Contact: Conservation Policy Department
E-mail: swtconservation@sussexwt.org.uk
Date: 4 March 22

By email only
A27ArundelBypass@highwaysengland.co.uk

A27 Arundel Bypass Statutory consultation - 11 January 2022 - 8 March 2022

The Sussex Wildlife Trust (SWT) is a conservation charity for everyone who cares about nature in Sussex. We focus on protecting the rich natural life that is found across our towns, countryside and coast. We want our Sussex to be a home for nature's recovery. A place where people and wildlife can thrive together, where people can enjoy nature and the health and wellbeing benefits it provides.

We have read the information available on the A27 Arundel Bypass Statutory Consultation webpage including the Statutory Consultation Brochure and the Preliminary Environmental Information Report (PEIR).

SWT **strongly objects** to the proposal and do not believe that National Highways (NH) should move to the Development Consent Order (DCO) application stage for the following reasons:

Approach of the PEIR

We do not believe that this Statutory Consultation is fit for purpose or compliant with national guidance. It is recognised in the PEIR that critical evidence is still being collected to inform the baseline upon which likely significant effects of the scheme will be assessed. However, the conclusions on significant effect, required mitigation, the extent of the Draft Order Limits and residual impacts appear to be set out with a false level of certainty that is inappropriate and misleading.

Advice Note Seven: Environmental Impact Assessment: Process, Preliminary Environmental Information and Environmental Statements is clear that whilst there is no prescribed formation as to what PEI should comprise, it should include information that '*is reasonably required for the consultation bodies to develop an informed view of the likely significant environmental effects of the development (and of any associated development)*'. It further states that '*A good PEI document is one that enables consultees (both specialist and non-specialist) to understand the likely environmental effects of the Proposed Development and helps to inform their consultation responses on the Proposed Development during the pre-application stage*'. We do not believe that this PEIR document does this.

As demonstrated in our detailed comments found in Appendix A, the PEIR has not provided reasoned evidence to back-up statements and conclusions on effects, has not demonstrated that the mitigation suggested will be effective or sufficient in addressing impacts and has not allowed stakeholders to meaningfully influence the project through making informed comments.

Ecology and Nature Conservation

This consultation is **fundamentally flawed**, as it does not allow statutory consultees or other stakeholders to assess the impacts of the proposals on biodiversity due to the lack of any baseline survey data or detailed information about the construction and operation phases. We are aware that survey information up until 2019 is available from previous consultations. However, this information is not presented in the PEIR and there is no obvious link to this work from the 2022 consultation webpage. Therefore, we do not consider it accessible to people trying to engage with this consultation. Survey information since 2019 does not appear to be available anywhere and therefore it is impossible to see if the scheme has been designed to avoid impacts where possible, or whether the mitigation and compensation suggested is suitable or sufficient.

The ecological chapter of the PEIR appears to be based on assumptions about data that is not available to the public and is not complete. This means the ecological information is difficult to scrutinise and SWT cannot make informed judgements about the accuracy of the various conclusions and summaries around significant effects.

Despite the lack of detailed information, SWT is still clear that there are major issues with the proposal in relation to:

- Severe severance of ecological networks at a landscape scale, harming biodiversity, particularly the internationally important bat populations and other habitats and species of principle importance.
- No assessment of the impact of the landscape scale severance has been provided, particularly in terms of landscape resilience. The mosaic of high quality habitats found across the scheme area is the reason why it is so abundant in wildlife and yet features are assessed in isolation with little consideration of the integrated nature of the ecosystem. This is a fundamental issue.
- The lack of baseline habitat or species data makes it difficult to consider where proposed mitigation is itself impacting on habitats and species of principle importance
- Unclear and inconsistent information about the biodiversity impacts of the scheme from construction through to operation, especially in terms of severity and longevity
- Most of the conclusions of no significant adverse effect rely on the landscaping, habitat creation and structures set out in the PLEM (Figure 2-1). However, this document provides no detail on the specifics of proposals, if they are suitably designed or what evidence has informed this
- Incomplete information relating to the implementation of the Mitigation Hierarchy and confusion over what is mitigation and what is compensation**.** This makes assessing the cumulative impacts of the scheme not feasible.
- Lack of evidence to provide confidence in the viability and effectiveness of proposed mitigation
- Failure to provide a clear vision of how all the proposed mitigation and compensation will function together to ensure the proposed scheme does not compromise the conservation status of species and habitats
- No evidence provided to suggest the green bridges and underpasses would be effective. From the limited information, it appears the green bridges do not meet the requirements of Natural England guidance and may not be suitably located
- No information is provided on monitoring or long-term management to ensure mitigation and compensation is effective and what remediation would be feasible in the event of failure.
- The separate process that is being undertaken to assess feasibility of Biodiversity Net Gain is problematic. We do not see that any conclusions on BNG can be relied upon given that current impacts on biodiversity are still not established. This is particularly relevant when

there is still a risk that irreplaceable habitats such as veteran trees may be lost, as this would mean the proposal is incapable of achieving BNG.
- It is inappropriate to request stakeholders attend meetings on BNG at very short notice, when they are clearly focused on responding to the Statutory Consultation.

Appendix A sets out more detailed comments on the PIER that must be addressed with urgency.

Climate Change and Greenhouse Gases

Climate change is the biggest threat to biodiversity and decisions must take positive action to reduce the impacts of climate change. The most recent IPPC report[1] has underlined the urgency in which we must all act to address climate change. The report recognizes the interdependence of climate, ecosystems and biodiversity and human societies. It is clear that the business as usual approach of National Highways does not address this urgency.

The government has made clear and bold commitments to addressing climate change through the Climate Change Act 2008 that requires us to reach net zero by 2050. When this is coupled with the recommendations from the Transport for the South East Strategy[2] that car dependency needs to be reduced by 20%, it is clear that a multi-million pound road scheme, that makes active travel options more difficult, is not compatible.

We are in a time when we must all take responsibility for drastically reducing carbon emissions and therefore a vision, which shifts behaviour and seeks to decarbonise travel, should be the focus and priority for NH.

National Need

There is very little understanding of the impact this bypass will have on the wider transport network and we hold no confidence in any future claims of economic benefits. Years of studies have demonstrated repeatedly that new roads induce more traffic, result in increased pressure on adjoining roads and rarely result in economic uplift[3]. Existing traffic modelling, so-called 'Predict and Provide' is outdated and based on flawed, oversimplified solutions[4], and therefore any traffic and travel forecasting is incredibly uncertain. Overall, the demand for a south coast major route is not evidence-based.

Next Steps

This proposal does nothing to help people shift to more sustainable modes of transport and locks West Sussex into many more years of increased traffic, congestion and carbon emissions. It will cause huge severance to both wildlife and communities, at a time when nature is already in catastrophic decline. This matters because biodiversity is not a 'nice to have' - it is fundamental to our very existence. In the broader context of the climate and ecological crises, it is neither acceptable nor in the public interest to forge ahead with such a damaging, short-sighted proposal.

Sussex Wildlife Trust **objects** to this proposal and believe that **NH should halt all plans for the proposed bypass**.

[1] https://report.ipcc.ch/ar6wg2/pdf/IPCC_AR6_WGII_FinalDraft_FullReport.pdf
[2] https://transportforthesoutheast.org.uk/app/uploads/2020/09/TfSE-transport-strategy.pdf
[3] https://www.cpre.org.uk/wp-content/uploads/2019/11/TheZendZofZtheZroad.pdf
[4] https://www.createstreets.com/wp-content/uploads/2022/02/Computer-says-road-1.pdf

If NH continues with the application process, a **further more detailed consultation should be carried out before the DCO application is submitted**. The additional consultation should provide the most recent survey data and an understanding of how the design of the scheme has been informed by this work. It should also clearly explain the mitigation and/or compensation required and the suitability and feasibility of the approach. It must include detailed design information and design commitments for structures, which should be set out in drawings and in a Design Code style document. These drawings and documents should be consulted on with stakeholders before and then amended versions be included in the draft DCO to provide assurances that the highest quality of design is achieved. We note that NH would require no further independent third-party approvals of its detailed design of structures following a grant of the DCO.

Please refer to Appendix B for a list of information and documents we expect to be publically consulted on before the DCO application is submitted. We remind NH that the DCO guidance leaflet on the consultation website - Development Consent for Our major Road Schemes - makes clear that: '*The best time to influence and improve a project is before the DCO application. There is limited time and scope for change after an application is made. This is because of the maximum time legally allowed for an examination.'*

As it stands this proposal is not evidence based and should be stopped.

Yours sincerely,

Tor Lawrence
Chief Executive
Sussex Wildlife Trust

APPENDIX A – DETAILED COMMENTS			
Document	Reference	Section	Commentary
PEIR, Volume 2a Chapter 2: The Scheme	2.3 Scheme Location		
	2.3.15	The PEI Report is based on the maximum area of land likely to be required for construction and operation of the Scheme….	SWT does not believe that the draft Order Limits represents the maximum area of land to be required, as we do not believe the true level of required mitigation is presented in the PEIR. For example, very little information is provided in relation to the detrunking of the existing road and the opportunities for mitigation to increase landscape connectivity for biodiversity.
	2.4 Description of the Scheme		
	2.4.8	c. Roadside features such as lighting would be minimised to reduce visual impacts, whilst remaining consistent with safety requirements.	Overall, there is minimal consideration of lighting impacts within the PEIR. We are particularly concerned about the impact of headlights across the viaduct and around the green bridges and underpasses. It should be noted that the scheme area is currently very dark.
	2.4.8	e. Mitigation to secure the Scheme's target of 10% biodiversity net gain.	Whilst we support a commitment to delivering net gain, mitigation does not constitute biodiversity net gain and cannot contribute to the target of 10%. There is confusion over which elements of the scheme constitute mitigation, which are compensation and which are enhancements littered throughout the PEIR that must be rectified.
	2.5 Design and embedded mitigation		
	2.5.1	The PLEM presented in Figure 2-1 represents the current indicative embedded mitigation measures that form part of the Scheme design	Figure 2-1 is not of sufficient detail or resolution for assessments to be made on suitability of proposals, especially given that no current baseline habitat data is provided in this consultation. NH must provide maps of baseline habitats with which the PLEM can be overlaid to indicate better where impacts may occur.
	2.5.1	d. Green bridges – Binsted Lane Overbridge and Tortington Lane Overbridge - where avoidance of impacts on protected species movement, such as bat flight paths, was not possible, green	We are concerned that these bridges do not meet the requirements of Natural England's green bridge guidance and that their locations have not been informed by survey data. Baseline information to demonstrate where flightlines are currently located has not been presented. However, we are concerned that no mitigation

		bridges have been incorporated within the design to afford habitat connectivity over the proposed new carriageway, with proposed native hedgerows on each side of the overbridge, as well as a central translocated hedge/mature specimen trees.	structure is proposed for Yapton Lane where bat flightlines were identified in previous consultations NH must set out which bats and other species are using these locations currently, which are anticipated to use the structures once built, what evidence has informed this and what level of certainty is provided. It should also demonstrate how all the flightlines across the scheme area would be maintained, both in a north – south direction and an east – west direction. No information is provided about the choice of design, but the green bridge at Binsted Lane on the PLEM does not appear to create landscape connectivity as the bridge meets T-junctions at each end. It is also not clear that the bridges will be able to deliver all the benefits listed given that they are meant to ensure connectivity for a variety of wildlife, walkers, horse riders and vehicles. We do not believe the bridges are wide enough to achieve this. If the primary driver is connectivity for the internationally important bat assemblages then this should be the focus for design. We question the suitability of pedestrian and vehicle access.
	2.5.1	e. Rife underbridges – the structures that cross Binsted Rife and Tortington Rife have been designed to maintain ecological function and existing access, whilst being visually sensitive to the surrounding environments.	As above, no evidence is provided to demonstrate that these underpasses will be effective in maintaining habitat connectivity for the various species recorded in the scheme area. More information must be provided as to which species will and will not use the underpasses and why this is.
		n. Rife realignment – realignment of the existing Binsted Rife to accommodate the Binsted Rife Underbridge. Realignment	Binsted rife is a special stream with associated locally rare habitat along the length of the valley. Very little information is present on the realignment or what impact this might have on the stream

		would be required for a short section of the rife in order to meander under the Binsted rife Underbridge, whilst also allowing for wetland habitat creation.	habitat on site and further downstream. This must be rectified before any assessment of effect can be confidently made. We are particularly concerned about any changes in hydrology given the very rare fen and species-rich rush pasture and spring habitats found along the valley. We are also concerned about the proximity of for drainage ponds and the risk of pollution running off the road.
	2.6 Design Options		
	2.6.8 – 2.6.9	Option for raised vertical alignment with offline Yapton Lane overbridge	As stated above, we believe that previous surveys demonstrated that Yapton Lane was an important bat flightline and yet there is no indication that the need to maintain connectivity for bats has influence the design options for the section of the scheme. This must be addressed
	2.7 Construction		
	2.7	General comment	Minimal information is provided on the construction and phasing elements of the scheme, which makes consideration of true impacts impossible to assess. We are particularly concerned about the haul routes that will be created across the scheme length, including into the Arun Valley. There is also no information about the size or location of maintenance roads, which will have permanent impacts.
	2.7.27	An assessment of the likely environmental implications of the utility connections that are contained within the draft Order Limits will be presented within each topic chapter of the ES.	Disappointing that this information is not contained in the PEIR, even in preliminary form. Given the size of the project and the number of utilities that may need diverting and temporarily connecting, we are concerned that the impacts could be quite severe. Especially around the watercourses.
	2.7.31	Environmental Management Plan	It is frustrating that no draft EMP is provided. No information is provided on monitoring or long-term management to ensure mitigation and compensation is effective or what remediation would be feasible in the event of failure and whose responsibility this would be. This is particularly concerning for the green bridges and underpasses, which appear fundamental to NH conclusion that severance impacts can be mitigated – we do not agree with this conclusion.

			Detailed information on monitoring and management must be set out before the DCO application is made. Effective governance should detail accountability, funding, monitoring, management, triggers for remediation and remediation works
PEIR, Volume 2b Chapter 8: Biodiversity	8.1 Introduction		
	8.1.1	…Measures that would contribute towards enhancement of biodiversity at local and landscape scales are also described and clearly identified as enhancement rather than mitigation.	We do not agree with this statement. There is confusion throughout the document about what measures constitute mitigation, which are compensation and which should be considered enhancement. There is also confusion about which elements of the scheme are addressing potential impacts on which species and habitats and where this might conflict. Detail on the above must be clearly set out before the DCO application (see appendix B)
	8.1.2	This chapter is supported by the following figures and appendices:	It is extremely concerning that no up to date survey data or even summary reports are available as appendices to this report or on the 2022 consultation website. Without this information in is impossible to judge the accuracy of the conclusions on severity of impact or the appropriateness of proposed mitigation and compensation and therefore compliance with the NPSNN.
	8.1.3	There may be interrelationships related to the potential effects on the biodiversity features and other disciplines.	Although this has been stated, what has been done to address these interrelationships, and highlight and discuss the impacts of them cumulatively? For example, is there any understanding of mitigation measures for other issues such as flooding on biodiversity? This is not discussed in Chapter 15 either. Table 8-6 states that the green bridges and underpasses will maintain habitat connectivity, flightlines and migration routes for all bat species, badgers, toads and hedgehogs. Whilst paragraph 8.6.5 states these structures aim to minimise adverse impacts on

			bat and bird assemblages and provide connectivity for other species such as dormouse and badger. No information is provided on the design of the green bridges, but what consideration has been given to the different habitat needs of all these species? Is the assumption that all these species will benefit from the bridge based on previous examples of green bridge use?
	8.2 Stakeholder Engagement		
	8.2.1	This PEI Report seeks to address some of these responses; others will be addressed in full in the ES once the baseline data and the Scheme designs are fully developed.	It is disappointing that this PEIR is limited in its scope. Given the length of time this proposal has been on the table and the many years' worth of surveys already undertaken, it is not clear why this PEIR could not address more of the scoping responses. The lack of detail in this document makes it impossible to give any informed opinion on the viability of the scheme. Both in terms of whether the scheme in this form is actually deliverable and whether the severe ecological impacts can truly be minimised.
	8.3 Assessment, limitations and assumptions		
	8.3.1	This chapter presents a preliminary description of the ecological features within the study area (*Section 8.4*) and the potential ecological impacts and significant effects arising from the Scheme.	Given that the PEIR only gives a preliminary description of the ecological features within the study area and the potential ecological impacts and significant effects, the table on page 42 and 43 of the consultation document can hold no weight. The information is far too limited to accurately assess the significance of effect, there conclusions are premature and misleading to people reading the consultation document. It is also frustrating that it is not clear which elements of the scheme are likely to cause the identified impacts on biodiversity features. For example, there is very little information on the potential impacts of the construction infrastructure as opposed to the land take of the new road. The PLEM shows the location of the compounds but not all the infrastructure coming from them such as

			the haulage roads across the floodplain, which we anticipate are needed to build the viaduct. It is not clear how consultees can suggest improvements without clearly understanding which elements are causing which impacts.
	8.3.2 and Figure 2-1	…the assessment takes into account the embedded mitigation measures that have been integrated into the design as shown in the PLEM (provided in Figure 2-1)	Figure 2-1 is not an appropriate way to lay out embedded mitigation measures for consideration. It is hard to interpret and seems to highlight all the ecological mitigation and enhancements without clearly separating the two. The ES must include a list of embedded mitigation measures that can be properly assessed and make clear exactly which elements of the scheme are mitigation, which are compensation and which are enhancements. We remind NH that the mitigation hierarchy should be central to the design of the scheme. Creating compensatory habitat is a high-risk strategy and a last resort in the mitigation hierarchy. Any proposals for compensation should set out a worst-case scenario in terms of the likely success of delivery of habitat goals.
	8.3.3	Embedded ecological mitigation to address potential significant effects on biodiversity receptors is evolving. The design of these features has been based on professional best practice guidelines and standards, and scientific research available at that time.	No evidence is presented to demonstrate what best practice and scientific research has been used. This should be clearly set out (see appendix B)
	8.3.4	Previous surveys undertaken…	It is not clear why the previous survey information cannot be presented as part of the PEIR as it clearly has relevance. It is not acceptable to present a PEIR with no survey data, it makes it impossible for stakeholders to scrutinise the information and make informed judgements about the suitability of the scheme and the proposed mitigation and enhancements.

			There must be another consultation at the pre-application stage with the survey information available. The DCO application should not be submitted before this is done.
	8.4 Study Area		
	8.4.1	A variety of study areas has been defined and applied in the assessment…	Are the areas of study agreed and supported by the statutory agencies such as Natural England & Environment Agency? If so, this should be clearly stated.
	Table 8-1 Ecological field surveys (2020/21)	General comment	Does 100m from the centreline of the Scheme cover the whole of the area within the redline boundary/draft order limit? We do not believe this survey area/width is sufficient to capture the footprint of the construction impacts as well as operation and necessary mitigation and compensation. A figure should be produced to show which areas have been surveyed for which habitats and species.
	Table 8-1 Ecological field surveys (2020/21)	General comment	We do not believe that surveying within the Draft Order limits is sufficient to assess impacts given the linear/corridor functionality of many of the habitats in the scheme area. As there is no information about where and when surveys were carried out or the precise survey methodology used, we are unable to judge their worth.
	Table 8-1 Ecological field surveys (2020/21)	Wintering and breeding bird surveys were of representative habitats	The way the surveys are described is confusing. It is not clear for example if multiple visits occurred between October and March for the wintering birds transects. Given the mobile nature of birds, we do not believe that limiting surveys to the Draft Order limits provides sufficient data
	Table 8-1 Ecological field surveys (2020/21)	Barn Owls	It is not clear what other surveys have been done. However, if not already undertaken, vantage point surveys of the bypass route should be carried out to see where barn owl are currently crossing the proposed route and at what height.
	8.5 Biodiversity Receptors		
	8.5	General comment	It is concerning that no assessment of the impact of the landscape scale severance has been provided. The assessment focuses on

			individual receptors, but fails to acknowledge the importance of the wider integrated habitat complex. The mosaic of high quality habitats found across the scheme area is the reason why it is so abundant in wildlife. Previous surveys have demonstrated that many species forage and commute across a wide area utilising many different habitat types and locations across the whole scheme area. This fundamental issue has been woefully ignored.
	8.5.8 and 8.5.9	The proposed crossing of the Arun Valley is a viaduct with a clear span across the river channel and would therefore have no effects on in channel flows. Modelling has shown that the viaduct crossing would have insignificant effects on any floodplain flows during either extreme tidal or fluvial events even allowing for climate change.	SWT understands that the hydrological models for the River Arun have not yet been agreed and therefore it is premature to make conclusive statements on impact. In particular, it is not clear how the viaduct pillars may affect the various ditches.
	8.5.19	… At this stage, until the bat underpass and green bridge design has been agreed with Natural England, it is not possible to dismiss a potential likely significant effect on the favourable conservation status of the qualifying features of the Singleton & Cocking Tunnels SAC; namely Barbastelle bat and Bechstein's bat.	Limited information is presented in the consultation to demonstrate that the green bridges are in the most suitable locations to provide bat mitigation. Will the green bridges and underpasses address the specific mitigation issues related to the Barbastelle and Bechstein's bats using Singleton & Cocking Tunnels SAC? What about all the other bat species, which are also protected? Where do they currently cross and what are their requirements?
	8.5.21	…The approach to mitigation takes the form of strategically located green bridges and underpasses. These structures would be integrated into the road and landscape design of the Scheme and would be designed to support habitats suitable for bats, comprising	Figure 2-1 shows an overbridge with some green elements across Binsted Lane and another at Tortington Lane. It is mentioned that Tortington Lane is a bat flight route in paragraph 8.5.18, but not Binsted Lane. It therefore does not seem that the Binsted Lane overbridge has been located specifically to mitigate for impacts on bats. This needs explaining.

		hedgerows and trees (green bridges) or watercourses (underpasses)…	What evidence is there to suggest that green bridges and underpasses are successful mitigation for severance of flightlines? Information on the previous successful use of these structures should be presented. This must relate to all the bat species impacted, not just Bechstein's and Barbastelle
	8.5.22	Landscape planting that increases the coverage of suitable bat habitat and connects favoured foraging and commuting habitat would offset the loss and severance of bat commuting routes.	This is a bold statement with no evidence provided to justify the level of certainty presented. We do not have confidence in the suitability of proposals, given the lack of any detailed information.
	Table 8-4	Binsted Wood – Directly adjacent at closest point to the Scheme	Figure 8-2 shows the redline boundary encroaching into the Local Wildlife Site at Lake Copse. This should be identified in this table.
	8.5.29	Depending on their distance to the Scheme, there is potential for direct and or indirect effects upon the conservation status of all eight LWSs and the Designated Road Verge as a result of habitat severance and increased habitat disturbance from alterations in noise, light, dust, water quality and human activity during Scheme construction.	It is not clear what has been done to avoid impacts on these sites through good design and embedded mitigation. For example, has a buffer area been set around all locally designated sites? More must be done to avoid impacts.
	8.5.30	There is potential for impacts on habitat quality of LWSs and the Designated Road Verge as a result of alterations in air quality (increase in nitrogen deposition as discussed under Ancient Woodland within *Section 8.5*), water quality, noise and light during Scheme operation. Alterations in human activity as a consequence of the changes to public rights of way also has the potential to lead	As above, this should not just be accepted. More must be done to avoid impacts.

		to effects upon habitats, for example, increased trampling of sensitive habitats.	
	8.5.31	…The green bridges integrated into the Scheme design would contribute to the maintenance of connectivity, alongside the use of habitat translocation…	Much more information is needed as to the use of 'habitat translocation'. Which habitats are being translocated and what evidence is there to show that this is a viable and effective method of mitigation. In general, habitat translocation is not an accepted mitigation method. It is also not clear if the design of the green bridges has considered the technicalities of habitat translocation such as soil structure, soil depth, hydrology and the integration of surrounding habitats.
	8.5.38	Therefore, a review of woodlands not currently listed on the AWI, but that lie within 500 m of the draft Order Limits is being carried out to assess if there are other areas of woodland which could meet the criteria for ancient woodland. The results of which will be reported within the ES.	We support this work being done. However, if further ancient woodland is found, the design of the scheme must be altered to ensure impacts are avoided.
	8.5.42	Points e to o	The level of certainty around the anticipation of no loss of ancient woodland should be stated.
	8.5.44 – 8.5.47	Degradation of ancient woodland and removal of veteran and ancient trees	We remind NH of the policy statements outlined in paragraphs 8.5.35 and 8.5.36. We do not believe that the national need for this road has been set out given that it caters in the main for local traffic. We also do not believe that any benefits suggested in the consultation would outweigh the loss or deterioration of ancient woodland and ancient and veteran trees. If the scheme proposes loss and deterioration, this must be justified in policy terms and a full compensation strategy set out.
	8.5.48 – 8.5.55	Indirect impacts of nitrogen	Any process contributions of more than 1% is of concern[5]. More data must be provided on where this will be exceeded and by how

[5] https://www.woodlandtrust.org.uk/media/1687/ammonia-impacts-on-ancient-woodland.pdf

			much. Degradation of ancient woodland through indirect impacts is not acceptable in policy or ecological terms
	8.5.56	By taking traffic off the existing route of the A27, there are numerous areas of ancient woodland where an air quality benefit (up to a large improvement, i.e., 10% of the critical load) is forecast…	Are the forecasts around reduction in traffic realistic given that most previous traffic forecasts have been proven wrong[6]? Evidence must be provided that the claimed reduction in traffic on the existing route will be realised. We question this given the amount of local traffic using this route.
	8.5.57	Further measures will be explored to identify practicable solutions for mitigating impacts on trees, including translocation of veteran trees to retained habitat either as deadwood monoliths or, where practicable, live trees.	Is there any previous evidence to show that translocation of veteran trees is a viable or effective solution? We strongly question the suitability of this as mitigation. The priority should be to avoid loss of these trees. However, it is impossible to comment on this without any information on where the threatened trees are located.
	8.5.58 – 8.5.73	Habitats of Principal Importance	This section is minimal and underplays the significance of the integrated mosaic of habitats that make up this special landscape. We are particularly concerned about the lack of information provided on hedgerows, as these are fundamental to the functionality of the landscape for many species. There must be much more detailed assessment of the impact on hedgerows and how this will affect connectivity throughout the area. In general, fragmentation impacts appear to have been for the large part ignored.
	8.5.69	The localised losses from woodland HPI, river HPI, lowland fen HPI and reedbed HPI represent only a small fraction of their overall extent and is considered unlikely to undermine the conservation status of these ecological features. The alignment of the Scheme would result in	The mitigation hierarchy is clear that impacts on priority habitats should be avoided through good design. There is a clear policy requirement to recover nature and the best way to do that is to conserve all remaining areas of priority habitat. Conservation status has no meaning in this context – any loss of priority habitat should be classified as a significant impact, especially for very rare local habitats such as lowland fen.

[6] https://www.cpre.org.uk/resources/the-end-of-the-road-challenging-the-road-building-consensus/

		direct loss and fragmentation of habitat from wood pasture and parkland HPI.	
	8.5.72	This proposed habitat creation is considered to be of sufficient scope to avoid significant adverse effects on the HPI present following establishment of habitats.	Detailed information of the extent of habitat loss, creation and restoration proposed must be set out before the level of significance can be assumed. We object to the description of compensatory habitat as avoiding significant adverse effects on HPI. The compensation is needed because significant adverse effects have not been avoided. This must be made clear.
	8.5.73	Binsted Rife	There appears to be no evaluation of the impact of channelling Binsted Rife through an underbridge. The likely impacts of this on the rife habitat must be clearly set out and evaluated.
	Table 8-6	General comment	We do not agree with many of the levels of importance assigned to receptors in this table. Species of principle importance have been identified nationally and therefore should hold significant weight.
	Table 8-6	Plants	We do not have confidence in the conclusions on significant effect as so little information is available on the specifics of avoidance, mitigation and compensation. Under plants, the table says that landscape and habitat planting, as indicated on the PLEM, would mitigate for any potential impacts. The table states that direct impacts on scarce arable weeds is likely, however the PLEM makes no mention of arable habitats or what might be done to mitigate this loss. There is also very little information on the wetland plant communities affected with only 'wetland enhancement' mapped on the PLEM. This is not sufficient to conclude no significant effect at this stage, especially given no information on the amount of habitat being impacted or created is provided.
	Table 8-6	Fungi	The information presented states that surveys were carried within or close proximity to the scheme. This is open to huge variation and does not allow SWT to even consider the suitability of the location of the surveys. As a result, this section on fungi does not allow for determination of impacts and there is no way to assess the options regarding the mitigation hierarchy for the fungi. It is unacceptable

			to continually leave information for consideration in the ES of the DCO, as it makes the process of consultation on environmental impacts fragmented and incomplete.
	Table 8-6	Lichen	Another unspecified area of surveys with no results and unknown impacts.
	Table 8-6	Badger	This section highlights that setts would be directly lost and 3 clans directly severed. The mitigation again refers to the use of the green bridges and underpasses. See concerns above about whether the number of different species benefiting from the green bridges and underpasses is realistic given that each species has different habitat requirements. Are there plans available that demonstrate that the green bridges/underpasses are in the locations that provide these multiple functions?
	Table 8-6	Bats	The bat assemblage within the scheme area is of International Importance and must be recognised as so. This area is hugely significant for bats and impacts of harming these populations must not be underestimated. In particular, the wide range of commuting and foraging locations over the entire survey area, which is representative of exceptionally good habitat for these species. This section underplays the significant implications of basing conclusions on limited information. It does not appear that the preferred route, particularly where is crosses Binsted Rife has been informed by ecological information, particularly bat surveys. Although there is acknowledgement of a likely significant impact, the severity of this is downplayed, with complete reliance on the green bridges and underpasses to mitigate impacts. The table states that the underpasses and green bridges have been designed specifically for bats. However, there are 15 different species of bat using the area with different habitat requirements. Additionally, the green bridges appear to act primarily to ensure

			connectivity of the two Lanes that cross them, not specifically as bridges for wildlife. We believe there are other flightlines severed by the scheme which are not being mitigated for, such as at Yapton Lane. More information must be provided as to which species are using which areas and how the structures have been positioned and designed to benefit them. Evidence should be provided to help assess the likelihood of these structures being used by the target species. What options are being considered to avoid and mitigate impacts once the full bat surveys are completed? For example, there must be scope for the bridge locations to change or removal of vehicle access if necessary It is not clear how the information provided will satisfy Natural England's licensing requirements in particular in relation to certainty of mitigation.
	Table 8-6	Breeding birds	The impact on breeding birds is underplayed, especially in terms of indirect impacts once the road is in operation. Evidence shows that roads result in direct mortality from collisions and from avoidance of areas due to noise and visual disturbance, which decreases perceived habitat quality. We are concerned that the potential impact on breeding lapwing in particular, has been ignored and we recommend that advice is sort from the Sussex Ornithological Society. In general, the lack of detailed information provided makes the conclusions difficult to rely on.
	Table 8-6	Wintering birds	We are concerned that the construction impacts have been underestimated and that the conclusion of no significant effect is premature.

	Table 8-6	Barn Owl	We recommend that advice is sort from the Sussex Barn Owl Study Group due to the significant impacts on this species.
	Table 8-6	Dormouse - This effect would be ameliorated where practicable through additional mitigation measures to be detailed in the ES and EPSML.	'Ameliorated where practicable' does not give confidence that this proposal will not have a significant impact on dormice. We understand that dormice have been found in all of the surveyed hedgerows radiating out from the Binsted Woods Complex. It is likely that dormice are dispersing throughout the scheme area from the core population within the Woods. More information must be provided on exactly what mitigation will be delivered and how this will address all impacts, including the risk of sub-population extinction.
	Table 8-6	Fish	We seek clarity on the construction impacts, which indicate that there may be adverse impacts on fish from siltation and pollution. There is no reference to this in the design and mitigation section of the table.
	Table 8-6	Common Toad	No information is provided on the location of toad migration routes or what surveys have been undertaken to identify these. Given this, and that significant numbers of Common Toad that have been recorded breeding in the area, we have no confidence in the assertion that the green bridges and underpasses will be sufficient in maintaining migration routes.
	Table 8-6	Reptile	There is no mention in the table of the need to translocate reptiles, however page 3 of Figure 2-1 shows an area of proposed species-rich grassland which is 'required for reptile receptor area'. It is not clear how reptiles will be excluded from the construction area and if enough time will be allowed for the species rich grassland to be created before translocation occurs. Far more information, particularly on the phasing of works, must be provided.
	Table 8-6	Water Vole	Page 4 of Figure 2-1 includes areas labelled as potential water vole receptor areas. However, it is not clear how water voles will be prevented from entering the construction zones via ditches.

			Additionally, the receptor areas are within the Arun floodplain and therefore any animals in there will likely be impacted from noise and vibration during the construction of the viaduct. Again, it is not clear how the phasing will work to avoid impacts.
	Table 8-6	General comment on table	How are the multiple mitigations for different species being planned to holistically work together? Are the green bridges of suitable size, design and location for the multiple species mitigation they will be supporting? How will the bridges be managed for the variety of species and pedestrian and vehicle access?
	8.6 Design, mitigation and enhancement measures		
	8.6	General comment	No information is provided regarding the detrunking aspect of the scheme, but we would expect it to contribute to nature's recovery and in particular help compensated for habitat and landscape severance. It is clear from the draft Order Limits that there is currently no ambition around habitat creation or enhancement related to this element.
	8.6.1	This will include a range of best practice measures to minimise potential impacts on ecological habitats, protected species and the water environment, that accord with legal requirements and best practice guidance.	It is not clear if conflicts between mitigation measures have been considered yet. For example, best practice is to undertake habitat clearance outside of the bird-breeding season; however, this may conflict with best practice for wintering birds or water voles. This needs to be clearly set out.
	8.6.5	Green bridges	Please refer to our comments above and our concern that the bridges are being relied on to mitigated for a lot of different species and to maintain vehicle and pedestrian connectivity. It is not clear that these bridges will achieve everything that is being suggested. In particular, it is very bold to claim that they will maintain north-south connectivity across the new road. Evidence must be presented to support this claim.
	8.6.6	The bat underpasses at Binsted Rife Underbridge and Tortington Lane Underbridge have been designed to	It is unclear if the Binsted Rife underbridge design is based on up to date bat data. The surveys up to 2019 seem to focus on different areas of the scheme area based on previous route options. SWT

		maintain ecological function and existing access and have been designed specifically to maintain flight paths for bat species which are known to forage and commute along the Rifes.	does not have confidence that the underpass has been designed specifically for bats. No evidence is presented to demonstrate this is the case.
	8.6.11 - 8.6.12	'Would'	These sections demonstrate that much of the design is still outstanding and therefore we question the certainty with which these comments are made. For example, many of the attenuation ponds appear to be close to sensitive habitats such as Binsted Rife. It is not clear what impacts are anticipated.
	8.6.13 – 8.6.25	General comment	This section is vague and does not provide sufficient certainty over impacts and therefore possible mitigation. It therefore makes productive commentary difficult.
	8.6.26	There may be the potential to provide enhancement measures, however, these will be considered following the completion of the habitat and protected species surveys and a full evaluation of the final design undertaken.	It is necessary to consider the full evaluation of the species and habitat surveys before proposing enhancement measures. However, SWT would consider this the same for mitigation and therefore are disappointed with the certainty with which the PEIR presents the likely success of proposed mitigation. National Highways must make clear how the mitigation hierarchy has been followed and in particular, which elements of the scheme constitute mitigation, which are compensation and which are true enhancements.
	8.6.27	Bespoke enhancements	Given that the BNG metric relates to habitats only, SWT wishes to see bespoke enhancements to benefit all the species being impacted by the proposal. For example, scrapes for lapwing.
	8.6.28	Biodiversity units will be determined based on Natural England Metric 2.0 (as per DMRB guidance).	SWT would expect the most up to date version of the metric to be used to inform the Environmental Statement. Information on units lost and created must be provided along with maps showing the areas where BNG delivery is secured.
	8.7 Summary of significant effects		
	8.7	General comment	Despite the continual reference to mitigation, we see no overarching vision for how these mitigation measures will work

			together, if they are compatible and if they fit the existing landscape function.
	8.7.1 and 8.7.4	The effects of the Scheme have been assessed following the consideration of the potential impacts as outlined in *Section 8.5*	As demonstrated in our comments above, SWT does not have confidence in many of the conclusions listed in section 8.5. We do not believe that potential for significant effects should be discounted for many of the biodiversity features when the baseline data and design details are so incomplete.
	8.7.3	National Highways has been and will continue to liaise with the relevant stakeholders to ensure the Scheme includes the measures required to maintain the integrity of Singleton & Cocking Tunnels SAC	When the impact on bats is still unquantified how can NH have confidence that this scheme will be capable of addressing the issues required to maintain the integrity of Singleton & Cocking Tunnels SAC?
	8.7.5	The Scheme design will continue to be developed to avoid potential veteran and ancient trees and where the loss of such trees is unavoidable an explanation as to why the trees would be lost will be provided within the ES in accordance with the NPSNN.	Justification should also be presented in relation to the requirements of the NPPF and wholly exceptional reasons. SWT is not convinced that there is evidence to suggest that the translocation of live veteran and ancient trees can be successful or that their loss can be properly compensated for. If this scheme results in loss of ancient and veteran trees, which are irreplaceable, it cannot achieve a biodiversity net gain.
	8.7.8 – 8.7.9	These indirect effects would be controlled during both the construction and operational phases of the Scheme… …Where noise is considered to have an effect on bats, the use of barriers will be explored	Again, we are not clear how NH have the confidence to imply that this mitigation is certain. Given the number of species of bats in the area and the different types of uses of the various habitats, we do not believe that this 'one type fits all' method of mitigation is sufficient.
	8.7.10	The provision of two green bridges and two underpasses on key routes used by bats	Given that bat data for the 2020 and 2021 season has not been released with the consultation and the preceding bat data does not adequately cover the proposed route. How can the NH state with confidence that the Green Bridges will provided the needed

			mitigation? Have the locations and designs of the green bridges been based on all the bat data? Will this mitigation be suitable for all 15 bat species recorded?
	8.7.11	At this stage a temporary significant residual adverse effect is predicted during the period required for replacement habitat to establish (up to 5 years for hedgerows to establish and between 20 and 30 years for woodland to establish).	We are concerned by the identification of these impacts as 'temporary', when in reality the impacts will last for decades. A definition of temporary should be provided. This must relate to the ecology of the species being impacted, for example in terms of their lifecycle and likely population effects of decreased breeding and feeding opportunities. What evidence is there to demonstrate that the populations currently using these habitats will still be viable at the end of this period? The Defra Metric 3.0 judges that a created native species rich hedgerow will take 5 years to get to moderate condition and 12 years to get to good condition. Therefore, we question why the lower value is being used as a maximum worst-case scenario figure i.e. 'up to'. This needs justifying, particularly with reference to the minimum length of time required to restore the habitats full functionality for the various bat populations. I.e. is an 'established' hedgerow sufficient?
	8.7.8 – 8.7.11	General comment	It appears that this entire section is based on assumptions about data that is not available to the public and may not be complete. Therefore, we cannot assess the suitability or effectiveness of mitigation and it makes this consultation ineffectual.
	8.7.12 – 8.7.13	Barn owls	We strongly recommend that advice is sort from the Sussex Barn Owl Study Group. It is highlighted that more information is needed, as surveys are ongoing. At present, a permanent significant adverse effect is predicted due to the potential local reduction of breeding barn owl numbers. Were concerned that surveys have not truly informed the design process and as such, steps to avoid impacts on conservation status have not been demonstrated.

	8.7.14 – 8.7.16	Dormice, Water Vole and Fish	These sections continue to predict further adverse significant effects for Hazel Dormice, Water Voles and Fish. Although brief information on potential mitigation is suggested, we cannot infer any degree of suitability of effectiveness over the suggestions when there is not information presented regarding locations of current populations, specific areas of impacts.
	8.8 Scheme Options		
	8.8.2 – 8.8.6		The information presented on this issue is limited in scope and therefore we cannot give an informed opinion on preferred options. It is clear that both options will result in potential impacts. We are concerned that information relating to option 2 indicates a number of potential direct and indirect impacts on the irreplaceable habitat of ancient woodland, which would be unacceptable.

APPENDIX B – BIODIVERSITY INFORMATION THAT MUST BE MADE AVAILABLE AHEAD OF ANY FUTURE DCO APPLICATION	
Biodiversity surveys	Access to all biodiversity surveys from 2021.
	List of biodiversity surveys currently on going in 2022, plus dates of when they will be available to for public viewing.
	Reference document of all the best practice guidelines and methodologies informing surveys and habitat and/or species migration and translocation
Mapping	Baseline mapping of all habitats within the Development Order Limits
	Baseline mapping of habitats affected during construction.
	Baseline mapping of habitats impacted during operation phase
	Mapping to show where mitigation/compensation is being proposed. NH need to demonstrate mitigation/compensation is not leading to the loss of further priority habitat
Mitigation & Compensation	Identify how surveys have informed design, mitigation and compensation for all species and habitats
	Table identifying all species and habitat impacted with clear information on avoidance/mitigation/compensations being delivered as part of the scheme. The measures should be cross-referenced with a map identifying the location and scale of mitigation/compensations for each habitat and species. The difference between mitigation and compensation must be clearly identified.
	Likely success rates and timespans for establishing compensatory habitat of sufficient quality informed by the suitability of receptor land and creation methods. Residual impacts on biodiversity receptors should be revised to account for this.
	A risk analysis of the mitigation plan against construction delays. Using a predictive restoration assessment alongside a framework to set and evaluate time-lag sensitive biodiversity goals
	Information on the management of compensatory habitat in perpetuity. Effective governance should detail accountability, funding, monitoring, management, triggers for remediation and remediation works.
	Present a table identifying how mitigation and compensation measures will be monitored during construction and operation. Triggers should be set for remediation if there is a failure to deliver mitigation/compensation or if it is clear it is not working.

	Avoidance measures relating to timings of works collated in a single table. Clear columns detailing when works will take place and the phasing of construction.
Design Details	Specific design detail laid out in a design code on the green bridge and underpasses; to include information on how it meets Natural England's guidance on green bridges. Which of the 15 species of bat will use each structure. Clear identify which species are expected to use each structure with supporting evidence to demonstrate this is viable mitigation for them individual and cumulatively.
	Detailed drawings of construction works including compounds, haulage routes and utility diversions.
	A high quality and detailed de-trunking strategy that increases connectively north – south and contributes significantly to nature's recovery.
Biodiversity Net Gain	Visibility of Biodiversity Net Gain Metric 3.0 (or latest version available) and detail of exact units being lost and created by scheme.
	Map showing proposed locations for 10% BNG and if identified as feasible 24% BNG
Environmental Statement	Preview of the Environmental Statement ahead of DCO with sufficient time to provide comments, which can inform DCO application. This should be based on the Worst Case Scenario that demonstrates the upper most impacts of the scheme. It should extend beyond defining the route of the bypass itself to other factors, such as the road width, verges, height and number of gantries, form of embankments, or the number of piers under the viaduct.