is that barbastelles do not always call when commuting and make different calls when commuting, foraging or socialising.

'It should be recognised that a series of separate sound files could represent multiple bats calling infrequently (e.g. as they each pass overhead moving in one direction) or a small number of bats (or even one individual) calling frequently (e.g. bats making repeated foraging passes up and down a feature). This cannot be determined unless bats can be directly observed at all times. Despite this, an indication of overall patterns of use of the location by different species can be established based on the regularity of recording' (2.12).

80. However, overall we conclude that the results from these surveys:

- only confirm the presence of barbastelles in the landscape and none of the individuals can be identified as originating from Eversden and Wimpole Woods SAC.
- fail to meet the specific aims of the survey, as listed above.

81. The robustness of these 2020 studies and their conclusions pales in comparison with the Wensum Valley barbastelle project which, over 6 years (2019-2023), tracked 66 adult females classified as either pregnant, lactating or post-lactating, a granularity of sub-division lacking in the EWR Co surveys.

82. The comparison in rigour between the Wensum and the EWR Co surveys is stark, particularly in their relative ability to reveal reliable, key flight paths and so identify precise crossing points across infrastructure.

3) EWR 2022 trapping survey report (by WSP UK Ltd and their sub-contractors Temple and Corylus Ecology Ltd)

83. In Aug and Sep (post-maternity period) 2022, trapping and tagging was attempted at 8 woodland locations in the railway scheme area to explore their interaction with the SAC.

84. It is not surprising that **only 3 barbastelle flight paths** emerged from survey (post maternity period Aug-Sep), given the very small sample size of individuals radio-tracked. In total, in 6 woodlands, 35 barbastelles were caught and 26 tagged, of which only 10 were breeding females. Only 6 barbastelles (of which only 4 were breeding females) were tagged and trapped in Hardwick Wood. Notably also no barbastelles were caught and tagged in the SAC itself.

85. The 2022 report states (2.7.7) that *'The survey effort outlined in this report gives a snapshot in time of the bat's life cycle, based on a sampling effort considered appropriate for obtaining information on roost location, in line with best practice guidelines...'* and the results of the surveys *'... in combination with other surveys conducted to inform the scheme, provide a robust understanding of the use of the Survey Area by bat species'*.

86. Despite these claims of *'appropriate'* survey effort, leading to *'a robust understanding'*, we consider them to be, as stated, merely a *'snapshot'* and arguably not robust enough.

87. In total, this survey along with the 2020 tracking study resulted in only 5 adult females (of which 4 were post-lactating) being tracked from the SAC, as a contributor to identifying crossing points for deploying mitigation structures.

88. In spite of this in the Minutes of the Evidence Plan meeting 1 (18 Sept 2024) with Natural England, EWR Co *'confirmed barbastelle flight lines based on 2020 and 2022 RT [Radio-Tracking] data; identified key crossing points with reference to the proposed route.'* The semi-colon indicates that EWR is not claiming that the flight paths they found actually identify key crossing points. Had EWR Co done so it would be an assertion we strongly dispute.

89. Natural England had similar concerns, noting that *'it would be useful to see previous reporting [i.e. pre EWR's 2020 and 2022 surveys] to better understand how crossing point locations were derived, and consider proportion of SAC likely to be crossing the route'*. EWR Co responded with *'confirmed approach is summarised in bat survey strategy provided to NE'*.

90. The *'proportion of SAC [barbastelles] likely to be crossing'* is key because, in terms of sustaining viable bat populations and their access to widely dispersed food resources, Berthinussen and Altringham (2015: [13]) suggested (p. 34) that *'For a crossing structure to be effective... at least 90% of bats must use it to safely cross the road, and no more than 10% of crossing bats should be at risk of collision mortality.'* While the bat species did not include barbastelles, it is reasonable to extrapolate the findings to barbastelles. For proof of efficacy, *'at least 90%'* sets a very high precautionary bar which no EWR survey report we have seen addresses, leading us to presume there is no evidence that it has been met.

91. Even at this late stage in the scheme design EWR Co does not have a comprehensive grasp of crossing points and has not applied a precautionary approach to fill the gaps. It is concerning that up to 13 Nov 2025 when EWR Co met with the Planning Inspectorate, only approximately 68% of crossing points had been surveyed and *'it would make precautionary assumptions where access was not available to identify flightlines'* ([30]).

92. EWR Co has not published – in this consultation document or any other in the public domain – even this 68% of surveyed crossing points along with their associated flight paths.

93. Nor, as we have described above, has EWR Co produced evidence to support their contention that barbastelles from the SAC and neighbouring woodland various maternity roosts use shared crossing points.

94. Added to this (as also described above) the Wensum Valley study demonstrated that, when green bridges were co-located with known crossing points, barbastelles avoided using them anyway.

95. Finally, it also needs to be taken into account that these three 2020 and 2022 surveys pre-date EWR's Route Update Announcement in May 2023 when the route changed from south of Cambourne to north of Cambourne. However, the Consultation makes no reflections on the implications and potential impacts of this change on the barbastelle population or any other wildlife at risk.

Hardwick Bridleway 5 Green Bridge

96. At Evidence Plan meeting 8 (9 July 2025), EWR Co assured (4.8) Natural England that Crossing Point 27 [CP27] tracking data '*informed the position*' of the Hardwick Bridleway 5 Green Bridge. Even if this were the case and bearing in mind that there is no evidence that green bridges serve as effective mitigation for barbastelle bats (indeed there is evidence indicating that they don't: see below), this particular bridge is not an exemplar of best practice.

97. In the aforesaid Evidence Plan meeting, EWR Co stated (4.11, 4.12) that the bridge functions for '*bridleway and farm access*', as '*public road and requires pedestrian walkway access*'. '*Surfacing is under consideration, lighting is unlikely to be required although subject to safety requirements*' and '*Very low use overnight is anticipated, therefore limited source of disturbance to bats*'.

98. Although artificial light may not present a physical obstacle, it may nonetheless reduce the availability of habitat when bats avoid large areas and commuting routes illuminated by artificial light at night. Vehicle headlights also affect bat commuting and foraging activity, also effectively resulting in habitat loss. Artificial lighting near a bat roost can also lead to later/non emergence leading to reduced foraging opportunities, and in some cases even lead to bats abandoning or becoming entombed in the roost ([27]).

99. As a Public Right of Way, with all the potential disturbance to bats that entails, multi-functional crossings such as Hardwick Bridleway 5 Green Bridge are considered sub-optimal for use by barbastelles. The Wensum Valley Barbastelle Project report states (p. 74): '*Unfortunately, two of the four proposed green bridges appear to be multi-functional with one having vehicular access and both having Public Rights of Way over*

them (including for use by cyclists and horse riders). The design provided in the Cabinet Agenda indicates that these would be of a similar style to the failed NDR green bridge, with hedgerow planting along each edge and a wide, hard-surfaced track down the centre. These are clearly not optimised to encourage wildlife crossing. Furthermore, crucial to green bridge design is seamless connectivity to the adjacent woodland habitat, yet the information provided states that “tree retention would not be possible for the majority of trees in the immediate vicinity of the alignment”, thus further reducing the likelihood of these structures having any degree of effectiveness.’

100. EWR’s description of the planting on and around the Hardwick Bridleway 5 Green Bridge is too vague to enable a judgement on whether it will provide ‘seamless’ habitat connectivity for barbastelles and other wildlife.

101. However, while that may be achievable in the longer term as plantings mature and integrate with the existing cover, we reject that this will be possible in the short term. During the prolonged construction phase of landscaping, heavy vehicle activity and lighting needed for potential overnight work, it will be impossible to avoid a serious barrier effect on the barbastelles, with likely negative effects on their foraging success, survival and productivity. Whereas EWR Co assured Natural England (see above) that ‘*Very low use overnight is anticipated, therefore limited source of disturbance to bats*’, this presumably referred to the lighting of the bridge once operational, not during construction. Apart from the known aversion of barbastelles to lighting, construction lighting/compound lighting attracts moths away from surrounding foraging habitat, reducing prey availability for the bats.

102. Disruption to the bats’ accustomed foraging patterns and opportunities will be exacerbated by the proposal to divert (to the east of the railway) a ‘*section of the Highfields Caldecote watercourse, a tributary of the Bourn Brook.*’

103. Without knowing the outcome of Natural England’s (NE) assessment of the Hardwick Bridleway 5 green bridge design, we concur with the assurances required in the action log of Evidence Plan meeting 8: ‘*NE to confirm in principle that green bridge cross sections discussed (i.e. c. 20m vegetated section segregated from sources of disturbance from other bridge uses) will function as effective mitigation subject to also being well integrated into the landscape and positioned on existing flightlines [good practice principles]’.*

104. The phrase ‘in principle’, is telling because, as we have stated above, we have no assurance (because EWR Co will not provide the evidence) that the proposed green bridge aligns exactly with ‘existing [barbastelle] flightlines’ and even if they did, **in practice** there is evidence, as described above, that green bridges don’t work for barbastelles.

105. As such, in terms of the mitigation hierarchy, ‘in principle’ is not precautionary enough in our view and goes to the heart of the gamble EWR Co is taking with these highly vulnerable barbastelle colonies. EWR Co has leap-frogged the first ‘avoid’ step of the hierarchy in choosing to press on with this and the other speculative mitigation

structures which make the southern approach to Cambridge unsustainable for barbastelles.

Hardwick Road overbridge

106. Our concern is even more acute for the more multi-functional Hardwick Road Green overbridge which carries a clear risk to barbastelles of death or injury from collision.

107. Other than the 200m figure for the displacement west, EWR Co presents no information on the dimensions of the bridge, whether it aligns with a known key flightpath for barbastelles, and no detail on the specifics of the ‘planted section’ to maintain connectivity, especially for barbastelles from the Hardwick Wood/Toft Plantation maternity roost(s).

108. The disruption associated with constructing this major overbridge adds significantly to the existential threat to the local barbastelle population long before the railway is operational.

109. This issue of timeframes was raised (under AOB) In the minutes of Evidence Plan meeting 10 (8 Oct 2025) between EWR Co and NE when the latter (we presume) ‘*raised the need for clear timescales and integrated planting - to understand the feasibility and implications of construction for the SAC bat population short term, mid-term and long-term. The timeframe for mitigation to become effective will be recognised in future assessment.*’

110. We find it hard to reconcile ‘future assessment’ with informing the ‘short-term’ (i.e. during construction) effectiveness of mitigation. Unless the ‘short term’ prognosis is of no adverse effects on the maintenance of the SAC’s maternity colony and its functionally linked land, there can be no positive outcomes ‘mid-term’ or ‘long term’. EWR Co cannot afford to underestimate the short-term risk because the SAC maternity roost is relatively small and bats are very sensitive to disturbance during the maternity season to the extent that they may abandon their young if disturbed.

Approach to construction

111. Activity and diversity of bats is greatly reduced for 1km or more on either side of motorways and on some A-roads and railways (Berthinussen and Altringham, 2012: [14b]).

112. While railway-based studies are lacking and certainly so for barbastelles, vehicle noise from road traffic appears to reduce foraging efficiency for some bat species (Siemers & Schaub, 2011: [15]). Background noise overlaps with bats’ echolocation calls (acoustic masking), or reduces the attention given to catching prey, or in the extreme, bats may simply avoid areas perceived as being noisy.

113. Ever since the option of a southern approach to Cambridge was chosen, EWR Co has studiously ignored and overlooked the threat to barbastelles and other vulnerable wildlife from years of the highly disruptive and invasive construction phase before the railway ever becomes operational. In previous consultations we have repeatedly highlighted that in this sense construction alone poses an existential threat to the barbastelle population of the SAC and its functionally linked colonies.

114. And to no avail, judging by this latest consultation. Despite EWR's approach to construction having '*been further developed in response to feedback*', the massive scale and location of proposed construction revealed by this consultation do nothing to allay our long-standing concerns, on the contrary they only heighten our concern.

115. During construction of the Bourn Airfield tunnel, Hardwick Wood and its surrounding foraging habitat for barbastelles face major habitat loss and damage, not least from the extensive 'earthworks storage stockpiles', generating pollution from dust, fumes, noise, vibration and light.

116. According to ([10]), pollution from lighting, noise or chemical compounds may significantly increase the barrier effect and have negative impacts on habitat quality during both the construction and operational phases. (see 4.5 in [10]). The risk of fatalities as a result of the construction phase is highest for hibernating bats and for juveniles in maternity roosts (see 6.2).

P. 59: Noise and vibration

'Noise would be generated during construction of the railway by activities such as demolition, roadworks and earthworks. Once the railway and roads are operational, train movements, the operation of maintenance facilities and changes in vehicle traffic would generate noise. Vibration would be generated by construction activity such as piling and tunnelling. Vibration impacts are likely to be minimal during operation due to measures incorporated into the design of the tracks, structures and trains. Our assessment of noise and vibration effects is ongoing and the results will be reported as part of the Environmental Statement (ES).'

117. Persistent loud noise (and vibration) from drilling, blasting and pile-driving during the construction stage could disturb bats in roosts within close proximity to the work.

118. According to ([10]), vehicle noise appears to reduce foraging efficiency for some species. Background noise overlaps with bats' echolocation calls (acoustic masking), or reduces the attention given to catching prey, or at the extreme, bats may simply avoid areas perceived as being noisy (see 4.5.2.2 in [10]).

119. This finding is also supported by research on the use of green bridges by bats (in general) in Germany (Bach & Müller-Stiess 2005: *Use of green bridges by wild animals in Baden-Württemberg – Follow-up inspection FE 02.220.2002/LR*).

120. Noise levels for the barbastelles and other bat species need to be assessed as suitable in relation to the hearing and tolerance levels of the bats, not humans. The Consultation sheds no light on this, and gives no insights on how the following questions by Natural England (NE) were addressed, as reported in the minutes of Evidence Plan meeting 3 (18 Dec 2024) with EWR:

7.1 'NE queried how noise would be assessed for both construction and operation impacts. Current noise assessment data is A-weighted. NE asked if we are going to do any further work on collecting non A-weighted data specific to bats?'

'EWR confirmed that initial modelling would be A-weighted to provide data showing the level of change, once this modelling data becomes available consideration will be given to any further requirements.'

7.2 'NE also asked about noise and vibration impacts to foraging and commuting bats during both construction and operation (concerns around N&V creating a barrier effect particularly during construction)?'

'EWR confirmed that the potential impact pathway for sound, noise and vibration effects upon both roosting and foraging habitat will be considered. EWR confirmed that we would anticipate noise and vibration to be less of an impact for foraging and commuting bats as the timing of construction activities would be more restricted (timings will be confirmed in CoCP).'

P. 117: Bourn Airfield tunnel

From p.117

'...we now propose to construct this tunnel using a mined method that would require incoming utility supplies such as water and power. This would avoid the need for significant works at the surface, including road diversions. It would also reduce disruption to the proposed Bourn Airfield development and would have less environmental impact, including on nearby woodland and groundwater...'

121. EWR Co is explicit in admitting (**p. 118**) that *'We would need to complete some 24-hour and weekend working at certain locations to support the planned tunnelling work at Bourn, as this reduces the risk of tunnel instability and limits ground settlement.'* However, we now understand that mining to construct both this tunnel and the Chapel Hill tunnel will continue 24/7 for 2 years.

122. However, it is not clear to us whether these two 2-year projects will overlap or not, an important consideration for the overall duration of risk to the bats. Either way, in our view, there is no way the barbastelle population will be able to tolerate this level of disturbance. Persistent loud noise (and vibration) from drilling, blasting and pile-driving during the construction stage could pose a major barrier to key flight paths and disturb nearby roosts, risking their potential abandonment.

123. Reference ([10]) advises that *'Disturbance to foraging and commuting bats should be prevented by restricting construction activities to times of the day and year*

when bats are active (i.e. works should generally be planned for the daytime; only during the winter can they also take place after sunset, but only if hibernation roosts are not present) ([10]).

124. In regard to risk exposure, it is significant that barbastelles actively forage throughout the year, they only hibernate if it is very cold. *‘They are relatively tolerant of the cold, and are found in caves, tunnels, cellars and trees in mainland Europe’* ([10b]).

125. With construction and haulage continuing overnight, noise is likely to impede echolocation of prey. Further south on the route alignment, noise emission will be increased by the raised track height necessitated by the viaducts over the Bourn Brook and River Rhee and associated embanked sections of the route.

126. According to ([10]) although artificial light may not present a physical obstacle, it may nonetheless reduce the availability of habitat when bats avoid large areas and commuting routes illuminated by artificial light at night. Given that barbastelles are considered one of the most light-averse bat species (Zeale et al 2012, *Journal of Mammalogy*, 93(4), 1110-1118), arc lighting at night may well add to a barrier effect, possibly even attracting moth prey away from surrounding foraging grounds and/or attracting bat species which would compete with barbastelles for prey.

127. In Table 4 of the expert evidence on barbastelles submitted in 2025 to the Cambourne to Cambridge (C2C) Guided Busway enquiry, Natural England’s concerns about lighting impacts included the request that, as part of the plan for the project, there is *‘a strict ‘no night working allowed’ commitment secured through an appropriate planning mechanism’*. We endorse this recommendation for EWR’s tunnel construction and more generally in any area close to a maternity roost, e.g. Hardwick Wood SSSI.

128. Throughout construction of the proposed route alignment disruption and realignment of water courses – most notably Long Brook (see below) towards the A603 – add to habitat disruption and severance for barbastelles which have long established riverine commuting corridors.

129. Clean, unpolluted water is vital if barbastelles and other bat species are to keep themselves hydrated and healthy, so consideration needs to be given to impacts on the biodiversity, hydrology and nutrient discharge of water courses (including chalk stream tributaries) within the barbastelles’ Functionally Linked Land, e.g. at Bourn Airfield New Village/EWR tunnel and viaduct over the Bourn Brook. Healthy watercourses are also vital for the maintenance of other protected wildlife, notably otters and water voles.

130. Both the mining of the tunnel and the excavation of a deep cutting (indicative 10-12m depth) could have particularly serious impacts on hydrology, including a de-watering risk to the surrounding woodland and other vegetation, with ripple effects on the availability of insect prey for foraging bats. According to IENE (2022: [24]) *‘Cuttings may increase soil erosion and drain aquifers; embankments may change the water regime producing either drier or wetter conditions’*.

131. Potential impact of the EWR scheme near cuttings was among the issues addressed at the Evidence Plan meeting 3 (18 Dec 2024) with EWR on Hydrological Connection. Natural England ‘*confirmed ground water dependent terrestrial ecosystems (GWDTE) and surface water features that may be affected by the EWR scheme*’ and apprised EWR Co of the legal framework for HRA screening. The procedures needed to identify and avoid adverse impacts were defined, including for Habitats Sites more than 2km from the draft Order Limits.

P. 118:

‘The construction and logistics site that was previously proposed above the cut and cover tunnel has been removed. Instead, we would use a 60 metres wide area above the tunnel to monitor construction settlement.’

132. Running directly above the south portal to the Bourn Airfield tunnel is a mains water supply and a sewer pipe running between Highfields Caldecote and Hardwick. Rupture to either of these pipes due to settlement by the de-watering required to construct the tunnel and deep cutting could be catastrophic for the barbastelle and other bat species reliant on the streams heading down the east side of Highfields Caldecote leading into the Bourn Brook.

Pp. 120-121:

133. In the map of the B1046 Comberton Road realignment there is a bridge labelled ‘*Existing Comberton Green overbridge*’. This is an error as there is no existing Comberton bridge.

134. Like the Hardwick Road green overbridge, the Comberton Road Green overbridge is defective as a mitigation structure, not least due to its multifunctionality as a carrier of 24/7 road traffic, a footpath and cycle path. EWR’s assertion that ‘*by reducing the speed limit across the bridge we have been able to reduce the footprint of the bridge as it crosses over the railway*’ is unconvincing and vague – to what speed and how? – and does nothing to disabuse our concern over the efficacy of this bridge as a mitigation structure.

135. We also note that the height of the railway north of Comberton will be raised ‘*to reduce construction impacts and cross over a water course*’, increasing the height of the bridge by 5m. Should the resulting bridge height be 6-7m, this could act as a barrier to barbastelle flight paths.

136. Although intended ‘*to better integrate with the surrounding landscape*’, we can only imagine the scale of disruption in creating ‘*additional landscaping earthworks*’ either side of the bridge. This will reduce permeability for the barbastelles even further, notwithstanding the proposal to widen the bridge ‘*to accommodate a 30-metre-wide planted section to provide habitat connectivity for wildlife...*’. However, it is essential here to follow best practice, indicating that wider planted sections including over the

green bridge are needed. According to ‘Width and Length’ guidance for green bridges, (Landscape Institute 2015: [18d]) recommends: *‘Bridges aiming to achieve connections at a landscape/ ecosystem level should be over 80m in width. Bridges aiming to achieve connections for species at a population level should be around 50m (published guidance recommendations range from 25m-80m, with an average of 50m). Bridges below 20m in width are not recommended as frequency of use has been found to be lower. The length will largely be determined by the number of roads/ railway lines that are crossed. The length will also be influenced by topography as the access ramps should not be too steep. A width to length ratio over 0.8 is recommended.’* This guidance indicates that a 30m-wide planted section, as EWR specifies in this case, is inadequate, it needs to be at least 80m. EWR also needs to comply with the guidance that *‘The vegetation should complement the habitats either side of the structure, using plant species native to the local area.’* Again, landscape manipulation on this scale overlooks the timescale disconnect in thinking of short vs mid to long-term measures – such planting cannot hope to provide a safe or attractive level of cover for barbastelles in the construction phase, during which the damage to the population will be done well before vegetation matures and the railway is operational.

137. We conclude that even if barbastelles used Comberton Road as a safe flyway – and EWR Co provides no evidence whatsoever that they would – the proposed design of the green overbridge makes it highly unlikely to qualify as a mitigation measure. On the contrary, it is more likely to increase the collision risk for any barbastelle that might (hypothetically) try to cross the B1046 at that point. As found in the Wensum Valley Barbastelle Project, barbastelles will probably avoid the Comberton Road green overbridge altogether.

138. Collision risk is heightened by new information on barbastelle flight behaviour. The Wensum Valley study also found barbastelles fly lower than previously thought: *‘There is a misconception that barbastelles are “high-flyers” and therefore not vulnerable to vehicle collisions, contrary to the evidence. From our own data: during trapping surveys, barbastelles are typically caught in mist-nets at heights between 1-2.4 m (this is on flyways and without the use of acoustic lures which could affect their flight height) i.e. well within the vehicle collision zone. We have also observed radio-tagged bats during tracking and when crossing roads and again, flight heights are typically low and within the collision zone.’*

139. Locally surveys have likewise recorded barbastelles recorded flying lower. One reason is that eared moths (the preferred, specialist diet of barbastelles) deliberately fly low to try to evade predation, and the bats follow suit.

P. 122: Bourn Brook – Our [EWR Co’s] latest proposals

140. We welcome that certain concerns have been heeded by EWR Co about this ultra-sensitive feature in the CSZ for the SAC’s barbastelles and other protected wildlife such as water voles and otters. However, the devil is in the detail, and we remain sceptical that the major disruption of the Bourn Brook ecosystem by construction of

this viaduct no longer poses an existential risk to the barbastelle maternity roosts in both Eversden and Wimpole Woods and Hardwick Wood SSSI.

141. The scale of intervention for the viaduct, even to realign ‘a *minor tributary*’ and create the elements of habitat creation listed (which will potentially improve habitat connectivity in the mid- to long term only, not in the heat of construction), will unavoidably result in serious and prolonged sedimentation and potential contamination of the Bourn Brook and its riverine biodiversity.

142. As evidence shows that water voles tend to remain highly sedentary despite efforts to displace them in advance of development, EWR Co may have to resort to the recommended solution (pioneered successfully for small-scale developments) of excavating burrows to expose the voles, then moving them to adjacent, undisturbed habitat before development begins ([20]).

143. Construction of embankments across the Bourn Valley tributaries will be a major undertaking within this nature rich location. Including embankments through Westfield Farm, land belonging to the Countryside Restoration Trust where there are numerous red-listed species thriving. Serious piling will be required to construct embankments up to 7m which are substantial enough to support the largest W12 gauge freight locomotives with their heaviest of loads.

144. The primary physical effects of building embankments over an already saturated ground like the Bourn Valley will be consolidation and settlement, which may cause failure or excessive settlement and lateral spread.

145. However, probably the most significant impacts will be hydrological and environmental as the chalk streams feed down into the Bourn Brook and then into The Granta, The Cam and the River Rhee chalk streams and aquifers. The embankments can interrupt surface and sub-surface water flow, which may lead to ponding on one side and drying out on the other. The added load can increase pore water pressure within the foundation soil. The structure can alter natural groundwater movement, with potential for increased seepage, particularly if not properly designed with internal drainage.

146. Running across the Bourn Valley is the sewer pipe between Little Eversden and Royston Lane pumping station. Rupture of this pipe would be catastrophic for the wildlife dependent on the Bourn Brook and chalk streams for their survival, not to mention a major impact on the aquifer supplying water to the residents of Cambridgeshire.

P. 122: Great and Little Eversden Footpath 26

147. EWR’s textual and graphic depiction of how the railway traverses the Great and Little Eversden Footpath 26 is confusing and contradictory.

148. EWR Co first states that *'The new railway would continue south-east on an embankment, crossing Great and Little Eversden Footpath 26 and a tributary of the Bourn Brook, both of which would go under the railway.'* However, in the first accompanying map this structure is labelled *'Diversion of Great and Little Eversden Footpath 26 onto new overbridge to cross EWR'*.

149. In the next detailed map, this structure is labelled *'Proposed Great and Little Eversden underbridge'*. So we presume Footpath 26 goes under the railway, as of course the tributary of the Bourn Brook must do.

150. EWR Co is remiss in this section of the consultation, as throughout the document, in not cross-referencing this structure to the 'bat crossing' which featured in its 2024 Non-Statutory Consultation, or showing how closely it still aligns. Also, as noted above, the failure to provide survey evidence of a key barbastelle flight path at this location is unacceptable, likewise the absence of any details provided by EWR Co on the length, height or width of this underbridge.

P. 122: Tributary of Bourn Brook underbridge

151. This proposed structure is presumably regarded by EWR Co as a bat crossing but no details are given, including importantly on height (important parameter for bat permeability) and connectivity to commuting habitat. That said, Berthinussen *et al.* (2021: [21]) did not find any studies that assessed underpasses below railways as crossing structures for bats. In the minutes (obtained by Cambridge Approaches on FOI request) of a meeting (2 Nov 2022) with EWR, a Natural England 'bat specialist' *'confirmed that no evidence is known on the use of underpasses and green bridges'*. However, according to ([10]), tunnels/culverts are *'ineffective or give ambiguous results'* for *'open/edge airspace foragers'*, a category which includes barbastelles.

P. 122: A603 Cambridge Road green overbridge

152. Of all the proposed multifunctional green bridges, the high volume of road traffic on the A603 gives us the utmost concern over the efficacy of this crossing for safeguarding barbastelles, particularly given its proximity to the Bourn Brook and the SAC.

153. As noted above, the Wensum Valley Barbastelle Project concluded (Pp 74-75) that *'the barbastelle-specific evidence indicates that they avoid green bridges and there is a lack of other evidence to indicate that the proposed green bridges would be effective in significantly reducing barbastelle vehicle collision risk or the barrier effect.'* It is a reasonable assumption that the Wensum Valley finding for a road scheme also applies to this green bridge over EWR.

154. The height (7m) of the structure may well add to a barrier effect. Nor do we consider that the proposed 30m-wide planted section is wide enough (see para 136, above) or can possibly serve as an effective level of cover and a connectivity, given the

months and years during which the bats will be exposed to an enormous spatial scale of construction (with its disruptive adjacent compounds), earthworks and landscape manipulation (see para. 136).

155. Compare the proposed A603 structure, heavily compromised as a wildlife crossing, with the superior design of ‘**car-free**’, ‘wildlife-only’ bridges green bridges pioneered in Europe and now belatedly being replicated in the UK ([22]).

156. On all these counts, we consider that it is a matter of expediency for EWR Co to claim that the A603 structure is a ‘green overbridge’. Not only do we think it will do nothing to maintain the SAC’s barbastelle maternity roost but it is likely to add to its jeopardy.

P. 122: Diversion of Long Brook watercourse

157. While we welcome any measures to reduce embankment height, we have grave concern over the proposal to divert the Long Brook watercourse ‘*so that it crosses EWR 500 metres south-east of its current location*’.

158. It is making a virtue out of necessity for EWR Co to justify this realignment on the grounds that it ‘*would enhance the local environment*’, especially for commuting barbastelle bats whose flight paths will be at best disrupted, at worse severed given the dense jigsaw of construction compounds around Long Brook which will create a moonscape for months on end.

159. EWR Co offers no detail on the specifics of the proposed ‘woodland and grassland planting’ or ‘*flood compensation*’ to enable any judgement of how compatible it would be with maintaining connectivity for bats. In any case such habitat creation cannot, in our view, ‘*provide habitat and support wildlife connectivity*’ in a timely enough way to mitigate the adverse impacts on the barbastelle population during construction.

P. 122: Harlton Road overbridge

160. EWR makes no attempt to characterise this multifunctional structure as a ‘green’ overbridge, rather it suggests that, for the embankments proposed on both sides of the railway, ‘*The earthworks would also deter bats from crossing the railway here and encourage them to take a safer flightpath*’.

161. There is no evidence whatsoever for this claim. Indeed, in the gross engineering of the landscaping proposed from the A603 to Haslingfield, the most conservative conclusion is that there is no safe place for barbastelles to cross the railway.

P.122: Tunnel south of Harlton Road

162. EWR Co states that the reduction in the initially proposed length of the tunnel confers the benefit, among other things of *‘reducing the amount of material that needs to be transported during construction...’*

163. Nevertheless, it’s clear that huge amounts of diggings from the tunnel will be dumped on surrounding, currently farmland, to the detriment not just of agriculture but to the quality of the natural environment and biodiversity. Given the local geology, the tunnelling spoil will be chalk marl (wet slub that contaminates soil) which cannot support vegetative growth. Even below 15-30cm the subsoil is inorganic and not useful for agriculture. EWR Co will claim to reinstate but almost inevitably the good topsoil will become de-aerated or just mixed with subsoil by lack of care, rendering it useless.

164. Rather than condemning productive farmland to longterm sterilisation and degrading the natural environment, we urge EWR Co to be innovative and follow best practice by remove diggings at the earliest opportunity for landscaping and ecosystem creation elsewhere, ideally at a far remove from the SATC.

165. There are several excellent precedents for this approach, e.g. the collaboration between RSPB and Transport for London to transport 3 million tonnes of excavated soil from the Elizabeth Line to build Wallasea Island, now a major new coastal wetland site for birds ([23]).

P. 123: River Rhee viaduct

166. It is well known from radio-tracking etc that the River Rhee is a key commuting corridor and foraging ground for barbastelles. The profile map shows a proposed passing loop which is positioned directly over the River Rhee and and its floodplain. There is a direct risk of contamination to the chalk stream and aquifer from:

- the construction of the viaduct
- leaking from diesel locomotives
- particulate emissions from diesel locomotives

167. Any contamination of the chalk stream will adversely affect in turn the barbastelle, other bats and wildlife which hydrate or feed in the Rhee and its surrounding vegetation. Furthermore the noise from a diesel locomotive sitting on a passing loop above the Rhee may well create a barrier effect, deterring barbastelles (and possibly other bat species) from flying under the viaduct. It could also deter them from foraging for a distance of over 1km from the noise source (Berthinussen and Altringham 2012: [14b]).-This is especially a risk on top of an elevated position like a viaduct approx 8m high, with the locomotive 4m higher still, and with no surrounding vegetation to muffle the noise.

168. Collision risk for the barbastelles and other bat species is also very high, particularly where the viaduct crosses the River Rhee, the chalk stream being a rich source of the barbastelles' favoured moth prey.

169. Although not shown on the map (p. 112), the the proposed **Knapwell Wood Road green overbridge** is also positioned directly over a diesel locomotive passing loop, with the same noise and toxic diesel emissions risk as described above for the River Rhee.

170. The Knapwell Wood green overbridge is also suboptimal as a crossing point for bats because of its multifunctional design, and its proximity to a rail systems compound and track maintenance access point. In combination these factors carry a high risk of severing flight paths of barbastelles and other bat species from noise, vibration, lighting, and habitat loss.

P. 11: Train Service

171. Since the 2024 Non-Statutory Consultation, the service pattern has been updated as follows: *'We're now proposing a core EWR service of four trains per hour across the whole route, with a possible additional fifth train per hour operating during the busiest hours - or potentially over a longer period if required.'* Each way.

172. East West Rail Service Timings as presented in the 2024 consultation are:
General Operating Hours: Passenger services are anticipated to run:

- *Between 6am and midnight from Monday to Thursday*
- *Between 6am and 1am on Friday and Saturday*
- *Between 7am and 11pm on Sunday*

173. EWR is being built as a MainLine railway and as such, once all sections of the railway are built, other operators will use it, thereby increasing the traffic on the line, greatly increasing the collision risk and barrier effects for bats and other wildlife. Once complete the line will run from Felixstowe port in the east, across to Cardiff port in the west, and down to Southampton port in the south.

174. The impact on the SAC must be assessed using the full capacity of the line for passengers and freight (otherwise you do not have that capacity). The capacity for freight is as follows: *'We've also made provision for one freight path per hour in each direction across the EWR route.'*

175. EWR is being built to W12 gauge to be able to carry the largest ISO transmodal containers and the heaviest of bulk freight. Freight trains over 700m long (increasing collision and barrier risk for bats) will be hauled by diesel locomotives that are especially noisy, pump out particulates, nitrogen oxides, volatile organic compounds and leak diesel fuel, all of which are environmentally damaging to sensitive wildlife habitats and chalk streams.

176. On the freight paths available between Cambridge and Bedford more than 1 freight locomotive can run on the line during any 1-hour period as long as it doesn't delay the passenger services.

177. The planned passing loops over the River Rhee and under Knapwell Wood green overbridge means a diesel freight locomotive will be discharging toxic emissions while it idles for some time until a clear pathway becomes available.

178. This quote specifies the working hours for freight and contradicts the promise made by EWR Co's operations director in 2021 that there would be no freight trains overnight. *'Outside the main passenger service hours, there will be fewer train movements for essential tasks like: Empty train stock movements, Freight services and Maintenance activities.'* It is clear that these activities will carry on throughout the night.

179. Maintenance activities, TMD (Train Maintenance Depot) or TCC (Train Care Centre) facilities will operate 24/7 365 days a year. These are noisy, well-lit sites, with staff facilities and parking. Functions taking place would include; automatic vehicle inspection system (AVIS), train wash/wash plant, stabling, maintenance, wheel lathe work, painting, on track machine delivery and diesel fuelling.

180. A TMD and stabling facilities had been proposed for the Cambourne area in the 2024 consultation. Such noisy well-lit premises within the Zone of Influence of the Eversden and Wimpole Woods SAC and functionally-linked Hardwick Wood colonies risks having a substantially negative effect on barbastelle roost sites and foraging grounds by adding to disturbance, barrier effects and habitat fragmentation.

181. Barbastelle and some other species of bats are active all year round therefore will be exposed to the noise and collision risks of the railway every day throughout their life cycle. A large proportion of insectivorous bat flights occur at a height of less than 4m above the ground, putting them in the same zone as road and rail traffic Bats fly at low speeds (less than 20km/h and weigh between 4 – 30g so are vulnerable to being drawn into the slipstream of passing vehicles ([18]). Barbastelles weigh between 6 -13g.

Timeline: CS3 Bedford to Cambridge Route Corridor Selection

182. Here we set out the timeline and sequence of exchanges between EWR, their consultants, the statutory advisor (Natural England), and evidence from informed Consultation respondents, all of which led to a failure by EWR to adequately consider the environmental threat, especially to the Eversden and Wimpole Woods SAC and its functionally linked land, of adopting CS3 opposed to the less damaging alternative of the northern route to Cambridge (NATC).

183. In our view this failure was material to EWR Co failing to invoke the mitigation hierarchy which prioritises avoidance of the SAC over other interventions to reduce impacts on the environment.

184. We consider that, for all the reasons set out in this consultation response, EWR's mitigation design for the current route alignment will not avoid an adverse effect on the Eversden and Wimpole Woods SAC.

185. Route corridor selection (RCS) '*is the single most effective means of avoiding or reducing ecological impacts*' (O'Brien et al. 2018: *The roads and wildlife manual. Conference of European Directors of Roads (CEDR)*). '*Adapting the preferred route at this stage may avoid delays and financial costs needed to mitigate or compensate for its impacts. This is especially relevant if the species likely to be present include SCC [Species of Conservation Concern] or species for which no effective mitigation exists*' ([18]).

186. EWR Co was set up by the Department of Transport in Dec 2017 ([35]).

187. EWR's *Bedford to Cambridge: Preferred Route Option Report* (2020: [6]) states (1.13) that '*Network Rail initially identified 20 potential broad route corridors between Bletchley and Cambridge, spanning the broad area from between St Albans and Harlow to Peterborough. After appraising the potential corridors against the initial strategic objectives and conditional outputs, five corridors were taken forward for further work. A quantitative assessment of the potential costs and benefits of these five corridors was undertaken before the corridor via the broad area around Sandy was selected as the preferred route corridor in 2016.*'

188. In the Evidence Plan meeting 2 (30 Oct 2024) with Natural England, EWR Co (para 7.6) '*also noted environmental considerations were prevalent throughout early optioneering, including consideration of alternative routes to the north of Cambridge which were not progressed due to the proximity to the SAC*'. It appears that whoever made this claim was ill-informed because the alternative routes to the north of Cambridge are further away from the SAC.

189. Annex B (*Environmental impacts and opportunities*) of EWR's above-mentioned *Preferred Route Option Report* (2020) states (B.3) that '*The comparative environmental assessment undertaken to date is based on a broad review of the route option areas. However, the environmental impacts will ultimately be determined by the specific route alignment that is chosen, which will be informed by further assessment and surveys that may identify other environmental constraints.*' However, up until this point in time the Eversden and Wimpole Woods SAC appears to have been considered only in terms of its ancient woodland, and not for the mobile priority species – the barbastelle bat – for which the SAC was designated.

190. 2019 NSC 28th Jan -11th Mar ([5])

P. 5 '*Much of 2018 was spent developing route options for CS3 using the following Key criteria:*

- *Supporting economic growth*
- *Supporting delivery of new homes*
- *Costs and overall affordability*
- *Benefits for transport users*

- *Environmental impacts and opportunities and now ready to consult on the 5 most promising.'*

191. Consultants Atkins, contracted by EWR Co, carried out Environmental Sustainability Comparative Assessments and the earliest these were made available to EWR Co was April 2019 after the 2019 NSC was completed. Even so, **the consultants failed to make any mention of the critical conservation feature most likely to be adversely impacted by EWR, namely Eversden and Wimpole Woods SAC** designated for its maternity roost of barbastelle bats. Therefore, no barbastelle bat surveys had been carried out by ecological consultants for the EWR project prior to EWR Co choosing the 5 route corridors A-E, all of which took a southern route to Cambridge.

Natural England Guidance

192. This hiatus is significant in terms of the guidance provided by **Natural England** (NE) which responded on 11 March 2019 to EWR's 2019 NSC ([6]) as follows (Pp 245 - 254):

*'A key component of this consultation is a request for opinions on the overall approach EWR Co have taken to developing route options. Whilst NE have not undertaken its own environmental analysis of alternative route options to the North of Cambridge, these options may offer reduced environmental impacts compared to the five put forward within this present consultation. It is essential, and a priority, that a comparative environmental assessment is completed **prior** [Cambridge Approaches emphasis] to selecting route options for consultation, and that the least-impact route on the environment is prioritised. We are concerned at the apparent lack of an environmental justification for the discounting of route options to the North of Cambridge. At this stage, alternative options with a reduced environmental impact should not be discounted and we look to EWR Co to consider these as a matter of urgency. Pending a comparative environmental analysis of all possible route options, NE cannot express a preference on the route options currently proposed.'*

193. Missing Information

'The consultation documents do not detail what environmental constraints and opportunities lie within the 15km corridor. Yet, this information is essential to informing a decision on route options, and this basic mapping analysis should be made available since 4.7 within the Technical Report states that "a wide range of potential environmental features have been mapped to inform potential route options, which are described further in Annex D.'

194. Habitats Regulations Assessment

'Any route, which has potential to impact a European designated site either directly or indirectly will need to be subject to the HRA process. In particular, a HRA will be required to screen possible impacts to the Wimpole SAC (including functionally linked land), and any water-related impact pathways to the European Sites.'

195. Even though the above NE guidance had been directly sent to EWR Co as part of the NE consultation response **it appears not to have been passed on to Atkins**, which may have contributed to Atkins omitting to include the Eversden and Wimpole Woods SAC in their Environmental Sustainability Comparative Assessments.

196. EWR Co announced that the EWR Project was declared a NSIP on 10 Sep 2019.

197. EWR Co appointed ARUP to join them on 15 Oct 2019 to support them in early works for the EWR Project.

EWRCo. Letter to Natural England

198. EWR Co wrote to Natural England on 14 Dec 2020, attaching the Ecology Survey Strategy and Scoping Report, in which the following emphasises how important the hedgerows, ditches and the Bourn Brook, Granta, The Cam and the River Rhee are for the Eversden and Wimpole Woods SAC:

‘The landscape to the north and north-east of the SAC is far more open than some of the other SAC’s designated for barbastelle within the UK: Ebernoe Common SAC and the Exmoor and Quantock Oakwoods SAC which have breeding colonies in large woodland sites surrounded by a network of extensive woodland and other suitable habitat which are widely considered as optimal barbastelle habitat. The habitats surrounding Wimpole and Hayley/Waresley Woods are more agricultural and interspersed with hedgerows of varying degree of structure and small pockets of isolated woodland. Zeale et al (2012) found that arable habitats were least selected by their study bats due to the low prey populations over arable fields resulting from pesticide use. However, this 2020 study has shown the reliance on those arable habitats to the north of the SAC by the colony. Within these areas is a network of hedgerows but also ditches and watercourse which have been confirmed as being used for foraging and also as a commuting link through the landscape.’

199. The foraging behaviour of barbastelle differs in different regions of the UK. In heavily wooded areas the barbastelles tend to forage within the understorey of woodland for 45mins or more after emergence, then they may break cover to forage more openly. Barbastelles are predominantly tree-roosting, although in Norfolk there is a colony roosting inside a barn at Paston (probably between the oak beams and the wall of the barn) which behaves differently: *‘However, at Paston Great Barn, where barbastelles fly inside the barn after emergence, it is not unusual to see them emerge before dark and follow flight-lines at great speed [presumably to avoid predation] towards their foraging areas’ ([17]).*

200. EWR Co stated in their 2021 Non-Statutory Consultation ([4]) that: *‘We are confident that impacts on the SAC are capable of being mitigated as part of the design of EWR, meaning that this does not differentiate between the two.’ [i.e. the SATC and NATC].*

Natural England Response to 2021 EWR NSC

201. In this regard, Natural England's (NE) response to EWR's 2021 Non-Statutory Consultation included:

*'The NPPF promotes the principle of using land of the lowest environmental value and the National Planning Statement for National Networks advises of the **need to consider reasonable alternatives.**' There is limited environmental information within the documents, particularly relating to any alternative route, and we are therefore unable to draw definitive conclusions on which approach is most likely to be least impactful from an ecological perspective. However, our mapping systems do indicate a greater presence of priority habitat on a southern approach as well as greater proximity to E&WW [Eversden and Wimpole Woods] Special Area of Conservation ('SAC') and Site of Special Scientific Interest ('SSSI').'*

*'The designated feature of the SAC/SSSI is the Barbastelle bat (*Barbastella barbastellus*) and a southerly approach has a greater potential for the severance of key flight lines. The potential for impact on SAC species will need to be assessed within the framework of a Habitat Regulations Assessment ('HRA') and later stages of that process require consideration of alternatives which would include the northern option if an adverse effect cannot be ruled out.'*

'Given that the ecological best practice is avoidance before mitigation and the implications of 'People over Wind' judgement we advise that any potential impact should be brought into the assessment of options, rather than discounted at this stage on the grounds of potential for mitigation. There remains a need to differentiate between no likely significant effect and no adverse effect as a result of avoidance and mitigation measures. We recognise that this is a technical distinction which can be discussed as further details emerge on any potential impact.'

202. **Strategic Environmental Assessment**

'NE notes that some representors intend to make the point that a Strategic Environmental Assessment should be carried out given the weight that this piece of infrastructure will have in influencing spatial policy and housing allocations.'

203. It is likewise the view of Cambridge Approaches, along with that of national conservation NGOs, that a SEA should have been carried out for such a large infrastructure project as EWR.

204. NE responded (22 Apr 2021) as follows to a question in a letter from Cambridge Approaches:

'Q7. Have you been copied on any of the results of survey work carried out in the area – we understand that about 600 surveys have been requested and that many have been refused permission by local landowners? They are also starting a £9.5 Million contract for more surveys.'

Answer – *'NE has not yet seen the results of any of the survey work that EWR has carried out.'*

205. In April 2021 **ARUP** was engaged by EWR Co as technical partner to support Environmental Survey and PEIR (Preliminary Environmental Impact Report) preparation. **Arup supported the NATC, recommending that the SATC was really difficult, not least in terms of how much environmental and other disruption would be caused during its construction.** EWR Co, however, opted for the SATC, overriding Arup’s recommendation. The Arup recommendation can be seen in Appendix 13 page 4 of the May 2023 ETR ([38b]), where it refers to ‘*North Option A (ACP recommendation)*’.

Beds, Cambs & Northants Wildlife Trust Response to EWR 2021 NSC

206. Bedford Cambridgeshire Northamptonshire Wildlife Trust’s response to EWR Consultation 2021 ([28]):

‘Should East West Rail proceed, the Wildlife Trust still favours a route for East West Rail approaching Cambridge from the north, as set out by the CamBedRailRoad group. Such a route would have the lowest impact on the natural environment and priority species and would not cut across or fragment areas with significant potential for landscape-scale enhancement of nature.’

‘We have analysed the latest East West Rail route options and compared them to the Cam Bed Rail Road (CBRR) proposals to understand the potential impacts on designated nature conservation sites. The table below summarises this information’

Nature Conservation Site Assessment Summary	Route Options			
	EWR 1/9	EWR 2	EWR 6/8	CBRR
Sites directly affected (or within 100 m)	6	4	4	2
Sites within 500 m	5	5	6	0
Total sites potentially affected	11	9	10	2

*The data behind this analysis is available as a separate document. Sites within 100 m are not also included in the sites within 500 m category.

*‘The analysis presented by EWR of impacts on nature conservation sites is **flawed** [Cambridge Approaches emphasis] because it has looked at a wider 2 Km corridor. This gives a **false** [Cambridge Approaches emphasis] impression of the scale of impacts of their route alignments compared to a northern approach to Cambridge. Our analysis summarised in the table above therefore represents a more accurate picture of impacts on nature conservation sites.’*

‘As well as avoiding most nature conservation sites, and priority areas for landscape-scale nature recovery, the CBRR alternative route could also potentially have the advantage of removing the need for the current Cambourne to Cambridge Guided Bus proposals which will directly damage a number of local wildlife sites west of Cambridge.’

‘It is essential that a more joined up approach to planning transport infrastructure nationally and locally is taken than has happened to date.’

207. **Summary [by The Wildlife Trust]**

'At this stage, the Wildlife Trust remains to be convinced that the business case for East West Rail is coherent or aligns with local development plans in Bedfordshire or Cambridgeshire, or local transport proposals such as the Cambourne to Cambridge guided bus. There is a lack of explicit recognition of the cumulative, and in combination impacts of the proposals on the natural environment, borne out of a failure to undertake Strategic Environmental Assessment, or a demonstration of how both the rail proposal and all other anticipated development off the back of it will be sustainable, and reduce the UK contribution to global emissions and climate change. At this stage the Wildlife Trust therefore remains opposed to East West Rail's proposals as they are currently set out.'

208. **Mott MacDonald & WSP Joint Venture** was engaged by EWR Co in December 2021 to undertake the Affordable Connections Project comparing the NATC with the SATC. The results of this work demonstrated that the NATC was less environmentally damaging and would avoid the Eversden and Wimpole Woods SAC, and included many other improvements of opting for the NATC over the SATC ([34]).

209. After nearly 2 years of waiting for the conclusions of the 2021 NSC, we were shocked when the Route Update Announcement May 2023 was made, with the new route serving a new station at Cambourne North, but an alignment continuing to head south, east of Highfields Caldecote to continue with a SATC. This route alignment still runs directly through the CSZ of the Eversden and Wimpole Woods SAC.

210. Certainly, by this time EWR Co had been made aware that for such an internationally important European site the mitigation hierarchy should have been applied to avoid it. EWR Co could thus have avoided the likelihood of an adverse effect on the integrity of the SAC by opting for the alternative, less environmentally-damaging NATC but chose not to act on the assessment of its own technical partner, Arup. EWR Co has not made public any comparative environmental assessment to justify its reasons for choosing a SATC over the NATC and only cites economic reasons for its preference for a SATC.

210a. Here are some quotations from EWR Co's 2023 Bat Survey Strategy ([8]):

'Survey Area

*2.1 Bat field surveys to date has[sic] been undertaken within 100m from all alignment centrelines being considered, with an exception where the proposed alignment overlapped with the Core Sustainance Zone (CSZ) of barbastelle bats (*Barbastella barbastellus*). Where this occurred, the survey buffer was extended to 350m'*

'3. Bat Survey

This section provides a summary of the desk study and field survey undertaken between July 2020 and October 2022. It then develops each to outline the approach from 2023. These are broadly split between surveys to identify roosts and surveys to establish how bats are using the landscape for foraging and commuting within their CSZs.'

'A series of bat surveys between July 2020 and October 2021 were focussed on the identification of bat roosts which were likely to be impacted; the assessment of how the barbastelle bats associated with the Eversden and Wimpole Woods Sac were interacting with the landscape; and bat activity.'

'In 2022 the bat surveys focussed on gathering data on barbastelle bats to inform the HRA and completing winter and summer static surveys to provide an overall baseline of bats in the landscape across the Scheme.'

'3.1 Desk Study

Desk study records were obtained within 500m of the various Scheme alignment options in 2020.'

Good practice ([10]) guidelines suggest: *'Background data searches should be carried out up to a **minimum of 2km** from the proposed development boundary (including temporary works such as construction compounds and haul routes) or extended up to 10km for larger projects (Collins 2026), e.g. guidance in Switzerland based on the average flight distance from the roost of M. myotis (C. Eicher pers. comm.). Statutory designated sites such as Natura 2000 sites or nationally important sites for bats within 10km should also be considered.'*

211. EWR Co announced their route update report on 16 May 2023 [8]

212. The reason for the choice of the SATC over the NATC was explained in a video [39] from CEO Beth West soon after the May 2023 Route Update Announcement as follows:

'Question: Your own report suggests a northern approach into Cambridge is cheaper and better for the environment. Why have you ignored those findings?

She said: "The southern approach connects to the Cambridge Biomedical Campus which has a huge opportunity for growth across the region"

213. This is a major example of the mitigation hierarchy set out in EWR Co's Environmental Statement not being followed [40], p.16: 'The adoption of the mitigation hierarchy is fundamental to sustainable infrastructure and this is applied to all pillars within the Environmental Sustainability Strategy. The mitigation hierarchy is described below:

- Avoidance - Measures taken to avoid creating impacts from the outset
- Rectify
- Minimisation
- Compensation

Approach to Cambridge

213a. Here are some quotations from EWR Co Feedback Report Chapter 3 Approach to Cambridge ([7]).

P.2 *‘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’.*

P. 47 *‘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 approaches 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 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’.*

P.48 *‘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 furthermore detailed work will be undertaken to identify elements that could result in significant environmental impacts.’*

P.48 *‘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.’*

214. Cambridge Approaches utterly rejects the logic of this feedback report, in particular the perverse statement on p. 48 which attempts to make a virtue out of EWR’s widely acknowledged necessity to prioritise access to the Cambridge Biomedical Campus.

215. Where the overall footprint of the A14 upgrade scheme and EWR on the Cambs landscape could have been minimised and contained by co-locating these two major infrastructure projects, EWR Co deliberately chose to inflict irreparable damage on the previously unaffected SATC area, with its unique mosaic of the SAC, SSSIs (most also containing barbastelle maternity roosts), productive farmland and numerous village communities, not to mention a topography much more challenging and costly for railway engineering.

216. EWR's 3rd NSC 14 Nov 2024 – 24 Jan 2025 ([3])

217. EWR's 4th NSC 14 Apr – 9 June 2026 ([1])

Train Care Centre ([9])

218. [bold text below is Cambridge Approaches highlight]

P.42-43 'CSM1/2 west of Barrington Road As with CEA2 west of Wilbraham Road, both CSM1/2 west of Barrington Road options would be located adjacent to the rail line within a managed agricultural field.'

'CSM1 west of Barrington Road has limited data but consists of an agricultural field with no known ecological receptors. Its northern edge coincides with watercourse EWR-HYDWTC SAD-2371. This is a field drain with no direct overland connectivity with the River Rhee Corridor to the north, but which should be avoided. There is the possibility of loss of a low number of trees in the north if these cannot be avoided. Overall CSM1 west of Barrington Road option is considered neutral in comparison with CEA2 west of Wilbraham Road.'

*'CSM2 West of Barrington Road supports small blocks of woodland which abut each end of the site. At the western end the TCC would be bordered by trees and a watercourse (Wardington Bottom) with direct connectivity to the River Rhee catchment to the north. The watercourse is directly connected to the **River Cam/Rhee** [Cambridge Approaches emphasis] catchment further north, which forms part of the wider network of blue infrastructure supporting water vole, a variety of bird species and HPI (coastal and flood plain grazing marsh and deciduous woodland). Water vole records are present within the catchment suggesting the presence of at least a low density population within the Wardington Bottom watercourse as part of a wider metapopulation.'*

*'Priority deciduous woodland habitat is located 250m east of the proposed TCC location on the opposite side of the track alignment. The wider landscape supports barbastelle bats and is within 10km of the **Eversden and Wimpole SAC** [Cambridge Approaches emphasis] for which barbastelle bats is a qualifying feature. There would be opportunity for landscape design to enhance connectivity between woodlands known to support barbastelle bats (interlinked with each other and the SAC) in this location. Overall, CSM2 west of Barrington Road is considered a minor worsening compared with CEA2 west of Wilbraham Road, given the **potential to disrupt functional connectivity with the River Rhee** [Cambridge Approaches emphasis].'*

“Note: the ecology and biodiversity assessment has used aerial photography and other third party coverage as no field surveys have been carried out in this area.”

Unfortunately, the EWRCo. Train Care document does not define the Acronyms CSM and CEA in its long document on the subject. We assume that CEA means Cambridge East Area (Fulbourn) and that CSM means Cambridge South [something beginning with M] meaning the Foxton / Barrington area.

219. Throughout this 2026 NSC response we have highlighted the importance of the chalk streams of the River Cam/Rhee for the Eversden and Wimpole Woods SAC and its barbastelle maternity roost. It is critical that these chalk streams remain undamaged and unpolluted by Train Care Centre activities and any other construction of the railway.

Appendix 1: Abbreviations

Cambridge Approaches / Eversden and Wimpole Woods SAC response to EWR 2026 Consultation

Abbreviation	Meaning
BCT	Bat Conservation Trust
BNG	Biodiversity Net Gain
CBRR	Cam Bed Rail Road
CS3	EWR project section: Bedford to Cambridge (Cambridge Section 3)
CSM	Construction Satellite/Main compound
CSZ	Core Sustainance Zone
DCO	Development Consent Order
EIA	Environmental Impact Assessment
EWR	East West Rail
EWR Co	East West Railway Company Ltd
FCS	Favourable Conservation Status
FLL	Functionally Linked Land
FOI	Freedom of Information
GCSP	Greater Cambridge Shared Planning
HRA	Habitats Regulations Assessment
LSE	Likely Significant Effect
NATC	Northern Approach to Cambridge
NCC	Norwich City Council (as used in Norwich Western Link context)

Abbreviation	Meaning
NDR	Norwich Northern Distributor Road
NE	Natural England
NPPF	National Planning Policy Framework
NSC	Non-Statutory Consultation
NSIP	Nationally Significant Infrastructure Project
NWL	Norwich Western Link
PEIR	Preliminary Environmental Impact Report
SAC	Special Area of Conservation
SATC	Southern Approach to Cambridge
SCC	Species of Conservation Concern
SEA	Strategic Environmental Assessment
SSSI	Site of Special Scientific Interest
TCC	Train Care Centre
TMD	Train Maintenance Depot
WSP	WSP (engineering and environmental consultancy)

Appendix 2: In-combination Effects

A2.1 Projects/schemes and developments (within 10km approx. of the Eversden and Wimpole Woods SAC) which may, in isolation or in-combination, significantly affect the integrity of the SAC. Broadly, the following list is taken from the Cambridge Approaches response to the GCSP Local Plan Consultation January 2026.

1. CAMBOURNE NORTH – 693ha EWR dependent housing and associated development for the increasing population of 53,400 people - where it will be essential to provide clear flight paths and a 2km buffer zone around the different woods used as roost sites by the barbastelles i.e. Elsworth, Overhall Grove, Knapwell.
2. CAMBOURNE TRANSPORT HUB - EWR Station and C2C Busway, associated car parking /cycle parking.
3. CAMBOURNE - S/2903/14/OL Land to the west of Cambourne. [6.8km north of the SAC]

4. CAMBOURNE – 24/01548/FUL Land North and South of High Street Cambourne - Erection of 87 apartments, 30 townhouses, 1,401sqm commercial, realignment of existing road, public space and landscaping.
5. CAMBOURNE – 24/01182/FUL Kindred Cambourne Nursery and Pre-School, High St, Cambourne CB23 6BJ.
6. CAMBOURNE – 23/00123/FUL Land South of Pond Cambourne Business Park, Cambourne - Erection of 256 dwellings and change of use of existing marketing suite to café, landscaping, car parking etc.
7. TEMPSFORD – NEW TOWN 40,000 homes.
8. CAXTON – 24/01817/REM Land at St Peter’s Street, Caxton CB23 3PS - Erection of 9 self-build plots and associated garaging.
9. CAXTON – 24/02508/PRIOR Grange Farm Bourn Road, Caxton CB23 3PP - Change of use of agricultural buildings to 5 dwelling houses.
10. BOURN AIRFIELD - Bourn Airfield development 3,500 homes and associated facilities and infrastructure, 171.81ha.
11. BOURN QUARTER - 20/02568/FUL Phase 1 Wellington Way - Redevelopment of the former Gestamp Factory site at Bourn Airfield for up to 26,757sqm for commercial floorspace purposes. Development is subject to EIA.
12. BOURN QUARTER – 24/03275/SCOP Phase 3, Wellington Way, Caldecote CB23 7FW - Scheme to deliver 7,800 sqm gross external area of floorspace along with associated infrastructure and car parking.
13. BOURN - 24/00414/FUL Great Common Farm Broadway Cambridgeshire Bourn CB23 2TE - Demolition of existing agricultural buildings and replacement with 4 dwellings, alterations and conversion of agricultural buildings to residential ancillary buildings.
14. CHILDERLEY GATE – Development between A428 and St Neots Road.
15. HIGHFIELDS CALDECOTE – Land behind Jason’s Farm development next to Hardwick Wood SSSI. [*where EWRCO has confirmed the discovery of a barbastelle maternity roost*]
16. HIGHFIELDS CALDECOTE - Linden Homes (All Angels Park) development Highfields Caldecote 140 homes in 2 phases (66 homes already built), 6.04ha.
17. HIGHFIELDS CALDECOTE - 24/01754/FUL Demolition of Existing Dwelling and Outbuildings and the Erection of 6 Dwellings together with associated Works. Westwind Highfields Road, Highfields Caldecote CB23 7NX.

18. HARDWICK – Land for development north of St Neots Road, Hardwick, 4.62ha.
19. HARDWICK - S/0113/16/E1 EIA Screening Opinion: for up to 200 dwellings, associated Land to west of Hall Drive, Hardwick, Cambridge.
20. HARDWICK – 24/02099/FUL Newton House, 147 St Neots Road, Hardwick CB23 7QJ - Redevelopment to form 2 No. 1 bedroom, 5 No. 2 bedroom and with associated car parking.
21. HARDWICK – 24/01913/S73 Pumping Station, Grace Crescent, Hardwick CB237AH - 98 dwellings and associated works.
22. HARDWICK – 26/01263/OUT Outline application: for up to 138 dwellings, 323 St Neots Road, Hardwick.
23. COMBERTON – Retirement village complex of 200 homes, clubhouse and other infrastructure. With 144 additional extra care units applied for.
24. COMBERTON – Land at Bennell Farm 3.91 hectares to build 90 units (houses and flats).
25. COMBERTON – 24/00786/FUL Gage Farm, Branch Road, Comberton CB23 7DH Demolition of existing dwelling and outbuildings and the erection of a replacement dwelling, detached garage etc.
26. COMBERTON – Site Ref 40261 Land at Branch Road and Long Road, Comberton CB23 7DL, Agricultural land 100% Grade 2, Estimated dwelling units 130.
27. COMBERTON – Site Ref 40310 Land to the west of South Street, Comberton CB23 7DR, Agricultural land 100% Grade 2, Estimated dwellings 120.
28. COMBERTON – Site Ref 40501 Land at Bush Close, Comberton CB23 7AP, Agricultural land 100% Grade 2, Estimated dwellings 120.
29. TOFT – 20/01992/FUL Bennell Farm West Street, Toft CB23 7EN Erection of 41 dwellings, including two self-build plots and associated development.
30. MADINGLEY – 24/02872/FUL Three Horseshoes CB23 8AB - Erection of accommodation block to create 12 bedrooms and accompanying car park.
31. NORTH-WEST CAMBRIDGE - 24/04533/SCOP Request for an EIA Scoping Opinion with respect to proposed development of up to 4,200 dwellings, 1,675 student bedspaces, 675 co-living units, 6,500sqm senior living accommodation, 100,000sqm flexible employment floorspace etc.
32. CAMBRIDGE - 17/1799/FUL 08/18 and 04/24JJ Thomson Ave CB3 0FB.

33. TRUMPINGTON WEST – Green field development. [*New homes 8km to the east of the SAC*]
34. GRANGE FARM (west Cambridge) – Land for development, 1.21ha.
35. GRANGE FARM – Land adjacent to A11 and A1307 6,000 new homes approx. 20,000m² of logistics hub/warehousing, 12 gypsy and traveller pitches, local centre, mixed retail, commercial and community facilities, educational facilities.
36. ADDENBROOKE’S HOSPITAL SITE – Land for development, 68.21ha.
37. CAMBRIDGE BIOMEDICAL CAMPUS EXTENSION – Land for development, 8.914ha.
38. CAMBRIDGE BIOMEDICAL CAMPUS FURTHER NEW EXTENSION – Land for development, 8.22ha.
39. BELL SCHOOL – Babraham Road Land for development, 7.61ha.
40. DARWIN GREEN – Land for development between Huntingdon Road and Histon Road, Cambridge, 84ha.
41. MELBOURN – Land to west of Cambridge Road, Melbourn, 6.65ha.
42. MELBOURN – The Moor, Moor Lane, Melbourn Land for development, 1.08ha.
43. GREAT SHELFORD – Land between Hinton Way and Mingle Lane for development, 6.14ha.
44. HAUXTON – Redrow Homes Land for the development on the south side of High Street, Hauxton, Title number CB429802.
45. HAUXTON - 23/03080/OUT FORMER WASTE TREATMENT FACILITY, Cambridge Rd, Hauxton CB22 5HT - Demolition of existing structures and redevelopment for employment (office and laboratory) floorspace alongside a new amenity building, country park, 0.40ha.
46. HARSTON – 24/01199/OUT Centenary Works, Button End, Harston CB22 7NX - Demolition of existing buildings and replaced with 7 gypsy and traveller pitches.
47. HARSTON – Site Ref 40476 Land at Royston Road, Harston CB22 7NH Agricultural land 100% Grade 2, Estimated dwellings 145.
48. ARRINGTON - 24/01371/REM Kingston Pastures Farm, Old Wimpole Road, Arrington SG8 0BX - Demolition of agricultural buildings and erection of 5 dwellings.

49. ELTISLEY – 24/02919/FUL Manor Farm, Caxton End, Eltisley PE19 6TJ - Rebuilding and restoration of 5 Barns.

50. GAMLINGAY – 24/01080/OUT Land at Green End/Heath Road, Gamlingay, Sandy SG19 3JZ - 9 Self/custom build residential dwellings.

51. GAMLINGAY – 24/01257/FUL Land rear of 33 Church Street, Gamlingay SG19 3JH - Demolition of existing commercial buildings and erection of 5 dwellings and associated parking amenity space and landscaping.

A2.2 Transport, including major infrastructure projects

- EAST WEST RAIL PROJECT – <https://eastwestrail.co.uk/> potentially a Train Maintenance Depot (with train washing and wheel lathe facilities) and sidings at Cambourne. See Chapter 14.4, pp 404 – 417 of <https://eastwestrail.co.uk/consultation2024/technical-report>
- EAST WEST RAIL PROJECT – https://ewr-production-files.s3.eu-west-2.amazonaws.com/public/ListsBlockMedia/34d42c2def/Cambridge-East-Train-Care-Centre_22.04.26.pdf potentially a Train Care Centre ‘CSM1/2 west of Barrington Road’ location between Harston and Foxton area.
- TEMPSFORD STATION – split level station to cross the existing East Coast Mainline with the proposed East West Mainline.
- A428 BLACK CAT TO CAXTON GIBBET ROAD IMPROVEMENT SCHEME <https://nationalhighways.co.uk/our-roads/a428-black-cat-to-caxton-gibbet/>
- CAMBOURNE to CAMBRIDGE (C2C) Guided busway <https://www.greatercambridge.org.uk/asset-library/Sustainable-Transport/Public-Transport/Cambourne-to-Cambridge/C2C-Project-Update-March-2023.pdf>
<https://www.greatercambridge.org.uk/asset-library/Sustainable-Transport/Public-Transport/Cambourne-to-Cambridge/C2C-EIA-2022/C2C-ES-Scoping-Report-Submission-to-DfT.pdf>
- COMBERTON GREENWAY <https://www.greatercambridge.org.uk/asset-library/Sustainable-Transport/Active-Travel-Projects/Greater-Cambridge-Greenways/Comberton-Greenway/Comberton-Greenway-Public-Engagement-Brochure-2022.pdf>

A2.3 Other land use projects

- AFFINITY WATER and ANGLIAN WATER - AECOM

<https://www.anglianwater.co.uk/SysSiteAssets/household/about-us/a2at-gate-2-submission-annexc-habitats-regulations-assessment-final.pdf>

- GRAFHAM WATER PIPELINE – Grafham water reservoir to Madingley.
- DRY DRAYTON – Scotland Farm **Park & Ride** 13.4ha 2,000 car parking spaces 300 cycle parking spaces.
- HAUXTON M11 – **Park & Ride** extension 2,260 car parking spaces.
- BASSINGBOURN BARRACKS – **Solar Farm** - land belonging to Bassingbourn Barracks.
- CHILDERLY – 21/02173/FUL **Solar Farm** - land to the North-East of Childerley Farm, Childerly Estate.
- MELBOURN – **Solar Farm** - Black Peat Farm, London Road, Melbourn.
- ROYSTON – **Solar Farm** - land at Highfield Farm, Royston.
- WIMPOLE HALL – S/1694/18/FL **Multi-use Trail**
<https://scams.moderngov.co.uk/documents/s107946/Wimpole%20Hall%20M UT%20Committee%20report.pdf>

References

EWR Co documents

- [1] East West Rail Company, 2026 Non-Statutory Consultation Brochure (v1.3, issued 5 May 2026). https://ewr-production-files.s3.eu-west-2.amazonaws.com/public/ListsBlockMedia/e25622dd36/EWR_Consultation-Brochure_v1.3_issued_5May26_midres.pdf
- [2] East West Rail Company, 2024 Non-Statutory Consultation Technical Report. <https://eastwestrail.co.uk/consultation2024/technical-report>
- [3] East West Rail Company, 2024 Non-Statutory Consultation (Nov 2024–Jan 2025). <https://eastwestrail.co.uk/consultation2024>
- [4] East West Rail Company, 2021 Non-Statutory Consultation. <https://eastwestrail.co.uk/2021-consultation>
- [5] East West Rail Company, 2019 Non-Statutory Consultation (Jan–Mar 2019). <https://eastwestrail.co.uk/2019-consultation>
- [6] East West Rail Company, Bedford to Cambridge: Preferred Route Option Report (2020). [Full citation to be added]
- [7] East West Rail Company, Consultation Feedback Report, Chapter 3: Approach to Cambridge. <https://eastwestrail.co.uk/consultationfeedbackreport/chapter-3-approach-to-cambridge>

[8] East West Rail Company, Environmental Surveys – 2023 Bat Survey Strategy Report (EW RCS3-JAC-EV-XX-SY-N-000003). Published prior to Route Update Announcement, May 2023.

[9] East West Rail Company, Cambridge East Train Care Centre (Apr 2026). https://ewr-production-files.s3.eu-west-2.amazonaws.com/public/ListsBlockMedia/34d42c2def/Cambridge-East-Train-Care-Centre_22.04.26.pdf

[35] East West Rail Company, official government page.

<https://www.gov.uk/government/organisations/east-west-railway-company>

[38] BSG Ecology (2020), East West Rail Bedford to Cambridge Barbastelle Bat Transect and Static Detector Surveys Report. Obtained under Freedom of Information request.

[38b] East West Rail Company, Economic and Technical Report, May 2023, Report Appendices. <https://ewr-production-files.s3.eu-west-2.amazonaws.com/public/Route-Update-Announcement/9a2d6ec314/ETR-Appendices-2023.pdf>

Scientific papers and reports

[10] Matthews, F. et al. (2023), Guidance on the consideration of bats in traffic infrastructure projects. Eurobats Advisory Committee.

https://www.eurobats.org/sites/default/files/documents/pdf/Advisory_Committee/Inf.A_C27.4_Eurobats%20Bats%20and%20Traffic%20Publication_final%20draft.pdf

[10a] <https://www.merlintuttle.org/disturbance-harms-hibernating-bats/>

[10b] <https://www.bats.org.uk/about-bats/what-are-bats/uk-bats/barbastelle>

[11] Wild Wings Ecology Ltd, University of East Anglia & Norfolk Wildlife Trust (2024), Wensum Valley Barbastelle Project and the proposed Norwich Western Link 2018–2023.

[12] Wild Wings Ecology Ltd (2024), Wensum Valley Barbastelle Project — supplementary report

https://gat04-live-1517c8a4486c41609369c68f30c8-aa81074.divio-media.org/filer_public/4a/ae/4aae55c3-0585-419e-bbae-eedf9f149494/cd18-15_wild_wings_ecology_ltd_university_of_east_anglia_norfolk_wildlife_trust_2024_wensum_valley_barbastelle_project_the_proposed_norwich_western_link_2018_-_2023_report.pdf

[13] Berthinussen, A. & Altringham, J. (2015), Defra Project WC0769: Bats and roads – assessment of mitigation effectiveness.

<https://sciencesearch.defra.gov.uk/ProjectDetails?ProjectID=18518>

[14] Berthinussen, A. & Altringham, J. (2012), Spatial and temporal patterns of roost use by tree-dwelling bats.

[14b] Berthinussen, A. & Altringham, J. (2012) The effect of a major road on bat activity and diversity. *J. Appl. Ecol.* 49, 82-89.

<https://besjournals.onlinelibrary.wiley.com/doi/full/10.1111/j.1365-2664.2011.02068.x>

[15] Finch, D., Schofield, H. & Mathews, F. (2020), Traffic noise playback reduces the activity and feeding behaviour of free-living bats. *Environmental Pollution* 263.

[16] Hillen, J. et al. (2010), Home range use and habitat selection by barbastelle bats.

[Full citation to be added]

[17] Harris, J. (2020), Barbastelle review, British Isles. Norwich Bat Group.

[19] Razgour, O. et al. (2011), Barbastelle bat radio-tracking study. University of Bristol.

[32] Field survey of barbastelle bat flightline condition from Ebernoe Common SAC.

Guidance and best practice

[18] Eurobats (2024), Bats and Roads publication series.

https://www.eurobats.org/sites/default/files/documents/publications/publication_series/Eurobats%20Bats%20and%20Roads%202024.pdf

[18b] Conservation Trust (2016), Core Sustainance Zones: Determining zone size.

<https://www.bats.org.uk/resources/guidance-for-professionals/core-sustenance-zones>

[18c] The Conservation of Habitats and Species Regulations 2017 (as amended).

<https://www.legislation.gov.uk/ukxi/2017/1012/contents>

[18d] Landscape Institute (2015), Green Bridges: Technical Guidance Note 09/2015 December 2015, Landscape Institute are consultants for Natural England.

https://www.landscapeinstitute.org/wp-content/uploads/2016/01/TGN9_15Green-Bridges-Guide_LI-300dpi.pdf#:~:text=A%20width%20to,of%20th

[20] Mammal Society (2018), New research reveals that water voles remain at risk from development. <https://mammal.org.uk/blog/2018/05/new-research-reveals-that-water-voles-remain-at-risk-from-development/>

[21] Conservation Evidence (2024), Action 980: Bat crossing structures.

<https://www.conservationevidence.com/actions/980>

[24] IENE (2022), Handbook for Wildlife Traffic.

<https://handbookwildlifetraffic.info/handbook-wildlife-traffic/>

[25] CIEEM, Bat Surveys for Professional Ecologists: Good Practice Guidelines (3rd edition). <https://cieem.net/resource/bat-surveys-for-professional-ecologists-good-practice-guidelines-3rd-edition/>

[26] Bat Conservation Trust, Barbastelle bat species account.

<https://www.bats.org.uk/about-bats/what-are-bats/uk-bats/barbastelle>

[27] Bat Conservation Trust, Bats and artificial lighting guidance.

<https://www.bats.org.uk/about-bats/threats-to-bats/lighting>

[33] Gareth Harris (consultant), Comment on bat SAC planning guidance, Wiltshire.

<https://development.wiltshire.gov.uk/pr/s/web-comment/a07Q300000SeFufIAF/gareth-harriss-comment>

News and media

[22] IET Engineering & Technology (2025), National Highways links habitats with three new wildlife-only bridges. <https://eandt.theiet.org/2025/05/21/national-highways-link-habitats-three-new-wildlife-only-bridges>

[23] The Guardian (2025), Elizabeth line soil, Wallasea Island.

<https://www.theguardian.com/environment/2025/nov/26/elizabeth-line-soil-wallasea-island-essex-bird-habitat>

[23b] Why are trees dying beside a major road and how can it be fixed?

<https://www.bbc.co.uk/news/articles/cgld6zn0192o>

Other consultees' responses

[28] Beds, Cambs & Northants Wildlife Trust (2021), Response to EWR 2021 Non-Statutory Consultation (Jun 2021). <https://www.wildlifebcn.org/sites/default/files/2021-06/EWR-WTConsultationResponse20210608.pdf>

[34] Mott MacDonald/WSP, appointed as construction design and management partner for EWR (Dec 2021). <https://www.mottmac.com/en-gb/news/mott-macdonald-and-wsp-appointed-as-construction-design-and-management-partner>

[39] East West Rail: Your Questions Answered 1 (video, May 2023).

<https://www.youtube.com/watch?v=mgd10ZiriUo>

[40] East West Rail Company (EWRCo), Environmental Sustainability Strategy (Oct 2024). [https://ewr-production-files.s3.eu-west-](https://ewr-production-files.s3.eu-west-2.amazonaws.com/public/Environmental-sustainability-strategy.pdf)

[2.amazonaws.com/public/Environmental-sustainability-strategy.pdf](https://ewr-production-files.s3.eu-west-2.amazonaws.com/public/Environmental-sustainability-strategy.pdf)

Infrastructure and planning

[29] Planning Inspectorate, TR010044: A428 Black Cat to Caxton Gibbet Road Improvement Scheme.

[30] Planning Inspectorate, TR040012: Norwich Western Link.

[31] National Highways, A428 Black Cat to Caxton Gibbet scheme.

<https://nationalhighways.co.uk/our-roads/a428-black-cat-to-caxton-gibbet/>

[36] South Cambridgeshire District Council, Wimpole Hall Multi-use Trail planning report.

[37] Greater Cambridge Planning Portal.

<https://applications.greatercambridgeplanning.org/online-applications/>

[37b] Paola Reason, Proof of Evidence on behalf and Cambridgeshire County Council Planning Inspectorate ref. DPI/E0535/25/1

https://gat04-live-1517c8a4486c41609369c68f30c8-aa81074.divio-media.org/filer_public/d2/1c/d21c9581-feaf-4877-b431-aef0a3d4611b/cd26-01-app-w12-1_paola_reason_proof.pdf