

A27 Arundel Bypass:

Supplementary Consultation Response, December 2022

Section 2 - Mitigating the Scheme's Effects on Bats

1 National Highways Stated Aim in Relation to Bats

The stated aim of the proposed bat mitigation is to ‘...minimise the effects on bats and maintain connectivity’. Consultation documents present the method by which National Highways believe this can be achieved.

2 Suitability of Proposed Design

National Highways have justified the proposed Tye Lane bat bridge following an assessment of a design installed in Gwynedd, North Wales in 2012 (Figure 1). The authors of the 2015 DEFRA study cited by National Highways looking at the efficacy of the design concluded ‘**According to our criteria this crossing structure cannot be considered effective**’ (Berthinussen and Altringham 2015).

Additionally, the Gwynedd A487 bridge crossed an unlit two-lane A class road with traffic levels of 10,000 AADT (DfT 2021) whereas the A27 at Tye Lane is a four-lane trunk road with 58,000 AADT (DfT 2021). National Highways have modified the original design yet have not provided any evidence that the impacts of the design changes are positive or negative. The removal of the 2m high edge screening, as stated at NH/WPC meeting 8/12/22, is considered a significant and material change to the original design and further, detailed assessment is therefore expected.

Environmental overbridge

Dimensions	Approx. 30 m length x 5 m width x 6 m height
Features	Constructed at an angle over the road to connect previous known bat commuting routes. The road lies in a cutting and there are steep banks on either side. Woven wooden fencing has been installed to guide commuting bats to the bridge. The bridge itself has vertical sides (approximately 2 m high) and a line of deadwood and planters containing hawthorn (<i>Crataegus monogyna</i>) along its length. See Figure E2.



Figure E2. The environmental overbridge on the A487 from the southeast verge.

Figure 1: Environmental Bridge at A487 (Two-lane, unlit carriageway)

It is worth noting that a UK Government (Natural England 2015) review of bridges for connecting wildlife concluded that:

“Bridges which aim 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 most recent assessment of the efficacy of bat bridges published by Conservation Evidence (Berthinussen *et al* 2021) and undertaken in collaboration with Cambridge University has concluded that there is still insufficient evidence to consider bat bridges to be effective and suitable mitigation for the adverse impacts on bats that result from roads and railways.

3 Suitability of Design for Bat Species Known to be Present

The suitability of the bat bridge for those species known to be present has not been fully assessed. National Highways have stated that the bridge is designed primarily for Whiskered, Serotine and Brown long-eared bats but AECOM ecologists also state that rarer bats will also use it (pers. comm 8/12/22). This assertion is not supported by evidence. The rarest species known to be in close proximity to Tye Lane; Bechsteins and Barbastelle which have IUCN 'Near Threatened' conservation status in the UK, were not represented at the Berthinussen & Altringham 2015 study site.

National Highways are not presenting 2022 bat survey data for scrutiny either at public consultation events or private meetings. The location and orientation of the proposed bridge, which are crucial factors that determine whether any efficacy is likely to occur, cannot be judged from the information provided.

4 Walberton Parish Council Response

The design of the proposed Tye Lane bat bridge cannot be justified based on available information. There is no evidence to support its effectiveness and suitability for this class of road, this location and this composition of bat species.

National Highways Supplementary Consultation documents 2022 do not provide the necessary information required to make an informed decision. There is insufficient evidence that 'environmental bridges' are effective bat mitigation measures and it is therefore considered likely that bat mitigation at Tye Lane is likely to be successful.

Since 2012 there has been an evolution of suitable bat mitigation from 'environmental bridges' towards 'green bridges'. These structures measure a minimum of around 30m in width, are dark environments dedicated for wildlife and not subject to traffic disturbance. These structures are considered to have the greatest potential for being suitable mitigation for bats on linear transport features. The Tye Lane bridge is just 6m wide, is adjacent to lit carriageway features, is not suitably isolated from adjacent traffic, is proposed in isolation rather than as a suite of localised measures and has been significantly modified without subsequent assessment of the efficacy impacts this will have.

The current proposal is based on non-comparable research, proposes a design that has not been shown to be effective in the studies it has been subjected to and is highly likely to have foreseeable adverse impacts on local bat communities; some of which are the rarest species of mammal in England.

Highways England have not demonstrated that their stated aim of minimising effects on bats and maintaining habitat connectivity can be achieved with the proposed bat bridge design.

5 Recommendations

It is recommended that National Highways source an appropriate evidence base for a design of bat bridge that is likely to have the greatest potential for being suitable mitigation at Tye Lane, Walberton.

It should be borne in mind that four of the UK's rarest bat species (Bechsteins, Barbastelle, Alcthoes and Grey Long-eared bats) are located within 1000m of the proposed crossing (National Highways bat survey data 2017-2021, various reports and raw data).

Proposals should draw on a range of designs that are considered 'effective' following post-construction studies that have followed scientific protocols and subject to peer review and published in scientific literature. The studies should be restricted to research on species compositions that have greater comparability to the bat community present than the single study (Berthinussen and Altringham 2015) drawn upon thus far.

References

Berthinussen, A. and Altringham, J. (2015): *Development of a cost-effective method for monitoring the effectiveness of mitigation for bats crossing linear transport infrastructure – Final Report*. Her Majesty's Government, Department of Environment, Food and Rural Affairs Report WC1060

Berthinussen, A., Richardson O.C. and Altringham J.D. (2021): *Bat Conservation: Global Evidence for the Effects of Interventions*. Conservation Evidence Series Synopses. University of Cambridge, Cambridge, UK

Department for Transport 2021 Data <https://www.gov.uk/government/organisations/department-for-transport/about/statistics> (accessed 20/12/22)

Natural England (2015): *Green Bridges: A Literature Review*. Natural England Commissioned Report NECR181. ISBN 978-1-78354-233-8