The Woodland Trust
Kempton Way
Grantham
Lincolnshire
NG31 6LL
Telephone
01476 581111
Facsimile
01476 590808
Website
woodlandtrust.org.uk

National Infrastructure Planning
Temple Quay House
2 The Square
Bristol
BS1 6PN

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Lower Thames Crossing
Planning Inspectorate Reference: TR010032

Written Representation by The Woodland Trust

Summary

The following information in this section is a summary of the Woodland Trust's Written Representation for the Lower Thames Crossing project submitted to the Planning Inspectorate and identified under reference: TR010032. The Woodland Trust has the following concerns regarding the proposed scheme:

1. **Impact on ancient woodland**
   National Highways has provided two different figures for total loss of ancient woodland for this scheme, stating that either 6.92ha of ancient woodland would be lost or 7.62ha. While it is not clear why different totals of ancient woodland loss have been provided, the Trust considers that regardless of which figure is correct, both figures amount to an unacceptable loss of ancient woodland. The scheme would also have impact on a significant number of ancient woods through other indirect effects, including disturbance and pollution. The impact on ancient woodland is highly significant, nationally important and entirely unacceptable.
2. **Impact on veteran trees**
   In total, the scheme is proposed to result in the loss or deterioration of 12 veteran trees. Six veteran trees will be subject direct loss and a further six veteran trees will be subject to deterioration. As with the ancient woodland impacts, the Trust considers the impacts on veteran trees to be highly significant and unacceptable. irreplaceable habitats to be entirely unacceptable.
3. **Impacts on Trust's own Ashenbank Wood**
   The Trust's own Ashenbank Wood site will be both directly and indirectly affected by means of a diversion of National Cycle Route 177 (NCR177) through the northern section of the site. Ecological features in the form of over-mature and veteran trees and long-established woodland would be affected, as well archaeological / historical features of significant interest. Engagement on this matter from National Highways has fallen well short and left the Trust in the dark on many of the associated issues.
4. **Nitrogen pollution impacts**

Ancient woodlands across the UK are being adversely impacted by increasing concentrations of airborne ammonia and deposition of nitrogen and the Lower Thames Crossing project will similarly have hugely significant nitrogen emissions. Increased nitrogen levels in ancient woodland lead to losses of biodiversity and impacts on ecosystem services that result in a degradation of the ecological integrity of ancient woodland sites. The Trust considers that all new development should be expected to account for impacts to ancient woodland using a 1% PC threshold and that wherever the PC threshold 1% of the critical load for ancient woodland, then the impacts on those sites will be significant as they would be subject to adverse impact and habitat deterioration. Clarification is required from National Highways on how many ancient woods will be subject to a PC threshold of greater than 1%.

5. **Carbon emissions associated with the scheme**

   Climate change is the biggest long-term threat faced by our natural environment and ecosystems, and thus our own life support systems. The value of woodland in sequestering carbon emissions has been recognised by Government, yet further erosion of ancient and mature woodland by the Lower Thames Crossing project would further undermine the ability to meet its net zero obligations. The total net greenhouse gas emissions for the construction and 60-year operation of the scheme are proposed to be approximately 6.596 million tonnes of carbon dioxide equivalent. This proposed increase in greenhouse gas emissions is entirely unacceptable and is out of step with Government ambitions and commitments towards net zero targets. This project does not align with any of the Government's latest commitments on future road transport or achieving net zero.

6. **Impact on other native woods and hedgerows**

   The losses of non-ancient woodland, scrub, and hedgerows represents a hugely significant loss of important habitat to the local area and will impact on irreplaceable habitats and local wildlife populations greatly. Further steps must be taken to reduce anticipated loss wherever possible. The Trust would appreciate clarity on whether Defra's biodiversity metrics have been applied in determining the level of compensation required for these losses.

7. **Compensation**

   Compensation planting for the loss of 6.92ha of ancient woodland from this scheme appears to be 80.75ha, placing the compensation ratio of new planting to ancient woodland loss for the entire scheme at approximately 11.7:1. The Trust seeks a commitment that National Highways will increase the overall extent of compensation measures proposed beyond those currently proposed and to a ratio of 30:1. We consider that any additional compensation proposals should also include enhancement of existing ancient semi-natural woodland and request that National Highways produces an Ancient Woodland Strategy to fully detail the impacts of the scheme on ancient woods and the mitigation and compensation measures that would be implemented for each individual habitat.

8. **Campaign actions**

   Thousands of people across the UK have taken action and submitted objections to National Highways' consultations on this scheme. Over the course of 2016-2023, 25,515 actions have been taken to object to the scheme, with the Trust's most recent online petition action being signed by 12,444 people, and in doing so calling on the Planning Inspectorate and Secretary of State for Transport to recognise that the Lower Thames Crossing scheme is unacceptable due to: negative impacts to ancient woodland and veteran trees; the deeply troubling carbon impacts and nitrogen-based pollution; and the lack of transparency around the scheme.

9. Conclusion

National Highways must go further to avoid and minimise impacts on irreplaceable habitats. The losses are simply too great. The Trust considers that this road project, which is considered to have national significance, must be seeking to set the benchmark for future major infrastructure projects and development across the nation and demonstrating an example of best practice in developing a new road scheme while also ensuring the protection and enhancement of biodiversity. The project is far from achieving this.

1. Introduction

1.1. The Woodland Trust is the UK's largest woodland conservation charity and a leading voice in bringing to the attention of government, land owners and the general public the state of the UK's woods and trees. The Trust champions and delivers solutions to protect and revitalise our natural environment – the recreation of wooded landscapes on a national scale.

1.2. The Trust campaigns to ensure that laws governing environmental protection are enforced and that the government is held to account on environmental pledges. The Trust also campaigns with the support of local communities, to prevent any further destruction of ancient woods and veteran trees. We are an evidence-led organisation, using existing policy and our conservation and planning expertise to assess the impacts of development on ancient woodland and ancient and veteran trees.

1.3. To further protect the UK's natural environment, the Trust has built up an estate of its own managed woodland. The Trust owns and manages over 1,000 sites across the UK, covering over 30,000 hectares, a large proportion of which is irreplaceable ancient woodland. With a supporter base of half a million the Trust was the first, and remain the most significant contributor to woodland protection, restoration and creation in the UK. The Trust has expertise in protecting and managing this vital natural resource and irreplaceable part of our heritage.

2. Woodland Trust Position on the Lower Thames Crossing Scheme

2.1. The Woodland Trust works to protect the UK's ancient woods and ancient and veteran trees from direct loss and damage. As such, the Woodland Trust's charitable aims are adversely affected by the proposed Lower Thames Crossing scheme.

2.2. The Trust has held an objection to the Lower Thames Crossing scheme since 2016 on account of the potential for loss and deterioration of ancient woodlands, veteran trees, the Trust's own Ashenbank Wood site, and unacceptable greenhouse gas emissions associated with the scheme.

2.3. The Trust has engaged with National Highways' Lower Thames Crossing project team since 2016, and over the past seven years, has continued to object to the various iterations of the scheme that have been put forward. Through engagement with the project team and participation in several consultations, the Trust has made it clear that the impact of the scheme on the natural environment and climate is unacceptable.

2.4. While reductions of impact on irreplaceable habitat have been enabled through engagement and consultation with National Highways, the impacts of the scheme remain of great concern to the Trust. In the below response, we have provided further detail on our concerns regarding impact on irreplaceable habitats and climate, and provided a conclusion of our position of objection to this scheme.

3. Woodland Trust Campaign Actions and Petitions

3.1. In addition to the Trust objecting to the scheme since 2016, the Trust has also run several campaign actions to demonstrate the public's opinion of the scheme to National Highways and the widely-held concerns regarding the unacceptable impacts on irreplaceable habitat; among other concerns often specific to individual consultations. The Trust ran four campaign actions over the course of 2016 to 2022 (in 2016, 2018, 2020 and 2022) in response to the various public consultations launched by National Highways. National Highways' consultations concerned the various iterations of the scheme, each with their own specific issues.

3.2. However, there have always been three underlying issues for the Trust and its supporters. Through each consultation, the Trust and its supporters have raised concerns regarding the following: highly adverse impacts on irreplaceable habitats (ancient woodlands and ancient and veteran trees); hugely significant carbon emissions; and a lack of transparency that has plagued the project up to the Development Consent Order (DCO) submission.

3.3. Over the course of 2016-2022, 13,071 actions were taken by members of the public as part of four public campaign actions. Each online action generated an email to National Highways as a response to the respective consultation and constituted an objection to that particular consultation. Supporters were able to edit those emails to provide their own thoughts.

3.4. Over the course of 2022-23, the Trust then ran an online petition action for the public to show their support for the Trust's concerns and to show the Planning Inspectorate and Secretary of State for Transport that the Lower Thames Crossing scheme is unacceptable due to:

- Its negative impacts to ancient woodland and veteran trees
- The deeply troubling carbon impacts and nitrogen-based pollution
- The lack of transparency around the scheme

3.5. In total, 12,444 people signed this petition to demonstrate their support for the Trust's concerns and to show that they similarly shared these concerns. Many of the petition signatories are based in south-east England, though the petition reach has been extensive with people from all over the UK having taken the action to show opposition to the Lower Thames Crossing scheme.

3.6. Taking into account all of the objections to the scheme through the Trust's campaign actions and most recent petition, a total of 25,515 action have been taken by members of the UK public to demonstrate opposition to the scheme. The Trust considers that this depth of opposition must be recognised and taken into account by the Planning Inspectorate and Secretary of State for Transport when deciding on the outcome of this scheme.

4. Ancient Woodland

4.1. Natural England and Forestry Commission have jointly published 'standing advice' for ancient woodland, ancient trees and veteran trees[1], which is intended for use in planning matters and by decision-makers. Within the standing advice, ancient woodland is defined as: "*any area that's been wooded continuously since at least 1600 AD. It includes: ancient semi-natural woodland mainly made up of trees and shrubs native to the site, usually arising from natural regeneration; and plantations on ancient woodland sites - replanted with conifer or broadleaved trees that retain ancient woodland features, such as undisturbed soil, ground flora and fungi. They have equal protection in the National Planning Policy Framework (NPPF)*."

4.2. The standing advice goes on to further describe other forms of ancient woodland: "*Other distinct forms of ancient woodland are: wood pastures identified as ancient; and historic parkland, which is protected as a heritage asset in the NPPF. Many of these do not appear on the ancient woodland inventory (AWI) because their low tree density does not register as woodland on historic maps. You should consider wood pastures identified as ancient in the same way as other ancient woodland when making planning decisions. 'Wooded continuously' does not mean there's been continuous tree cover across the whole site. Not all trees in the woodland have to be old. Open ground, both temporary and permanent, is an important component of ancient woodlands.*"

4.3. In May 2022, the Government published an updated policy statement on ancient woodland, entitled '*Keepers of Time: ancient and native woodland and trees policy in England*'[2]. The Government's Keepers of Time policy reflects the importance of ancient woodland well, stating: "*Ancient woodlands, ancient wood pastures and parkland and ancient and veteran trees are irreplaceable habitats which must be protected. Their long-standing presence, species and form serve as a rich cultural record of past management practices*."

4.4. As a result of its great age, ancient woodland is characterised by a unique, complex and irreplaceable ecosystem of plants and animals, both above ground and in the soils. It is therefore impossible to recreate the ecosystem of an ancient woodland by planting new woodland, as widely recognised by experts and also within the aforementioned standing advice. England's ancient woodlands and trees represent a living cultural heritage, a natural equivalent to our great churches and castles. They are also one of our richest terrestrial wildlife habitats and are highly valued by people as places of tranquillity and inspiration.

4.5. Ancient woodland is an irreplaceable resource of great importance for its wildlife, soils, recreation, cultural value, history and the contribution it makes to our diverse landscapes. It is a scarce and threatened resource, covering only 2.5% of England's land area, and has a high level of protection in planning policy. Ancient woodland can have historical and archaeological significance on account of their long history of human association which often results in them becoming a source of inspiration for local culture and folklore.

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[1] https://www.gov.uk/guidance/ancient-woodland-ancient-trees-and-veteran-trees-advice-for-making-planning-decisions

[2] https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/1079036/Keepers_of_time_woodlands_and_trees_policy_England.pdf

4.6. Ancient woodlands provide homes for many of our rarest animals, such as the Bechstein's bat, which is one of the UK's rarest mammals and is listed as near threatened on the International Union for Conservation of Nature (IUCN) red list. Bechstein's bats roost in old trees all year round and as such are intimately associated with ancient woodland, as are numerous other important UK species such as saproxylic invertebrates (which are entirely dependent on the deadwood habitat associated with older trees). Planting new woodland as compensation to replace ancient woodland will not benefit species such as Bechstein's bat and saproxylic invertebrates for many decades.

4.7. A large proportion of ancient woodland is recorded on the Ancient Woodland Inventory (AWI) held by Natural England. The inventory is the most accurate database available for identifying ancient woodland. However, the inventory is considered provisional as information and evidence may become available that shows that woods not currently registered on the inventory are likely to be ancient or vice versa. A project is currently underway to update the inventory, and support the identification of small ancient woodland sites in particular (including those under 2ha in size that were likely not recorded in the Government's initial recording process).

5. Ancient and Veteran Trees

5.1. Ancient and veteran trees are also irreplaceable habitats and afforded a high level of protection in planning policy. Ancient and veteran trees possess unique features which provide a rich and diverse range of habitats, playing host to countless other species. In particular, many rare invertebrate, fungi and lichen species are dependent on the decaying wood provided by such trees[3]. They are also an essential part of our landscape and cultural heritage.

5.2. The National Planning Policy Framework (NPPF) defines an ancient or veteran tree as: "*A tree which, because of its age, size and condition, is of exceptional biodiversity, cultural or heritage value*". It does not provide a separate definition for ancient trees and veteran trees.

5.3. Natural England and Forestry Commission's standing advice for ancient woodland, ancient trees and veteran trees[4] does, however, provide separate definitions for ancient trees and veteran trees. Regarding ancient trees it states: "*An ancient tree is exceptionally valuable. Attributes can include its: great age, size, condition, biodiversity value as a result of significant wood decay and the habitat created from the ageing process, cultural and heritage value. Very few trees of any species become ancient.*" Regarding veteran trees it states: "*A veteran tree may not be very old, but it has significant decay features, such as branch death and hollowing. These features contribute to its exceptional biodiversity, cultural and heritage value. All ancient trees are veteran trees, but not all veteran trees are ancient. The age at which a tree becomes ancient or veteran will vary by species because each species ages at a different rate.*"

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[3] https://www.ancienttreeforum.org.uk/wp-content/uploads/2015/02/ancient-tree-guide-6-special-wildlife.pdf
[4] https://www.gov.uk/guidance/ancient-woodland-ancient-trees-and-veteran-trees-advice-for-making-planning-decisions

5.4. The Planning Practice Guidance (PPG) for Natural Environment[5] provides additional clarity on the status of ancient and veteran trees. It states: "*Ancient trees are trees in the ancient stage of their life. Veteran trees may not be very old but exhibit decay features such as branch death or hollowing. Trees become ancient or veteran because of their age, size or condition. Not all of these three characteristics are needed to make a tree ancient or veteran as the characteristics will vary from species to species.*"

5.5. As with ancient woodland, Government's '*Keepers of Time*' policy expresses the importance of ancient and veteran trees: "*Ancient and veteran trees are rich in biodiversity. They provide food, shelter and breeding sites to large numbers of species including birds, bats, fungi and insects, which are often restricted in their distribution. They can be found both inside and outside of woodlands.*"

5.6. Many ancient and veteran trees are recorded on the Ancient Tree Inventory (ATI). Established in 2003, the ATI is a tree-recording partnership between the Tree Register, the Ancient Tree Forum and the Woodland Trust. Ancient and veteran trees are recorded, measured, photographed and made accessible on an interactive map. The ATI is a living database almost entirely populated by volunteers. Although much progress has been made, the ATI is currently incomplete, and it is estimated that the vast majority of ancient and veteran trees within the UK remain unrecorded. This highlights the necessity of project-level mapping to assess for the presence of ancient and veteran trees.

6. Government Policy Related to Irreplaceable Habitats

6.1. In June 2022, the UK Government coordinated a statement supported by 46 other countries calling on the international community to "*halt and reverse biodiversity loss globally and adopt the '30by30' target to protect at least 30 per cent of land and ocean by 2030*". The UK government has committed to implementing this target in a domestic setting.

6.2. Strong environmental protections through planning policy, and policy relating to major infrastructure, are an essential means of acting on this commitment. In the absence of strong protections that are applied consistently across planning regimes, it will not be possible to turn this commitment into reality on the ground.

6.3. The aforementioned '*Keepers of Time*' policy sets out the Government's view that: "*Ancient woodlands, ancient wood pastures and parkland and ancient and veteran trees are irreplaceable habitats which must be protected" and that "Protecting and managing ancient trees and woodlands while expanding and connecting them with new native woodlands is vital.*"

6.4. This statement also reiterates a number of commitments to strengthen the level of protection afforded to ancient woodland in England, which were originally made in 2021, including to:

- "*undertake a review of the National Planning Policy Framework to make sure it is correctly implemented for ancient woodland and ancient and veteran trees. The Government will also strengthen guidance if needed and consult on stronger wording to better protect ancient woodlands,*

[5] https://www.gov.uk/guidance/natural-environment

- "*require local planning authorities to consult the Secretary of State for Levelling Up, Housing and Communities before granting planning permission for developments affecting ancient woodland,*
- "*update the Ancient Woodland Inventory to cover the whole of England. This will include mapping smaller ancient woodland sites of 0.25 hectares and introducing a new category for ancient wood pasture and parkland and infilled ancient wood pasture and parkland.*"

6.5. The National Planning Policy Framework (NPPF), the overarching planning policy document for England, states in paragraph 180(c) that: "*development resulting in the loss or deterioration of irreplaceable habitats (such as ancient woodland and ancient or veteran trees) should be refused, unless there are wholly exceptional reasons and a suitable compensation strategy exists*".

6.6. While we recognise that the NPPF is not intended to provide the decision-making framework for National Infrastructure Planning, as is the process for determining the outcome of the Lower Thames Crossing, it is important to ensure that a project of such magnitude and with such significant adverse impacts is not seen to undermine the current policy direction of strengthening protection for ancient woodland.

6.7. Government policy recognises that ancient woodland and veteran trees are irreplaceable and therefore that their loss or damage cannot simply be rectified through mitigation or compensation measures. Natural England and Forestry Commission's standing advice states the following regarding the irreplaceability of these habitats: "*Ancient woodland, ancient trees and veteran trees are irreplaceable. Therefore, you should not consider proposed compensation measures as part of your assessment of the merits of the development proposal.*"

6.8. The standing advice is clear that the protection afforded to ancient woodland includes ancient-semi natural woodland (ASNW), plantations on ancient woodland sites (PAWS), and ancient wood pasture. It also clarifies that the condition of an ancient woodland or tree should not be taken into account when assessing the merits of a development proposal: "*Where a proposal involves the loss or deterioration of ancient woodland or ancient or veteran trees you should not take account of the existing condition of the ancient woodland or ancient or veteran tree when you assess the merits of the development proposal. Its existing condition is not a reason to give permission for development. A woodland or tree in poor condition can be improved with good management.*"

6.9. The current version of the National Networks National Policy Statement (NNNPS), which applies to major road and rail projects brought forward through the nationally significant infrastructure project regime under the Planning Act 2008, states that: "*The Secretary of State should not grant development consent for any development that would result in the loss or deterioration of irreplaceable habitats including ancient woodland and the loss of aged or veteran trees found outside ancient woodland, unless the national need for and benefits of the development, in that location, clearly outweigh the loss*."

6.10. Since the publication of the NNNPS in 2014, the wording of the NPPF has been significantly strengthened in relation to ancient woodland. The NNNPS is currently under review, and the Trust is advocating for the updated NNNPS to be strengthened in order to close the widening gap between protection afforded to different types of

development. This would be consistent with the direction of travel outlined in the recent '*Keepers of Time*' policy statement (see paragraphs 6.3 and 6.4 above).

7. Impact of the Proposed Scheme on Ancient Woodland

7.1. Development can impact on ancient woodland in a number of ways, with impacts able to occur within both the operational and construction phases of any given scheme. The impacts that ancient woodland may be subject to are varied though can broadly be categorised into two main types: direct effects and indirect effects.

7.2. Natural England and Forestry Commission's standing advice details the typical direct effects that may occur from development as follows: "*Direct effects of development can cause the loss or deterioration of ancient woodland or ancient and veteran trees by:*

- *damaging or destroying all or part of them (including their soils, ground flora or fungi)*
- *damaging roots and understorey (all the vegetation under the taller trees)*
- *damaging or compacting soil*
- *damaging functional habitat connections, such as open habitats between the trees in wood pasture and parkland*
- *increasing levels of air and light pollution, noise and vibration*
- *changing the water table or drainage*
- *damaging archaeological features or heritage assets*
- *changing the woodland ecosystem by removing the woodland edge or thinning trees - causing greater wind damage and soil loss*"

7.3. The standing advice then goes on to detail the indirect effects arising from development: "*Indirect effects of development can also cause the loss or deterioration of ancient woodland, ancient and veteran trees by:*

- *breaking up or destroying working connections between woodlands, or ancient trees or veteran trees - affecting protected species, such as bats or wood-decay insects*
- *reducing the amount of semi-natural habitats next to ancient woodland that provide important dispersal and feeding habitat for woodland species*
- *reducing the resilience of the woodland or trees and making them more vulnerable to change*
- *increasing the amount of dust, light, water, air and soil pollution*
- *increasing disturbance to wildlife, such as noise from additional people and traffic*
- *increasing damage to habitat, for example trampling of plants and erosion of soil by people accessing the woodland or tree root protection areas*
- *increasing damaging activities like fly-tipping and the impact of domestic pets*
- *increasing the risk of damage to people and property by falling branches or trees requiring tree management that could cause habitat deterioration*
- *changing the landscape character of the area*"

7.4. Not all of the direct and indirect effects detailed above would necessarily apply to any one development, however, it is necessary that these effects and their adverse impact on ancient woodland are scoped into the environmental assessment of the Lower Thames Crossing scheme to ensure all potential adverse impacts have been accounted for.

7.5. National Highways has provided detail of the impacts of the scheme on ancient woodland, namely outlined within the document '*Environmental Statement, Chapter 8 – Terrestrial Biodiversity*'. It is clear that the works proposed as part of this scheme will have a significant impact on a number of areas of ancient woodland. While National Highways has provided exact details of losses to ancient woodland in places, overall it is difficult for the Trust to assess precisely what the impacts might be and the exact number of woods that would be affected by the scheme. Due to the large amount of documentation provided and the limited resource of staff, the Trust may not have been able to pick up on every single relevant matter in this representation. However, the Trust will endeavour to work with the Planning Inspectorate and National Highways to address impacts to all woods affected.

7.6. Within Chapter 8 of the Environmental Statement (ES), Table 8.31 provides detail of the habitat losses associated with the project to the south of the River Thames. National Highways has detailed that the loss of ancient woodland within this section of the project would amount to 5.35ha. Within the same document, Table 8.35 details the habitat losses associated with the project to the north of the River Thames. National Highways has detailed that the loss of ancient woodland within this section of the project would amount to 1.57ha of "*nationally important*" ancient woodland. It is not clear why National Highways has provided a slight change in wording – adding 'nationally important' – when referring to the losses of ancient woodland for different sections of the scheme. This is particularly confusing when National Highways has referred to all ancient woodland as being nationally important earlier in the same document.

7.7. The combined losses detailed in Tables 8.31 and 8.35 would amount to a total loss of 6.92ha of ancient woodland. Unfortunately, statements made further on in the document create confusion regarding the total loss of ancient woodland. Further on in the document, in the 'Summary' section (section 8.9), paragraph 8.9.3 states that there would be a loss of 7.62ha of ancient woodland. Once again, there appears to be an inconsistency here. It is not clear why there are different totals of ancient woodland loss provided within the Environmental Statement. Clarity is required from National Highways on this matter.

7.8. Regardless of the total amount of ancient woodland loss, the Trust is clear that both figures amount to an unacceptable loss of ancient woodland.

7.9. The Trust considers it important to consider how National Highways has sought to understand the effects of both construction and operation of the scheme on woods and their wildlife. Within Chapter 8 of the ES, National Highways has provided detail of the method of assessment for how construction phase effects may impact on habitats, stating in paragraph 8.3.36: "*The assessment of construction phase effects includes consideration of potential effects arising from the following:*

- *Construction disturbance, air quality, lighting, vibration, noise or hydrological impacts*
- *Loss of functionally linked land associated with designated sites*
- *Direct loss of wildlife habitat through land-take*
- *Severance, by dividing habitats or wildlife corridors*
- *Direct mortality through construction activities*
- *Disruption of local watercourses*
- *Disturbance to sites, habitats and species resulting from increased visitor pressure and recreational activities*"

7.10. National Highways then goes on to detail the method of assessment for how operational phase activities may impact on habitats, stating in paragraph 8.3.39: "*The assessment of operational phase effects includes consideration of potential effects arising from the following:*

- *Changes in air quality on designated sites*
- *Disturbance or hydrological effects on designated sites, functionally linked land or qualifying features of designated sites*
- *Direct mortality through traffic collisions*
- *Polluted road runoff affecting the aquatic environment*
- *Impacts from road lighting*
- *Impacts on verge vegetation from polluted spray from the road*
- *Noise disturbance*
- *Disturbance to sites, habitats and species resulting from increased visitor pressure and recreational activities*"

7.11. In the aforementioned 'Summary' section of the ES, National Highways has summarised how ancient woods would be impacted in the construction phase and operational phase. While stating that 7.62ha of ancient woodland would be lost as a result of construction, National Highways also details that 22 ancient woodlands would be subject to significant effects during the operational phase of the project, clarifying that such effects would occur as a result of increased nitrogen deposition and the resulting degradation of habitat condition. The Trust's specific comments regarding the impacts of nitrogen pollution are addressed later in Section 12 (Nitrogen Pollution Impacts of the Proposed Scheme) of this representation.

7.12. The Trust fundamentally disagrees with the assertion that significant effects on these ancient woodland sites would only occur as a result of increased nitrogen deposition during the operational phase of the project. The scale and size of the proposed works and proximity to many of ancient woodland sites will undoubtedly elevate noise levels and illumination of woodland sites, increase dust pollution, fragment habitats and the wider natural landscape, and alter the hydrological conditions of habitats. Such impacts cannot be considered individually and the cumulative impact must be fully assessed. These impacts will also have a greater impact on specialist woodland species that are often vulnerable to change and slow to adapt to newly imposed conditions, instead allowing for more generalist species to dominate and resulting in losses of biodiversity.

7.13. The Trust is particularly concerned regarding the impacts on Shorne and Ashenbank Woods SSSI, Shorne / Brewers Wood SSSI, and Claylane Wood. There are of course many other ancient woodland sites across the scheme that would be subject to serious direct impacts and indirect impacts, all with varying levels of severity, though those closer to the proposed scheme will inevitably be worse affected.

7.14. Claylane Wood would be one of the most significantly ancient woods by the entire scheme, with almost half of the ancient woodland area proposed to be lost, 4.24ha as detailed by National Highways. National Highways has stated that habitat degradation of the remaining ancient woodland could be avoided through good practice mitigation, however the severing of this ancient woodland from other nearby semi-natural habitats is so severe that adverse impacts on Claylane Wood are unavoidable and inevitable under the current proposals.

7.15. Shorne and Ashenbank Woods SSSI and Shorne / Brewers Wood SSSI will also be subject to a significant level of habitat loss, with 0.95ha of ancient woodland to be lost to the scheme from these sites, as well as several hectares of other important habitat. The loss of such habitat for the construction of green bridges is laughable and falls way short of appropriate mitigation for loss of SSSI-designated habitat.

7.16. The assertion that good practice mitigation, translocation of protected species and creation of new receptor sites (effectively compensation planting) does not provide the Trust with reassurance that ancient woodland sites affected directly or indirectly – or both – would be appropriately protected from harm and that habitat degradation would not occur.

7.17. Another mitigation measure of concern is the proposed use of 'green' bridges to alleviate the adverse impacts of severe fragmentation resulting from the scheme's construction. National Highways' concept of green bridges for this project is entirely flawed. While some bridges may have a mixed-use with human use also incorporated, i.e. include footpaths, amenity, farmer access, etc., it is far from good practice to incorporate two-lane roads into bridges that should primarily be used as wildlife corridors. Such use conflicts with the purpose of a green bridge to connect up a natural landscape fragmented by a large road scheme. The Trust would question how well-used mixed use bridges would be by the wildlife species that require them most. The Trust would also question whether the bridges are being implemented first and foremostly for the purpose of connecting the landscape and creating new wildlife corridors. This does not seem to be the case. Considering the scale of impact, disconnection of habitats and severance of the natural landscape, the effectiveness of these mixed use bridges for wildlife is highly questionable.

7.18. National Highways must go further to avoid and minimise impacts on ancient woodland. The Trust considers that this road project, which is considered to have national significance, must be seeking to set the benchmark for future major infrastructure projects and development across the nation. It should be setting an example of best practice in developing a new road scheme while also ensuring the protection and enhancement of biodiversity. At present, the project will not achieve this. The significant impacts on ancient woodland must be questioned to determine whether there are further design refinements that can be implemented. The consultation process did not allow for the public or other non-statutory ecological stakeholders to properly engage in such matters.

8. Impact of the Proposed Scheme on Veteran Trees

8.1. The works proposed as part of this scheme will have significant impacts on veteran trees in the vicinity of the scheme. The impact of development on ancient and veteran trees is also captured within the wording provided above and taken from Natural England and Forestry Commission's standing advice. For a scheme such as the Lower Thames Crossing it's likely that impacts will mainly take the form of direct loss, damage to roots, impacts on the tree's rooting environment and/or impacts on species associated with such trees (i.e. bats, birds, invertebrates, bryophytes, (e.g. mosses), epiphytes (e.g. lichens), etc).

8.2. Details of ancient and veteran trees are provided in the Arboricultural Impact Assessment (AIA) contained within Appendix 7.12 of the Environment Statement. Within this assessment, National Highways identified 78 ancient and veteran trees within the

study area and five within the order limits. In total, National Highways has identified that six 'potential' veteran trees would be removed to accommodate the scheme: T41, T133, T145, T362, T363 and T570. It is not clear why such trees are considered to be 'potential' veterans rather than plainly considered to be 'true' veteran specimens. Clarification on what is a potential veteran tree is required.

8.3. Further to the direct loss of these six veteran trees, it is apparent that veteran trees and 'potential' veteran trees have been identified by National Highways would face indirect impact and subsequent deterioration as a result of proposed construction activity within their buffer zones. The requirements for buffer zones for ancient and veteran trees are outlined in Natural England and Forestry Commission's standing advice, which states: "*For ancient or veteran trees (including those on the woodland boundary), the buffer zone should be at least 15 times larger than the diameter of the tree. The buffer zone should be 5 metres from the edge of the tree's canopy if that area is larger than 15 times the tree's diameter. This will create a minimum root protection area.*" It further states that "*You should not approve development proposals, including gardens, within a buffer zone*."

8.4. Buffer zones for trees are also referred to in the BSI Standards Publication '*BS5837:2012 – Trees in relation to design, demolition and construction – Recommendations*'. This British Standard document is intended to be used as guidance and recommendations for planning construction activity around trees. This document states that "*For single stem trees, the RPA (see 3.7) should be calculated as an area equivalent to a circle with a radius 12 times the stem diameter. For trees with more than one stem, one of the two calculation methods below should be used. In all cases, the stem diameter(s) should be measured in accordance with Annex C, and the RPA should be determined from Annex D. The calculated RPA for each tree should be capped to 707 m^2.*"

8.5. The BS5837 guidelines do not contain wording related to buffer zones for veteran trees, as such guidance has been developed by Natural England and Forestry Commission since the publication of this guidance in 2012. It does, however, refer to protections required for veteran trees, stating: "*Particular care is needed regarding the retention of large, mature, over-mature or veteran trees which become enclosed within the new development. Where such trees are retained, adequate space should be allowed for their long-term physical retention and future maintenance*" and "*it is recommended that no construction, including the installation of new hard surfacing, occurs within the RPA [of veteran trees].*"

8.6. We acknowledge that National Highways has sought to ensure that veteran trees are afforded appropriate buffer zones in line with the aforementioned standing advice, recognising that the BS5837 guidelines do not represent the most up to date guidance on veteran tree protections.

8.7. However, as referred to in paragraph 7.2. above, National Highways has identified a number of veteran trees in which construction activity is proposed within their buffer zone, including T630, T609, T29, T555, T557 and T558. While the AIA considers the impacts of construction activity within the buffer zones of ancient and veteran trees, it is not clear whether National Highways has appropriately considered the full scale of impact of its scheme on veteran trees. For example, might re-routing of footpaths, cycle paths and utilities divert visitor pressure towards other veteran trees both within and outside of the order limits of the scheme.

8.8. In total, the scheme is proposed to result in the loss or deterioration of 12 veteran trees. Six veteran trees will be subject direct loss and a further six veteran trees will be subject to deterioration. We consider the loss of these irreplaceable habitats to be entirely unacceptable.

8.9. While National Highways has provided details of identified ancient and veteran trees and the manner in which they will be impacted within the Arboricultural Impact Assessment, it is not clear what efforts have been made to reduce impacts on such trees through alterations to the scheme's design. We request that National Highways is required to produce an ancient and veteran tree strategy, setting out the full impacts of the scheme on ancient and veteran trees, as well as the measures that will be taken to reduce losses and deterioration through further detailed design. Such a strategy should also contain compensations proposals for any truly unavoidable losses and other impacts.

8.10. Finally, while it is important to protect the vitality of ancient and veteran trees by avoiding their loss and providing suitable buffer zones, thought must be given to the species associated with them also. Utilised by an abundance of different wildlife species, many of which are specialist species relying on ancient and veteran trees for their survival, it is vitally important that the ability of such trees to host these species is not adversely affected. For example, greater need for management of such trees where the scheme creates greater proximity to people and vehicles can affect deadwood retention, and increased dust and nitrogen pollution can affect their ability to host important bryophytes and epiphytes. It is important that such considerations have been made and any indications as to where National Highways has made such considerations within the documentation provided would be appreciated.

9. Impact of the Proposed Scheme on Woodland Trust Land

9.1. The Trust owns a woodland site, Ashenbank Wood, that falls partially within the order limits of the Lower Thames Crossing scheme. Ashenbank Wood (grid reference: TQ675692) is a 29.95 hectare site located close to the village of Cobham and directly south of the A2 / M2 road and Channel Tunnel rail link. Around 2ha of the site was compulsorily purchased along the northern boundary in 1999 / 2000 to construct the Channel Tunnel rail link, however, in 2006, 2.79ha (6.9 acres) was acquired back from Union Railways and this now forms the north west corner of this wood.

9.2. Ashenbank is set within the Kent Downs Area of Outstanding Natural Beauty (AONB) and is a complex of ancient woodland, wood pasture and parkland sites within the greater Cobham landscape, all once part of the former Cobham Hall Estate. As such, Ashenbank Wood is part of a network of natural sites in the locality: Shorne Woods Country Park (managed by Kent County Council), Cobham Park (owned by Cobham Hall Independent School), Cobham Wood and Mausoleum (managed by The National Trust), Ranscombe Farm Reserve (managed by Plantlife), and Jeskyns Community Woodland (managed by the Forestry Commission). These sites offer public access and are linked by the Darnley Trail, a 10km (6.2mile) multi-user circular route named after the Earls of Darnley who previously owned Cobham Hall Estate.

9.3. The ancient semi natural woodland component at Ashenbank covers around 40% of the site, and contains predominantly oak, ash, hornbeam and sweet chestnut, historically

managed by coppicing. There are also a significant number of open grown oak, hornbeam and sweet chestnut veteran trees.

9.4. The former wood pasture/ old parkland component covers the remaining 60% of the site and is comprised of birch, oak and sycamore alongside majestic veteran sweet chestnut trees established in the late 18th century as part of Humphrey Repton's landscape design for Cobham Hall Estate. Approximately 7ha of the historic parkland is still maintained as a series of open glades, managed through cattle grazing and manual cutting programme.

9.5. Ashenbank Wood was designated as part of the Shorne and Ashenbank Site of Special Scientific Interest (SSSI) in 1968 on account of its rich and irreplaceable mixture of ecosystems and habitats, including a significant deadwood assemblage and associated specialist invertebrates, veteran trees and open ground areas. The whole wood is also subject to a Tree Preservation Order (TPO).

9.6. Ashenbank Wood also has an interesting and varied cultural history, with evidence of human activity dating as far back as the prehistoric. Both a Bronze Age round barrow (a Scheduled Ancient Monument) and a shallow medieval (or potentially older) wood bank are located on the site. More recently, Ashenbank was used as an accommodation base camp during the Second World War for RAF personnel stationed at Gravesend airfield; the remains of four bunkers can still be found at Ashenbank, alongside some further examples that are still intact in the surrounding area.

9.7. Ashenbank Wood has been under threat of some form of direct and indirect impact from the scheme since the Trust's initial involvement in the scheme in 2016. As National Highways has progressed its scheme the impacts on Ashenbank Wood have evolved, with different consultations over the years proposing a varying degree of impact on this site. The Trust is highly concerned about the impact that the scheme may have on our site in its present form.

9.8. The Trust is namely concerned by the proposed diversion of National Cycle Route 177 (NCR177) through Ashenbank Wood and the subsequent impact on both important ecological features and historical /cultural features within the site. Furthermore, The Trust is concerned by the impact that the proposed diversion of NCR177 through the site will have on the Trust's ability to manage the site appropriately.

9.9. Chapter 8 of the ES does make mention of NCR177 being located through Ashenbank Wood, however, it does not appear that the impact of this diversion on Ashenbank Wood has been fully considered within the document. The diversion of NCR177 is also mentioned within the document '*7.4 Project Design Report – Part E: design for Walkers, Cyclists and Horse Riders*', stating: "*the existing track along the northern edge of Ashenbank Woods will have its surface made suitable for cyclists through to the connection with the southern side of the existing green bridge over HS1. This section through Woodland Trust land is part of the Darnley Trail and includes permissive use for walkers, cyclists and horse riders, the designation of this track will remain unchanged. Once the new roadside alignment of NCR177 is available improvements to the surface will be removed at the request of the landowner*."

9.10. The section of Ashenbank Wood that the NCR177 diversion will follow constitutes an unsurfaced path open to visitors. While the area in which the new cycle path will be

routed through does not constitute ancient woodland, it does contained a number of over-mature and veteran trees of great importance to Ashenbank Wood's well-documented assemblage of invertebrates. Strapped to some of these existing trees are the trunks of 12 trees previously felled as part of the Channel Tunnel Rail Link works in 1999 / 2000, providing vertical deadwood habitats. It is not clear how impacts on these important trees have been considered as part of the NCR177 diversion proposals.

9.11. In addition to the impacts on important trees in this part of the site and the other ecological features of this long-established woodland, it is apparent that National Highways has not considered the interesting archaeological / historical features through this part of Ashenbank Wood. Along the route of the proposed new cycle path are the remains of a Second World War personnel encampment. It is not clear how these features would be protected from the construction of a new cycle path in this location, particularly one proposed to be suitable for cyclists, walkers and horse-riders.

9.12. While the proposed cycle path itself would impact on important features of Ashenbank Wood directly, the Trust also holds concerns relating to the indirect impact that the new path would have as a result of increases in recreational pressure on the site. It is not clear how visitor traffic will be managed through Ashenbank Wood with the NCR177 diversion in place and the potential increase in visitors that it may likely attract. Ashenbank Wood is already subject to considerable footfall and has issues in wetter months on its main tracks. The degradation and typical widening of such tracks where visitors look to avoid muddy sections will affect woodland vegetation and visitor enjoyment. It does not appear that the impact of increased visitor pressure has been appropriately considered by National Highways.

9.13. The Trust considers that the engagement from National Highways on this matter has not been adequate. While National Highways' responsible team for such matters has engaged with the Trust previously, the National Highways staff did not appear to have factored in many of the above issues associated with the proposed diversion of NCR177. Instead, Trust staff have simply been told that specific design of the cycle path will be considered at a later stage in the planning process, with no demonstration of the mitigation hierarchy being applied for either the direct or indirect effects of the scheme.

9.14. Finally, also of concern for the Trust is the impact of increased nitrogen emissions on the habitats contained within Ashenbank Wood. Further details of our concerns regarding nitrogen pollution associated with the scheme are contained within Section 12 of this representation.

10. Impacts on Other Native Woods and Hedgerows

10.1. While the Trust is primarily concerned with the impact of the scheme on ancient woodlands and ancient and veteran trees, impacts on other native woods, trees and hedgerows are an important consideration also. Government's '*Keepers of Time*' policy outlines the importance of native woods and trees being protected alongside ancient woods and ancient and veteran trees.

10.2. The section of the scheme to the south of the River Thames is proposed to result in the loss of 7.67ha of semi-natural broadleaved woodland, 34.87ha of plantation woodland and 4.23ha of scrub habitats. The section of the scheme to the north of the

River Thames is proposed to result in the loss of 8.75ha of semi-natural broadleaved and mixed woodland, 64.8ha of plantation woodland and 24.72ha of scrub habitat.

10.3. For the section of the scheme south of the River Thames, it is proposed that compensation for these losses of non-ancient woodland and scrub would total 138.45ha of new woodland planting and 11.23ha of scrub planting. For the section of the scheme to the north of the River Thames, it is proposed that compensation for the loss of non-ancient woodland and scrub would total 173.75ha of new woodland planting and 46.52ha of scrub planting. The Trust would appreciate clarity on whether Defra's biodiversity metrics have been applied in determining the level of compensation required for these losses.

10.4. Regarding the loss of hedgerow habitat, the scheme is also expected to result in the loss of 4.67km of hedgerow habitat to the south of the River Thames and 38.19km of hedgerow habitat to the north of the River Thames. This is a total loss of 42.86km of hedgerow habitat.

10.5. These losses of non-ancient woodland, scrub, and hedgerows represents a hugely significant loss of important habitat to the local area, much of which is considered to be of county or local importance, or considered priority habitat. It is clear that further steps should be taken through design to reduce anticipated loss wherever possible. This also represents a substantial loss of connectivity across the landscape that would severely impact many areas of ancient woodland, veteran trees and other native wooded habitats.

10.6. While compensation measures have been proposed to support ecological connectivity, the Trust does not consider that the impact of fragmentation from this scheme can be mitigated or compensated for – the severity is simply too great. National Highways must undertake extensive landscape connectivity works to in any way partially compensate for these impacts.

11. Compensation

11.1. Where areas of irreplaceable habitat are proposed to be lost, appropriate compensation for such losses impact must be provided. Using the mitigation hierarchy of avoid, mitigate and compensate, any loss of irreplaceable ancient woodland that is considered truly unavoidable cannot be mitigated, so must become the subject of compensatory action. Therefore, the Trust is eager to ensure that every possible step is taken to minimise the loss of irreplaceable ancient woodland and then rather than resort to compensation for its loss.

11.2. Table 8.31 of the '*Environmental Statement, Chapter 8 – Terrestrial Biodiversity*' states that 5.35ha of ancient woodland would be lost to the south of the River Thames. As compensation for this loss, 48.75ha of 'Ancient Woodland Compensation Planting' is proposed. This amounts to a compensation ratio of approximately 9.1:1 new planting to ancient woodland lost.

11.3. Table 8.35 within the same document details the habitat losses associated with the scheme to the north of the River Thames. This table states that 1.57ha of ancient woodland would be lost to this section of the scheme. As compensation for this loss,

32ha of 'Ancient woodland mitigation planting' is proposed. This amounts to a compensation ratio of approximately 20.4:1 new planting to ancient woodland lost.

11.4. It is not clear why two different terms ('Ancient Woodland Compensation Planting' and 'Ancient woodland mitigation planting') have been used to describe the new semi-natural habitat provided in compensation. The terms mitigation and compensation have different meanings in planning terms and therefore it is important to separate out such measures. Natural England and Forestry Commission's standing advice is clear that mitigation refers to mitigating against damage and reducing impact, while compensation is a means of particularly compensating for loss or damage of irreplaceable habitats (and to be used as a last resort).

11.5. In total, compensation planting for the loss of 6.92ha of ancient woodland from this scheme appears to be 80.75ha. This places the compensation ratio of new planting to ancient woodland loss for the entire scheme at approximately 11.7:1. It is not apparent why ancient woodland lost to the north of the River Thames will be compensated for at a higher ratio than ancient woodland lost to the south. Clarification from National Highways on the justification for the proposed compensation ratios for ancient woodland loss would be appreciated.

11.6. Natural England's 2016 '*Review of the High Speed 2 No Net Loss in Biodiversity Metric*' report[6] (as commissioned by the House of Commons HS2 Phase 1 Bill Committee) recommends that "*where ancient woodland is to be replaced by new woods, an area based ratio of 30:1 is appropriate*." While we appreciate that such a statement was made specifically in relation to the HS2 project, the project for which such compensation would occur should be considered irrelevant. Natural England has clearly taken a position previously on the need for a compensation ratio of 30:1 for ancient woodland loss on another large infrastructure scheme. It therefore stands to reason that Natural England should be seeking a similar ratio for this project.

11.7. In light of the above, the Trust seeks a commitment that National Highways will increase the overall extent of compensation measures proposed beyond those currently proposed and to a ratio of 30:1. We consider that any additional compensation proposals should also include enhancement of existing ancient semi-natural woodland. As with ancient and veteran trees, we would request that National Highways produces an Ancient Woodland Strategy to fully detail the impacts of the scheme on ancient woods and the mitigation and compensation measures that would be implemented for these habitats.

11.8. Regarding the process of ancient woodland compensation planting it is important to note that it is not possible to fully recreate ancient woodland habitat. It is not clear from the documentation we have examined whether National Highways is intending to use the often proposed method of translocating ancient woodland soils from a lost ancient woodland site to a new planting site. Clarification on this would be greatly appreciated.

11.9. Furthermore, the ancient woodland compensation proposals do not appear to include any measures to enhance existing ancient semi-natural woodland. We would

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6 https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/565691/review-of-hs2-no-net-loss-metric.pdf

appreciate clarification on whether this would be the case. To clarify the Trust's position, enhancement of ancient semi natural woodland should be considered a valuable component of compensation strategies. Enhancement has the added benefit of being delivered through agreements with landowners and therefore being a less coercive form of compensation than measures which require compulsory purchase.

11.10. All planting should be carried out at a landscape scale in accordance with the 'Lawton Principles'[7], an approach which champions the role that new woodland must play in supporting biodiversity, reversing fragmentation and building better habitat networks to create landscapes that are more resilient to change.

11.11. Furthermore, the compensation proposals should be suitably secured through an appropriate legally binding agreement or covenant to ensure they deliver benefits over the long-term and cannot easily be lost to other new development.

12. Nitrogen Pollution Impacts of the Proposed Scheme

12.1. The Lower Thames Crossing scheme is proposed to have significant impacts on the natural environment through increased nitrogen pollution, as well as increased climate contributions through its associated greenhouse gas emissions.

12.2. Nitrogen pollution is a serious threat to the natural environment and considered one of the greatest threats to ancient woodland in the UK. While the evidence regarding impacts of nitrogen pollution on veteran trees is somewhat limited, it is well understood how nitrogen pollution can impact on species associated with such trees, e.g. lichens.

12.3. Ancient woodlands across the UK are being adversely impacted by increasing concentrations of airborne ammonia and deposition of nitrogen. New developments leading to increased nitrogen deposition must not allow for further degradation of ancient woodland sites. Road schemes, such as the Lower Thames Crossing, often result in increased emissions of nitrogen oxides (NO_x).

12.4. Increased nitrogen levels in ancient woodland can lead to a greater abundance of nitrogen-loving species which out-compete and impact on many characteristic ancient woodland plants and mosses, thereby degrading the ecological integrity of ancient woodland sites. This has a knock-on impact on all animal species associated with the nitrogen sensitive components, e.g. larval food plants of woodland butterflies, moths and other invertebrates. Further to this, many woodland fungi and lichens are sensitive to nitrogen deposition. There are particular concerns about impacts of nitrogen on ectomycorrhizal species (those associated with tree roots) and the subsequent impact on tree health. With lichens, many species and communities evolved and developed at low levels of atmospheric nitrogen and are sensitive to change. Where lichens on trees are affected, so too are the invertebrates that rely on them as a microhabitat; there are also knock-on impacts on wider ecosystems services that lichens contribute to, such as carbon cycling and water retention[8].

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[7] https://www.gov.uk/government/news/making-space-for-nature-a-review-of-englands-wildlife-sites-published-today

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

12.5. The process by which the impacts of pollutants on ecosystems is determined is based on the use of critical levels and critical loads. While critical level relates to gaseous concentration in air (typically ammonia - NH_3), critical load is the most relevant to the Lower Thames Crossing project as it relates to the quantity of nitrogen deposited from the air to the ground and represents an estimate of the level below which significant harmful effects do not occur. The process contribution (PC) is the nitrogen deposited to the ground as a result of a development. The critical load for woodland habitats in the UK has been defined within a range of 5-20kg N/ha/yr (kilograms of nitrogen per hectare per year), dependent on woodland vegetation types. Where such information is unavailable then the default value used is 10kg N/ha/yr. However, this level is thought to not be robust enough even, with key components of woodland ecosystems often deteriorating where the critical load is higher than 5-6kg N/ha/yr.

12.6. The PC of a new development should be expressed as a percentage of the critical load (or critical level) for a site. For example, if the emissions of a development are modelled to result in 0.1kg N/ha/yr then that would equate to a PC of 1% to a critical load of 10kg N/ha/yr. Where the PC is modelled to be below 1% then it is unlikely that emissions at this level will have a significant contribution to detrimental air pollution impacts and resulting habitat degradation.

12.7. The Trust considers that all new development should be expected to account for impacts to ancient woodland and use a 1% PC threshold. The Environment Agency currently sets a 100% PC threshold for ancient woodland habitats. Unfortunately, this PC threshold accepts the fact that an individual development will result in the exceedance of critical levels and loads, and that ancient woodland will deteriorate as a consequence. This is out of alignment with current policy as the NPPF requires that there is **no** deterioration of irreplaceable habitats.

12.8. As such, the Trust considers that wherever the PC threshold of nitrogen deposition at ancient woodland sites exceeds 1% of the critical load for ancient woodland, then the impacts on those sites will be significant as they would be subject to adverse impact and habitat deterioration.

12.9. National Highways has determined that there would be 22 ancient woodland sites that would be significantly affected by nitrogen pollution in the operational phase of the project. The Trust would question what threshold National Highways applied to determine significance of impact and whether the application of a 1% PC threshold would show that additional areas of ancient woodland are facing significant adverse impact. The Trust is also concerned that National Highways is struggling to mitigate nitrogen emissions from the scheme and is instead opting to simply utilise compensation planting areas to deal with the severe nitrogen pollution associated with the scheme. This, of course, would be unacceptable and does not seem to align with the mitigation hierarchy.

13. Climate Impacts of the Proposed Scheme

13.1. Climate change is the biggest long-term threat faced by our natural environment and ecosystems, and thus our own life support systems. The Trust supports an increase in UK woodland cover from its current 13% of land area to 19% by 2050 to tackle this country's biodiversity and climate crises. The value of woodland in sequestering carbon emissions has been recognised by Government, yet further erosion of ancient and mature

woodland by the Lower Thames Crossing project would further undermine the ability to meet its net zero obligations. Indeed, in England, ancient and long-established woodlands have been shown to hold 36% more carbon per hectare than all other woodland types.

13.2. A number of important developments in UK climate change policy have occurred since the Lower Thames Crossing project was first proposed. Meeting the recently adopted target of net zero carbon by 2050 represents a major policy challenge of which transport is a central component. The UK Climate Change Committee (CCC) reports that transport emissions increased by 6% between 2013 and 2019 and were 4% higher than in 1990. Though the CCC note that transport emissions fell dramatically in 2020 due to lockdown restrictions, travel rebounded again in 2021 as restrictions lifted. Road transport accounts for 91% of the UK's domestic surface transport emissions. Although vehicles have become more fuel efficient, this has been offset by increasing travel demand.

13.3. To overcome such trends, the CCC Net Zero report highlighted the need for new policy frameworks to be developed. The Department for Transport acted on this recommendation, publishing a Green Paper '*Decarbonising transport - setting the challenge*' in March 2020. This includes recognition that "*We will use our cars less and be able to rely on a convenient, cost-effective and coherent public transport network*." A successful strategy to reduce transport's carbon emissions must include measures to manage road travel demand, not accommodate its growth. We maintain our challenge that the Lower Thames Crossing scheme is inconsistent with this approach.

13.4. Any decision regarding the Lower Thames Crossing must be consistent with the UK's international commitments regarding carbon emissions. The court decision concerning plans for a third runway at Heathrow highlighted the need for consistency in the Government's legal objectives regarding emissions cuts and major infrastructure development proposals which are predicated on increasing transport movements. While the court decision was recently overturned, the Government must lead the way in cutting emissions if the UK is to remain credible at climate negotiations.

13.5. Within the document '6.1 Environmental Statement Chapter 15 – Climate', National Highways details the anticipated carbon emissions associated with the project, stating in paragraph 15.9.9 of the 'Summary' section: "*The total net GHG [greenhouse gas] emissions over the appraisal period of the Project (construction stage plus 60-year operational phase from opening) are calculated to be approximately 6.596 million tCO_2e [tonnes of carbon dioxide equivalent].*"

13.6. This proposed increase in greenhouse gas emissions is entirely unacceptable and is out of step with Government ambitions and commitments towards net zero targets. While National Highways may claim that reductions can be made to greenhouse gas emissions, the Trust lacks confidence that such serious reductions could ever be made based on the information available.

13.7. The Lower Thames Crossing project is a relic of the Government's outdated 'predict and provide' model of transport planning based on predicting future demand to provide capacity. The latest consultations on road transport, such as the Government's '*Draft National Policy Statement for National Networks*' signalled a move away from this model

to a system where new development is a last resort. This project does not align with any of the Government's latest commitments on future road transport or achieving net zero.

14. Conclusion

14.1. As irreplaceable habitats, ancient woods and veteran trees are the natural equivalent of our great churches and castles. They are some of our richest terrestrial wildlife habitats and are highly valued by people as places of tranquillity and inspiration. Once gone, neither ancient woodland or veteran trees can be recreated.

14.2. The current impact of the Lower Thames Crossing scheme on ancient woods and veteran trees is unacceptably high. A huge number of ancient woods – the Trust is still not clear just how many – will be subjected to varying degrees of loss and deterioration and 12 veteran trees will be subject to either direct loss of deterioration. This includes one of the Trust's own sites, Ashenbank Wood SSSI. We consider that any development resulting in such loss or deterioration to these irreplaceable habitats is unacceptable and must be reconsidered.

14.3. As stated within Sections 2 and 3 of this representation, thousands of people across the UK have taken action and submitted objections to the consultations, as well as signed the Trust's petition against the scheme's impact. Over the course of 2016-2023, 25,515 actions have been taken to object to the scheme, with the Trust's most recent online petition action being signed by 12,444 people, and in doing so calling on the Planning Inspectorate and Secretary of State for Transport to recognise that the Lower Thames Crossing scheme is unacceptable due to: negative impacts to ancient woodland and veteran trees; the deeply troubling carbon impacts and nitrogen-based pollution; and the lack of transparency around the scheme.

14.4. While the impact of the Lower Thames Crossing scheme on the natural environment is massively harmful, degrading habitats and affecting wildlife populations, the contribution of the scheme to climate change through greenhouse gas emissions is woefully unacceptable. It is abundantly clear to the Trust that the Lower Thames Crossing scheme must not be taken forward by Government and that an immediate delay is put in place until the project has been assessed against the Government's own net zero targets and climate change commitments, and against National Highways' proposed approach to future road transport.

14.5. If the project is to go ahead then National Highways must seek to identify a range of alternative designs and engineering solutions that will ensure further avoidance of damage, loss and deterioration of irreplaceable habitats, as well as reductions of carbon and nitrogen emissions.

14.6. In summary, the Woodland Trust **strongly objects** to the proposed Lower Thames Crossing scheme on account of the loss and deterioration of ancient woodland, veteran trees, and the Trust's own Ashenbank Wood site, as well as the potential for long-term deterioration of these and other natural habitats from harmful emissions during the scheme's construction and operation, including the hugely unacceptable climate change impacts of the scheme.

14.7. The Trust will welcome further discussion on this scheme with the Planning Inspectorate, National Highways and other relevant stakeholders. If any further information is required from the Trust, then please do not hesitate to get in contact.

Yours sincerely,

Jack Taylor *Dip Arb L4 (ABC)*
Lead Campaigner – Woods Under Threat
[redacted]@woodlandtrust.org.uk

Woodland Trust
Kempton Way, Grantham, Lincolnshire, NG31 6LL
0330 333 3300
www.woodlandtrust.org.uk