

RHS RESPONSE TO RESPONSES OF HE, NE AND SWT TO THE EXA4 QUESTIONS IN REP10-004, REP10-016 AND REP10-017

No	Question to:	Question	HE / NE / SWT response	RHS Deadline 11 response to HE / NE / SWT response
1. General				
4.1.1	Applicant	Please provide an update on the progress being made in the vicinity of Heyswood Campsite to survey the woodland area affected by Proposed Change 7, as referred to in paragraph 3.4.8 of Optional alternative private means of access through Heyswood Campsite' [REP7-016].	Highways England's response: At the time of writing this response, Highways England is aiming to visit the Heyswood Campsite on the 1st June 2020 as part of carrying out the National Vegetation Classification assessment and to also record additional trees. This will take place only if health and safety allows due to the current COVID-19 crisis.	N/A
4.1.3	Applicant	The ExA notes the comments that you have made in REP7-001 with respect to your intention not to submit any executed side agreements as Examination documents on the grounds of commercial sensitivity. To assist the ExA's understanding of the matters that may be covered within any such side agreements, the ExA considers the Applicant should submit a Schedule listing all of the side agreements it is expecting to enter into. The Schedule should include summaries of the heads of terms that are likely to be included in each of the agreements.	Highways England's response: This information is provided in a schedule to this document (TR010030/ Volume 9.113), which is submitted at Deadline 10.	N/A
2. Principle and nature of the development, including need and alternatives				
4.2.1	RHS and Applicant	<p>The ExA notes that throughout the Examination the RHS has sought to argue, cumulatively through its air quality, ecological and socio-impact submissions, that without the inclusion of the full 'RHS Alternative Scheme'(south facing slips at the Ockham Park junction and a left out from Wisley Lane) the Proposed Development's air quality impact upon the integrity of the Thames Basin Heaths Special Protection Area (the SPA) would be higher than it might otherwise be, through the additional distance travelled by some visitors to RHS Wisley, while also contending that some visitors being faced with longer journey distances and/or times would be deterred from making visits to your gardens, resulting in a loss of income for the RHS. It appears that when the strands of the RHS's Examination case are taken together there are three scenarios that could flow from it:</p> <p>1) Scenario one - the operation of the Proposed Development would result in reduced visitor numbers and income for the RHS, with a consequent reduction in vehicular activity and emissions within the SPA attributable to RHS Wisley visitors and thus less of an effect on the integrity of the SPA due to air quality effects.</p> <p>2) Scenario two - in spite of the Proposed Development involving greater journey distances and/or times in getting to and from the gardens that would not act as a significant deterrent to visitor numbers, with the result that the RHS would not experience loss of income at the levels projected by Hatch Regeneris in its reports [REP1-039, and appended to REP6-024], but that there would be additional vehicular movements and emissions within the SPA, which the RHS contends would be to the potential detriment of the SPA's integrity.</p> <p>3) Scenario three - there would be a combination of some loss of visitor numbers to the gardens and some income for the RHS, but some additional vehicular activity and emissions in the SPA, but that neither the loss of income for the RHS nor any potential effects on the integrity of the SPA would be as significant as has been argued.</p> <p>Of the three potential scenarios outlined above, please identify which one best fits the case the RHS is seeking to make, and comment on the implications of this.</p>	Highways England's response: Although the question is addressed to Highways England and the RHS, only RHS can answer which of three scenarios best fits the case RHS is seeking to make.	No change to RHS response in REP10-025.
3. Air quality and human health				
4.3.1	Applicant	Please calculate the full range of vehicle emissions for:	Highways England's response: The air quality assessment for the Scheme uses traffic data outputs for various time periods from a regional model (SATURN), which represents average conditions for the particular hour	The RHS would stress that HE has not directly answered this question. HE has failed to calculate the full range of vehicle emissions for (a) and (b) and scenarios (1) – (6) as requested by the ExA. HE should be readily able to use Defra's Emission Factor Toolkit

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		<p>a) typical family sized cars powered by both petrol and diesel engines that were originally manufactured to meet each of European Emissions Standards Euro 3, Euro 4, Euro 5 and Euro 6.</p> <p>b) articulated lorries capable of hauling a fully laden weight of 44 tonnes manufactured to meet each of European Emissions Standards Euro 3, Euro 4, Euro 5 and Euro 6.</p> <p>Under each of the following scenarios:</p> <p>1) the existing road layout and making a left turn from the M25 onto A3 or a left turn from the A3 onto the M25 encountering only a green traffic light phase.</p> <p>2) the existing road layout and making a left turn from the M25 onto A3 or a left turn from the A3 onto the M25 encountering one red traffic light phase.</p> <p>3) the existing road layout and making a left turn from the M25 onto A3 or a left turn from the A3 onto the M25 encountering three red traffic light phases.</p> <p>4) the existing road layout and making a left turn from the M25 onto A3 or a left turn from the A3 onto the M25 encountering five red traffic light phases.</p> <p>5) the proposed road layout and making use of the free flow left slip from the M25 onto A3 or the A3 onto the M25 and travelling at the full design speed for the slip road.</p> <p>6) the proposed road layout and making use of the free flow left slip from the M25 onto A3 or the A3 onto the M25 and travelling at half the full design speed for the slip road.</p>	<p>modelled (AM peak/PM peak etc) (5.5.18 of APP-050). Whilst micro simulation traffic models are used in scheme assessments to test the operational aspects of schemes (such as junctions), they are not utilised at that level of detail in the air quality assessment.</p> <p>Changes in emissions due to signal timings for example, would require an emissions model that generates second by second emissions with inputs relating to vehicle dynamics. This level of detail would not be proportionate to undertaking an air quality assessment in accordance with DMRB guidance which ensures compliance with the NN NPS.</p> <p>Where traffic lights are located at junctions, traffic will need to stop and start, thus leading to higher emissions at this type of location, than a junction without traffic lights. The more times a vehicle needs to stop and start, as a result of encountering more traffic light phases due to congestion, the higher the emissions from that vehicle are likely to be over a specific distance or period of time. The effect, however, would be very localised to the junction.</p>	<p>(EFT) and the traffic data (flows and speeds) for the links used in the air quality modelling (which cover scenarios (1) to (6)), to address the ExAs question in full.</p>
4.3.2	Applicant, NE, EBC,, GBC and RHS	<p>You are all requested to provide your organisations' corporate views on the effect of the Government's evolving policy to reduce vehicle emissions might have for the consideration of the air quality impacts of the Proposed Development. In replying to this question, you should provide an indication of:</p> <p>1) the individual emissions types that might change and the magnitude of change for those particular emissions; and</p> <p>2) how any changes to emissions may arise over time, using 2015 as the base year, and plotting any changes on a graph of a form that you consider most appropriate to depict the information being provided.</p>	<p>Highways England's response: As a Government owned company, Highways England's corporate policy is to follow the air quality advice and tools published by Government.</p> <p>Paragraph 5.8 of the National Policy Statement for National Networks sets out that air quality assessment for projects should be undertaken using the Government's published Emission Factor Toolkit (EFT). EFT describes emissions for a range of different vehicle classes e.g. cars, vans, HGVs, buses, fuel type and emission standard e.g. Euro 4 / IV, 5 / V and 6 VI for speeds between 5 and 130kph. Emissions are available for NOx, particulate matter and carbon dioxide (CO2).</p> <p>The Design Manual for Roads and Bridges (DMRB) air quality chapter (LA 105), and prior to this interim advice note (IAN) 185/15) provides advice on the use of speed-banded emission rates, which are derived from EFT, for use in assessment of projects. LA 105 (and prior to this IAN 170/12v3) also provides advice on making allowances for long term anticipated trends in NOx and NO2</p> <p>EFT sets out the Government's understanding of current vehicle emissions through to 2030 to be used by developers, this incorporated the individual emissions of the various types of fleet and the projections of the fleet in the future. If the ExA requires further detail relating to the assumptions in EFT they would need to contact the Department for Environment, Food and Rural Affairs (Defra) and the Department for Transport (DfT) for advice on any future changes to the national fleet and individual vehicle emissions.</p> <p>Natural England's response: Natural England is an evidence led organisation, and respond with reference to data around long term trends of air pollutants. We do not have a formal corporate view on impacts of evolving policy. However I can confirm that the key pollutants we consider when accessing planning applications are the Nitrogen based pollutants. Ammonia, Nitrogen Deposition and Atmospheric Nitrogen. These are the key pollutants likely to affect habitats.</p>	<p>The RHS provided a response to the ExA in REP10-025 that addressed how emissions might change over time, for both ammonia and NOx emissions, including the provision of graphs. The HE response on the other hand makes no attempt to address the ExA question on the emission types that might change, nor to provide graphs of how emissions may change over time.</p> <p>It is now evident from NE's answer that NE regards ammonia as one of the key pollutants likely to affect habitats.</p> <p>Based on this and the Court of Justice of the European Union caselaw (see Freeths' Annex REP6-024), there can now be no doubt that ammonia must be taken into account by the Secretary of State when assessing air quality impacts of the DCO Scheme on the SPA. This is also supported by ExQ4 (4.4.7) (REP10-025) which listed 4 relevant documents (one of which is NE's own document REP10-029) (REP10-027; REP10-028; REP10-029; REP10-030).</p>

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				This is also supported by the DMRB guidance LA115 (Habitat Regulations Assessment) dated January 2020 which the RHS is providing in the Appendix to this question.
4.3.3	Applicant	In Appendix B of REP5-003 (as amended by REP8-022) you provide in combination predictions for the heathland part of the SPA but not for the area within 150m from the road i.e. the woodland buffer. Please provide modelling in regard to nitrogen deposition rates in combination with other plans or projects, including the ammonia contribution, for receptors in the SPA within 150 m of the road.	<p>Highways England's response: The calculations provided in Appendix B of REP5-003 are not a requirement of the DMRB methodology. They are highly precautionary based on an approach which is not standard practice for Highways England schemes.</p> <p>Calculations are provided for four scenarios which are explained further below:</p> <ul style="list-style-type: none"> • Base year (2015) • Do Nothing (DN) (2022) • Do-Minimum (DM) (2022) • Do-Something (DS) (2022) <p>The traffic model used for this Scheme is a regional strategic model which was developed in accordance with the Department for Transport's best practice guidance (webTAG). It takes account of traffic growth using national trip end model (NTEM) factors and therefore includes traffic from plans and projects across an extensive study area. The traffic model provides data outputs which are used in the air quality assessment for a base year, a do-minimum and a do-something scenario for the opening year.</p> <p>The "do nothing" scenario is based on the traffic data for the base year, and assumes that there is no growth in traffic from the base year (2015). Given that there will be traffic growth between the base year (2015) and the opening year (2022), the traffic flows for the "do nothing" are an underestimate.</p> <p>Hence any change with the Scheme will be smaller as the difference between the "do nothing" and the Scheme will show the change in nitrogen deposition from the Scheme, committed developments and traffic growth.. The change between the Do Minimum and the Do Something will provide the difference in nitrogen deposition rates as a result of the Scheme.</p> <p>As noted at REP8-045, 4.4.3 the calculations for the "do nothing" were made as a sensitivity test, to demonstrate that there would be no discernible change in nitrogen deposition rates at the supporting habitats of the qualifying features in the SPA (i.e. those beyond 150 m of the road edge).</p> <p>In terms of examining the effect of ammonia, as a precautionary approach, the calculated road component to the nitrogen deposition rate from the NOx concentration was doubled to account for the indicative contribution from ammonia. As the contribution of ammonia from road vehicles is noted to be indistinguishable from background at distances of over 30 metres from the road, receptor points beyond this distance were not adjusted for ammonia.</p> <p>The calculations show the nitrogen deposition rates with and without the indicative contribution from ammonia for the four scenarios noted above. The data shows that as would be expected there is an increase at the majority of receptor points between the Do Nothing and the Do Something scenarios. The only exception is at the transect east of the A3, near junction 10, where there is a decrease between the Do Nothing and the Do Something scenarios.</p> <p>It is worth noting that the calculations show that there is a decrease in nitrogen deposition rates between the Do Minimum and the Do Something scenarios at the two transects on the A3, further south of the junction, as a result of a reduction in congestion on the A3 with the Scheme.</p> <p>In all cases the nitrogen deposition rates with the Scheme are below those calculated for the 2015 base year, showing an improvement in future years with or without the Scheme, regardless of scenario.</p> <p>The calculations are provided separately in application document TR010030/9.112 at Deadline 10 submission.</p>	<p>HE has now provided, in its table in REP10-007, <u>some of</u> the data that the RHS has said are essential for a full assessment of air quality impacts on the SPA.</p> <p>However:</p> <ol style="list-style-type: none"> 1) The results in REP10-007 are only for receptors out to 100m from the road, and have therefore not been presented as a complete package with those for the receptors at 150m and 200m from the road, which are set out in REP8-022 (the HE / NE SoCG). 2) The results are not presented as a change in relation to the critical load (of 10kgN/ha/yr), as is necessary to allow appraisal against the air quality target in Natural England's Supplementary Advice on Conserving and Restoring Site Features for the Thames Basin Heaths SPA (REP5-034). 3) HE has chosen to ignore the ammonia contribution beyond 30m from the road. The RHS has clearly set out in REP10-025 (ExQ4 question 4.4.19) why this makes <u>no</u> scientific sense. 4) The in-combination results for Transect 4 in REP10-007 <u>cannot be considered reliable</u>. <p>In relation to points 1) to 3): the RHS has provided an update to HE's table in REP10-007 that includes the results for the receptors at 150m and 200m (see RHS's Table A appended to RHS's Deadline 11 response to Q4.3.3). This update also includes four additional columns in which the results are shown as a percentage change in relation to the critical load, with the two of these columns showing the results corrected to include the ammonia contribution at all distances.</p> <p>In relation to point 4):</p> <p>The anomaly for Transect 4 is particularly apparent in RHS's updated Table A. In the RHS updated Table A all the transects 1-6 show a significant worsening in the levels of nitrogen deposition (seen clearly in the last but one column) for the in-combination calculations, <u>except</u> for Transect 4. Transect 4 (very strangely) shows an in-combination improvement.</p> <p>The in-combination improvement seen at Transect 4 is a direct result of the difference in the Transect 4 nitrogen deposition figures between the 2022 Do Nothing (DN) column to the 2022 Do Minimum (DM) column.</p> <p>There are three reasons why RHS believes that this "improvement" cannot be relied upon:</p> <ol style="list-style-type: none"> a) Extremely low average speeds predicted to apply to the DN 2022 scenario, due to heavy congestion / severe flow breakdown, with the removal of this heavy congestion in the DM 2022, which leads to the improvement (reduction) in nitrogen deposition in the DM: <p>The improvement from DN to DM has been explained to the RHS by Ms Vicki Sykes and Mr Steve Katesmark of Atkins, on behalf of the HE, as being due to modelled heavy traffic congestion / a severe traffic flow breakdown on the southbound on-slip from the M25 to the A3 predicted in the 2022 DN scenario (in turn reflecting the 2015 traffic model) but which is predicted to disappear in the 2022 DM scenario (note that the DM scenario reflects the existence of other plans or projects but excludes the DCO Scheme). By this heavy congestion disappearing in the 2022 DM scenario, there is a nitrogen deposition improvement compared with the 2022 DN scenario (emissions of nitrogen oxides in the heavy congestion speed band are higher than those in the light congestion of free flow speed bands).</p> <p>Atkins has provided to RHS the modelled traffic flow data. From these data, the traffic flow breakdown / heavy congestion described in the DN 2022 scenario is evident in the AM and PM peak periods only, with the speed in the AM peak derived from the traffic model being a remarkably low 13 kph, averaged over 3 hours. Obviously such a low speed in the DN 2022 scenario, reflecting the predicted heavy congestion, when compared with the DM 2022 scenario (with a speed of 31 kph and light congestion) will show a large "improvement" in N dep (as is evident for this transect in Table A provided</p>

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				<p>by the RHS at Deadline 11). Hence the RHS has been very keen to understand the evidence for such heavy congestion / such a low speed prediction of 13 kph, so as to check that this prediction is correct.</p> <p>Mr Katesmark initially stated in a telephone conversation with Prof. Laxen, dated 19 June 2020 at 14:30, that this low speed of 13 kph reflects a measured 3-hour average speed from the traffic survey used to support the 2015 traffic model which has in turn been used in the 2022 DN air quality calculations (the 2022 traffic is that from the 2015 model). Prof. Laxen sought clarification by email dated 22 June 2020 at 12:00 asking Ms Sykes and Mr Kaesmark to "... provide the measured speed data that demonstrate the Do-Nothing speeds on the southbound on-slip that informed your modelling".</p> <p>In response, however, they could not provide any measurement data to support this modelled low speed of 13 kph on the A3 southbound on-slip, saying in an email to Prof. Laxen dated 25 June 2020 at 17:19: "... the observed journey time data which corresponds to the link referred to starts at the M25 clockwise off-slip and ends at the end of the A3 southbound on-slip to the A3 is provided below. This data covers a route as described and is not broken down into constituent parts. As such, it does not highlight the variations on a specific parts within that route; such as the specific link in question WebTAG does not require all journey time routes for all time periods to validate against observed data for a strategic model to be accepted as a sufficiently accurate representation of existing conditions for the purpose of scheme assessment, providing the majority of the routes do validate well; which the model does. Furthermore, if the speed band for this link on the A3 on-slip is incorrect in the 2015 Base model, it would only make a minimal difference to the calculations of the nitrogen deposition rates as explained below." (emphasis added).</p> <p>The email response goes on to say: "Even if the speed band category in the base year and hence for the "do nothing" scenario was changed from heavy congestion to light congestion, this would simply mean that at the transect east of the A3, just south of junction 10, the nitrogen deposition rates for the "do nothing" scenario would be slightly lower than for the do minimum scenario, as they are for the other transects".</p> <p>This shows, therefore, that Atkins cannot substantiate the very low speed on the A3 southbound on-slip predicted by the traffic model and the associated heavy congestion / flow breakdown. Atkins is also accepting that if the speed band were changed to a faster speed (i.e. changed from heavy congestion to light congestion for the AM peak and heavy congestion to free flow for the PM peak) the in-combination impacts for Transect 4 would be like those for the other 5 transects.</p> <p>b) A very small change in the numbers of vehicles ostensibly giving rise to the removal of congestion seen between DN 2022 and DM 2022:</p> <p>The improvement in DM 2022 is, according to Atkins, due to the fact that in the DM 2022 scenario, the heavy congestion / severe flow breakdown is no longer a problem.</p> <p>However, based on the Atkins traffic data provided, it is clear that there are only tiny differences (decreases) in the numbers of cars between the DN 2022 and the DM 2022 scenarios on the A3 on-slip from J10, which is the link that runs closest to Transect 4. Hence the RHS questions how such small decreases could lead to the resolution of the flow breakdown problem and such a large improvement in N dep.</p> <p>To expand on this, the traffic data show that, for the DN 2022 scenario, the flow on the southbound A3 on-slip in the AM peak (based on the 2015 model) was 2,479 veh/h, becoming 2,416 in the DM 2022. This is a minimal change of only 63 veh/h (a 2.5% reduction). Nevertheless this minimal change is, according to Atkins' model, sufficient to change the flow from "heavy congestion" to "light congestion" on this link. These terms are then linked to speed-banding emission factors in HE's air quality model. Similarly, for the DN 2022 scenario in the PM peak, the flow changes from 2,358 veh/h to 2,335 veh/h, a change of 23 veh/h (a 0.98% reduction), which, according to the Atkins traffic model, is considered sufficient to remove the flow breakdown and increase the 3-hour average speeds in the PM peak from 29 kph (heavy congestion) to 87kph (free flow) on this link.</p> <p>The RHS considers it highly unlikely that such small changes in traffic between the DN 2022 and DM 2022 scenarios could lead to such a large reduction in N dep levels along the whole of Transect 4.</p>

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				<p>c) A reduction in nitrogen deposition on Transect 4, due to reduced emissions on the A3 southbound onslip, makes no sense compared with increases in emissions from the other links on this section of the A3; and modelling now completed by the RHS demonstrates this result to be unreliable</p> <p>To test the unexpected results presented by HE for Transect 4, Air Quality Consultants Ltd (AQC) has (on behalf of RHS) carried out modelling of the section of the A3 running past Transect 4. This modelling has used the traffic data (flows and speed banding) for DN 2022 and DM 2022 provided by Atkins. The meteorological data used in the modelling are for the same site and same year as used by Atkins. The speed banding emission factors are those for motorways, as used by Atkins. The results are set out in a separate Note prepared by AQC and submitted by the RHS at Deadline 11. They show, using the traffic speeds supplied by Atkins, which are questioned in (a) above, that the in-combination impacts will be an <u>increase along Transect 4</u>, not a decrease as set out by HE.</p> <p>It is clear from the AQC modelling that there are very serious questions about the reliability of the HE modelling (with the speeds provided by HE and questioned in (a) and (b) above) and therefore the results for Transect 4 presented by HE cannot be relied upon.</p> <p>Taking points (a), (b) and (c) together it is evident that the in-combination results for Transect 4 in the table provided by HE in REP10-007, and updated by the RHS in Table A submitted at Deadline 11, cannot be relied upon. It is more likely than not that the in-combination impacts at all locations on Transect 4 will all be a worsening of nitrogen deposition, just as they are for all the other 5 Transects.</p> <p>Independent of the concerns set out above, the results now provided by HE, as set out in the updated Table A, show</p> <p>a) The critical load is exceeded across the whole of the SPA in all scenarios by a substantial margin. The DS nitrogen deposition rate in 2022 is up to 36.8 kg N/ha/yr (3.7 times the critical load)</p> <p>b) There are substantial in-combination increases in nitrogen deposition on all transects across the SPA, up to 49.6% of the critical load at receptor R157 (transect 1), with increases of 3% to 6% even at 150 m from the edge of the road. These in-combination increases have not been taken into account within the SIAA (REP4-018), rendering the SIAA unfit for purpose.</p> <p>c) The SIAA (REP4-018) that informed the ExA up to Deadline 10 said at paragraph 7.2.50 in relation to the 'DCO Scheme alone' (as no consideration had been given to the in-combination impacts):</p> <p><i>"These assessments have demonstrated that the potential for increases in nitrogen deposition greater than 1% of the critical load due to operation will be restricted to the first 12 m from the operational road boundary for Transect 4 and within 7 m from the operational road boundary for Transect 3. All other estimated increased in nitrogen deposition within the SPA can be considered not to be significant as they are below 1% of the critical load, and in many locations nitrogen deposition will be reduced when compared against the no Scheme 2022 scenario."</i></p> <p>The corrected information that should have been before the ExA in relation to the 'DCO Scheme alone' is very different, as set out in the following re-write of paragraph 7.2.50:</p> <p><i>"These assessments have demonstrated that the potential for increases in nitrogen deposition greater than 1% of the critical load due to operation will be restricted to a bit more than the first 75 m from the edge of the road for Transect 4 and a bit more than 25 m from the edge of the road for Transect 3. Increases in nitrogen deposition of more than 1% of the critical load are also seen out to a bit more than 100 m from the edge of the road for Transect 1, while in some locations nitrogen deposition will be reduced when compared against the no Scheme 2022 scenario."</i></p> <p>The corrected information that should have been before the ExA in relation to the 'DCO Scheme in combination' with other plans or projects is very different, as set out in the following further re-write of paragraph 7.2.50:</p> <p><i>"These assessments have demonstrated that the potential for increases in nitrogen deposition greater than 1% of the critical load due to operation of the scheme alone will</i></p>

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				<p><i>be restricted to a bit more than the first 75 m from the edge of the road for Transect 4 and a bit more than 25 m from the edge of the road for Transect 3. Increases in nitrogen deposition of more than 1% of the critical load are also seen out to a bit more than 100 m from the edge of the road for Transect 1, while in some locations nitrogen deposition will be reduced when compared against the no Scheme 2022 scenario. The in-combination assessment shows increases in nitrogen deposition greater than 1% of the critical load for all locations across the SPA (once the error in Transect 4 Do Nothing data is corrected for)."</i></p>
4. Biodiversity and Habitats Regulations Assessment				
4.4.1	Applicant, NE and RHS	<p>The ExA notes the answers made at Deadline 7 to its third written question 3.2.2 (any implications of the Court of Appeal's judgement concerning the Airports National Policy Statement) [PD-016]. With respect to '... any in principle type considerations raised in the recent Court of Appeal judgement ...' do you have any comments to make with respect to the Court of Appeal's findings with respect to the consideration of 'reasonable alternatives' under the Habitats Directive?</p> <p>Note: The Court of Appeal judgement (Plan B Earth v Secretary of State for Transport [2020] EWCA Civ 214 (27 February 2020)), while being widely accessible is currently not an Examination document. The ExA therefore requests the Applicant to submit this Court of Appeal judgement so that it can be added to the Examination Library and referred to by the ExA in its recommendation report to the Secretary of State should it consider it necessary to do so.</p>	<p>Highways England's response: As requested, Highways England has appended a copy of the Plan B judgment to this document (document reference TR010030/ 9.114).</p> <p>In relation to the Court of Appeal's judgment in Plan B so far as relevant to the consideration of 'reasonable alternatives' under the Habitats Directive, Highways England's position is that the Habitats Regulations Assessment [REP4-014] correctly applied the legal principles in concluding that there are no feasible alternative solutions to the Scheme. Indeed, the Court of Appeal's judgment supports the approach taken by Highways England in this case.</p> <p>The Court of Appeal's judgment upheld the conclusions of the Divisional Court in relation to scope of the 'reasonable alternatives' test under the Habitats Directive. In particular, the Divisional Court found that (although in the context of a National Policy Statement) 'the correct approach to "alternative solution" in article 6(4) of the Habitats Directive is tolerably clear. In respect of an NPS, a proposed option is not an "alternative solution" unless it meets the core policy objectives of the statement.' (paragraph 341 of the Divisional Court's judgment cited at paragraphs 92 and 116 of the Court of Appeal's judgment).</p> <p>The RHS alternative was properly considered by Highways England in developing its proposals for the Scheme. As reported at paragraphs 2.2.5 and 3.1 and of the Scheme Assessment Report: Side Roads Addendum (November 2017) [REP3-017 at pages 11-12 and 18-19), the retention of a left-out at the junction of Wisley Lane and the A3 northbound was discounted on safety grounds. The nature of the replacement access to be provided to Wisley Lane following the closure of the current left-in arrangement was also considered in detail in the Side Roads Addendum [REP3-017 at section 5.3] which highlights that proper consideration was given to avoiding so far as possible encroachment within the boundary of the SPA/SSSI. In terms of the impact on the SPA "WIS12" (a "left-out" arrangement involving a direct access slip road from Wisley Lane to A3 northbound) would be greater than "WIS11" (a southern link road option which forms part of the Scheme). The conclusion reached was that "WIS-11" was preferable in both safety and in environmental terms to other options including "WIS12". See also Highways England response to question 2.13.10 in REP5-014.</p> <p>Accordingly, the so-called RHS alternative is not a feasible alternative to the Scheme for the purposes of the Habitats Directive. It is not an alternative which would meet the objectives of the Scheme (as defined by the Client Scheme Requirements – i.e. the requirements for the Scheme as set by the Department for Transport) whilst giving rise to lesser impacts on a European site. The Client Scheme Requirements include a requirement in respect of safety that the Scheme should 'Reduce annual collision frequency and severity ratio on the main line A3, slip roads and M25 junction 10 gyratory' (see REP4-014 at page 6).</p> <p>As set out extensively in Highways England's previous submissions, the RHS alternative would not be acceptable on highway safety grounds and, in any event would not alter the conclusions of the HRA in relation to air quality (See also REP2-022, section 2 and Appendix A). Section 4 of REP4-005 (in row "REP1-38-2" of the table), shows that the northbound merge of Wisley Lane with the A3 has a significantly higher accident rate than average. The reason why the south-facing slip roads at the Ockham Park junction do not form part of the Scheme has been explained by Highways England in response to question 1.13.6 [REP2-013].</p>	<p>The HE response in relation to the RHS Alternative is incorrect.. Full legal submissions on this point will be provided in DL12.</p>
			<p>Natural England's response No comments to make.</p>	<p>No comment. See above.</p>
4.4.2	NE and SWT	<p>Please comment on: a) how dependent the breeding populations of Dartford warbler, European nightjar and Woodlark (the SPA's qualifying features) are on the invertebrate assemblage present in the woodland adjacent to the M25 and</p>	<p>Natural England's response All three Annex 1 bird species are essentially heathland birds where they occur in the Thames Basin Heaths SPA. Dartford warbler nest in dense patches of gorse or in tall heather and feed mainly upon spiders which live in the vegetation, but will also take other small insects such as</p>	<p>a) NE has not answered the question as to "how <i>dependent</i> the breeding populations of Dartford warbler, European nightjar and Woodlark (the SPA's qualifying features) are on the invertebrate <i>assemblage</i> present in the woodland adjacent to the M25 and A3 and which forms part of the SPA". They have said that they are</p>

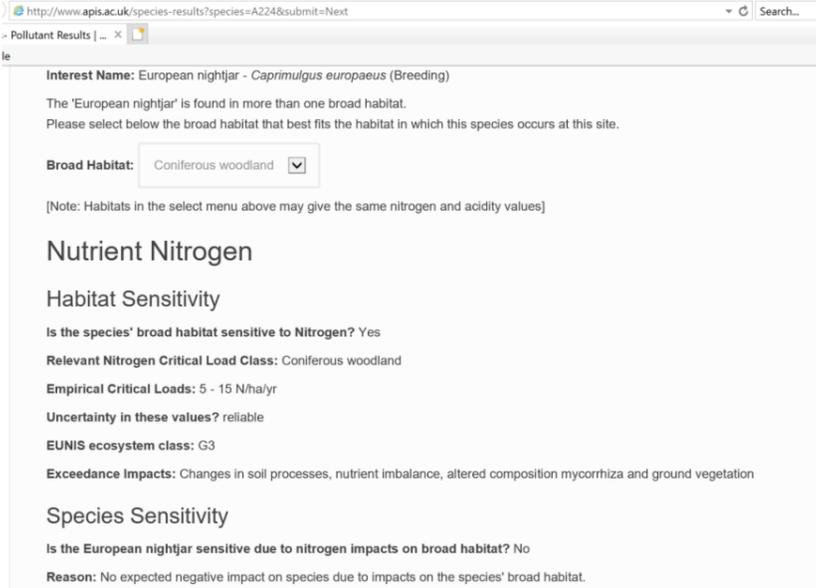
No	Question to:	Question	HE / NE / SWT response	RHS Deadline 11 response to HE / NE / SWT response
		<p>A3 and which forms part of the SPA. Do these qualifying features require particular species as part of their diet? Are they specialist or generalist in their dietary requirements?</p> <p>b) whether there is any notable difference in the nature of the invertebrate assemblage found in the woodland and heathland areas of this part of the SPA, and if there is a notable difference what form does that take?</p> <p>c) what is the sensitivity of the invertebrate assemblage present in this part of the SPA to the level of Nitrogen deposition?</p> <p>d) having regard to the predicted air quality levels within the various proposed SPA Enhancement Areas and Compensation Land areas, how confident are you that they will be able to function so as to offset any potential loss in carrying capacity and/or food resource as a result of the Proposed Development?</p>	<p>beetles and caterpillars. Woodlark favour areas of bare or sparsely vegetated areas for nesting and feeding. They feed on small seeds and small invertebrates such as ants and beetles on the ground. Nightjar nest in small patches of bare ground in heathland in places with good visibility across surrounding areas so that they can see predators approaching. They feed at night favouring areas where moths congregate such as sheltered edges of heathland margins. Besides moths nightjars will take other insects such as flies, chafers and dragonflies. So all three species have feeding preferences but are also generalist to a large degree and will take advantage of whatever invertebrate food is available.</p> <p>There are significant differences in the invertebrate assemblages present in the open heathland and in the woodland. The invertebrate assemblages associated with shady woodland have a larger proportion of invertebrates associated with dead and decaying wood, and with trees generally, and a significant proportion of the assemblage is associated with the shady ground layer, stands of bracken, bramble thickets and so on.</p> <p>The particular sensitivities of invertebrate assemblages to nitrogen deposition has not been studied in detail. It could be predicted that there may be small changes in the balance between particular species or species groups if for example nitrogen deposition encouraged growth of bramble and this replaced bracken. However, whether this is likely to result in a measurable change in overall abundance of invertebrates is much more difficult to predict and would depend on a wide range of other factors.</p> <p>The land manager at Ockham and Wisley Commons, Surrey Wildlife Trust has a proven track record in the restoration of heathland habitat following tree clearance. Good quality habitat is now present in areas which were occupied by dense broadleaved and conifer woodland in the 1980s and 1990s. Natural England is confident that with appropriate measures in place that the heathland creation proposed by the applicant will have similar success and will significantly enhance habitat suitability for the Annex 1 birds.</p>	<p>essentially heathland birds but not said how <i>dependent</i> the birds are on the <i>invertebrate assemblage</i> of the woodland. The ExA should also not be misled by NE's description of these species as 'essentially heathland birds' this is incorrect. RHS has submitted evidence to demonstrate that nightjar for example will feed within woodland and travel considerable distances to find suitable feeding areas (Alexander and Cresswell 1990 REP10-031).</p> <p>NE also states that "all three species have feeding preferences but are also generalist to a large degree and will take advantage of whatever invertebrate food is available". This statement is not supported by reference to any evidence, which is unsurprising because it is incorrect. Each of the three SPA species have prey preferences. They are not generalist feeders. For example, the fact that nightjar are nocturnal, aerial feeders favouring moths as prey is well established in the literature (see for example https://www.bou.org.uk/the-secret-lives-of-nightjars/ where it is stated '<i>Moths are a key component of the Nightjar diet (Cramp 1985, Sharps 2013) and we were interested to find out if Nightjars were foraging in the habitats with the greatest moth biomass</i>'. Indeed nightjar prey preference is reflected in the Thames Basin Heaths Conservation Objectives Supplementary Guidance (REP5-034) where it is stated: "<i>The nightjar is insectivorous, feeding primarily on moths and beetles</i>" (our emphasis).</p> <p>It should be noted that many of the papers quoted in para 4.7.11 – 4.7.14 of REP4-018 also support the evidence that nightjar prefer certain prey species such as moths.</p> <p>This has practical applications for the assessment that should have been carried out but which has not been carried out. If, in assessing the impacts of nitrogen deposition on the woodland, it were found that moths were affected more significantly than other groups of insect then it would follow that the impact upon the nightjar within the SPA would also be more significant.</p> <p>b) NE's response is a general comment and not specific to this part of the SPA. This question can only be answered accurately by reference to invertebrate surveys of the SPA and such surveys have not been presented by HE or NE.</p> <p>c) NE has acknowledged here "small changes in the balance between particular species or species groups if for example nitrogen deposition encouraged growth of bramble and this replaced bracken" and is <u>uncertain</u> as to whether this could lead to a measurable change in overall abundance of invertebrates (our emphasis). We also note that NE has given no explanation of why they believe changes would be <i>small</i> when they have at the same time failed to relate their answer to relevant AQ levels. Finally NE's response makes no reference to the published scientific data. By contrast the RHS has presented detailed critiques of the potential impacts of elevated levels of nitrogen on invertebrate populations based on the peer reviewed literature (REP6-024 and REP8-054).</p> <p>NE's answer is inadequate as it has not addressed in any way the AQ impacts on the SPA Enhancement Area and Compensation Land areas. In this context, RHS refers to Baker Consultants Ltd's Figure 2 enclosed in the Appendix to this document which shows the HE's SPA Enhancement Areas E1-E8 in relation to the 150m buffer zone. Full submissions will be made on this in Deadline 12.</p>

No	Question to:	Question	HE / NE / SWT response	RHS Deadline 11 response to HE / NE / SWT response
			<p>SWT's response</p> <p>a) The Dartford Warbler is not dependent on the adjacent woodland. They are dependent on the presence of sufficient low scrub (dwarf shrubs and gorse). They feed on a broad range of invertebrates found in this dwarf shrub and on the ground within it. Nightjars nest on heathland and recently cleared conifer plantations. They primarily forage over heathland but will seek out other invertebrate-rich habitats such as wetlands, grasslands and native deciduous woodland. At certain times, they may use pine woodland margins but not the woodland itself. Woodlarks are restricted to heathland and temporary clearings in forestry plantations. They nest in a grass tussock or heather bush. They forage on a broad range of invertebrates as well as plant material found on bare ground and in low, sparse heather and grasses. As such these three species are not tied to the invertebrate assemblage of the pine woodland.</p> <p>b) There are notable differences in the invertebrate species found in woodland and heathland areas, although there will be some species that can use both habitats. As detailed above the invertebrate assemblage is not critical to the SPA bird population; what is far more important is the collective abundance of the total invertebrate assemblage than its components.</p> <p>c) The global decline in invertebrate diversity and its bio-abundance is likely caused by a range of factors including climate change, pesticide use, atmospheric and light pollution, either impacting directly or indirectly via habitat changes. The invertebrate species found within the pine woodland are generally non-specialist and therefore less threatened (due to pine woodland being a sub-optimal, non-native habitat in Surrey) and we concentrate our management on the rare and more highly-specialised species of the open heathland.</p> <p>d) We are confident that the habitat that is being created will offset any potential loss of food resource. It may be considered therefore that the habitat being created is of far greater value to the SPA qualifying bird species than the pine woodland that is being cleared.</p>	<p>a) Again there is a failure to answer the question. The question was not "how dependent the birds are on the woodland?", but rather "how dependent they are on the <i>invertebrate assemblage</i> present in the woodland".</p> <p>b) We refer to our response immediately above to NE's response. SWT's statement that it is the total invertebrate assemblage that is important rather than specific components is entirely unsupported by any scientific references or data and is contrary to the published literature as described above.</p> <p>c) SWT are correct in stating that atmospheric pollution negatively affects invertebrate populations. It is for that very reason that the AQ effects of the DCO Scheme must be fully assessed. SWT has failed to understand that the majority of the woodland within 150m of the A3/M25 is mixed woodland either "semi natural" or "plantation" (see HE's AS006 Figure 3 Phase 1 Habitat Plan) and therefore potentially important habitat for feeding nightjar (see Alexander and Cresswell 1990 REP10-031), particularly in circumstances where HE's bird survey data is not sufficient (despite HE's claims to the contrary) to demonstrate that nightjar / woodlark do not forage in the woodland 0-150m from the roads (see RHS' paragraphs 48-55 REP8-054).</p> <p>d) Again the question posed has not been answered as no consideration has been given to AQ levels in the woodland.</p>
4.4.3	NE and SWT	Please submit a copy of the 2010-2020 Wisley and Ockham Management Plan, as referred to in paragraph 7.2.12 of the Applicant's 'Habitats Regulations Assessment: Stage 2: Statement to inform appropriate assessment' [REP4-018]. Only one copy of this document need be submitted and NE and SWT should decide between themselves as to which organisation is best placed to submit it.	<p>Natural England's response</p> <p>I understand that Surrey Wildlife Trust have submitted this plan.</p>	<p>Following the belated release of the Wisley and Ockham Commons Management Plan (2010 – 2020) to the inquiry (REP10-019) RHS the ExA now has a full understanding of how the SPA around Junction 10 was/is to be managed.</p> <p>RHS has carried out a thorough analysis of this Management Plan and have compiled 4 Baker Consultant Ltd Figures 1-4 and a Baker Consultants Ltd Table 1 to aid the ExA in its understanding of the implications of the management of the SPA and what is proposed under the HE scheme.</p> <p>RHS has noted in particular from the Wisley & Ockham Commons Management Plan 2010-2020 now provided that:</p> <ol style="list-style-type: none"> 1) The Plan makes clear that the intention, as part of the management of the site 2010-2020, has been / is to thin and fell woodland in the 0-150m zone from the roads. This is shown by Baker Consultants Ltd's Figure 1 at the Appendix to this document; 2) The SPA Enhancement Areas E1-E8 as described in REP4-014 (5.1.42-5.1.69) prescribe compensatory measure activities which in some cases are already reflected as intended management in the Management Plan and which in some cases differ from the management set out in the Management Plan. This is shown by Baker Consultants Ltd's Figures 2, 3 and 4 and is explained further in Baker Consultants Ltd's Table 1, all in the Appendix to this document. <p>Full submissions on this will be provided in DL 12.</p>
			<p>SWT's response</p> <p>Available but a large file size. We will submit but please let us know if it is not received.</p>	N/A
4.4.4	NE and SWT	Are the management prescriptions for the Ockham and Wisley Commons SSSI component of the SPA the same as for the other parts of the SPA or are they component specific? If the management prescriptions are different for the Ockham and Wisley Commons SSSI component of the SPA, please give examples of how they differ from the management prescriptions for other parts of the SPA.	<p>Natural England's response</p> <p>Each component part of Thames Basin Heaths SPA is underpinned by a separate SSSI and therefore the objectives of each component are, to a large degree, determined by the nature of the SSSI and the reasons for its designation as SSSI. Some component parts are largely made up by commercial forestry plantations, other parts are military training areas, whilst others have high levels of public access. Management prescriptions are therefore driven by the type of habitat present, the management options available and the pressures on the site.</p>	No comment

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			<p>In the case of Ockham and Wisley Commons SSSI it is acknowledged by Natural England that this site suffered badly from management neglect in the 1970s such that only a small area of open heathland remained present in the 1980s. So the emphasis of our management advice has been to encourage the restoration of open heathland where this is most likely to produce good quality habitat and to focus effort on bringing this into good condition.</p> <p>SWT's response The areas on this site are managed for their habitat. Therefore heathland areas across the site (whether they are "just" SSSI or both SSSI/SPA) are managed in the same way. Woodland areas are managed according to a woodland plan.</p>	No comment
4.4.5	SWT	Please provide a plan or plans showing the locations where woodland clearance has already taken place since 2010 or is planned to be undertaken within the SPA, pursuant to the implementation of the 2010-2020 Wisley and Ockham Management Plan.	<p>SWT's response There are two plans within the Management Plan 1) Figure 8 Heathland on site 1948-2011. This shows heathland on site as it declined and was then restored. 2) Figure 9 The felling plan map. The works were not phased over five years but were instead completed in three. This was completed before 2010.</p>	<p>The response provided does not fully answer the question.</p> <p>The response focuses on felling already completed by 2010 (note that, according to Figure 9 of the Wisley and Ockham Commons Management Plan, the planned felling in that figure related to 2006-2011 and not beyond; and the woodland thinning Figure 10 also runs to 2012 only).</p> <p>The response does not address works since 2010 to date even though this question 4.4.5 also relates to this period. RHS notes that the Wisley and Ockham Commons Management Plan states at page 9 that "this management plan sets out the management objectives and work programmes for Ockham and Wisley Commons that will be implemented by these staff for the period 2010-2020" and there then follows at the back of the Management Plan an 8-page table entitled "Wisley Ockham Work Programme 2010-2020". The Table sets out, in this work programme, the various management prescriptions for the different management compartments shown in Figure 3 of the Management Plan and this includes woodland clearance and felling between 2010-2020 in areas beyond those shown in Figure 9.</p> <p>We refer here to Baker Consultants Ltd's Figure 1-4 and Table 1 (attached at the Appendix to this document) which set out details of the Management Plan's thinning and felling activities by reference to the 150m woodland buffer zone and the SPA Enhancement Areas.</p>
4.4.6	SWT	In our response [REP5-044] to the ExA's second written question 2.4.7 [PD-010] at your item f) you have commented 'An increase in heathland area has been shown on this site to increase the SPA bird population'. Can you please advise whether your comment refers to an increased number of the SPA's qualifying features of European nightjar, Woodlark and Dartford warbler and, if so, provide any documentary evidence you have available substantiating that.	<p>SWT's response The works undertaken over the last 20 years have substantially increased the heathland area for the three heathland specialists to use. We have attached a spreadsheet showing the recorded numbers between 2006 and 2018 by SWT. 2019 and 2020 figures are available from HE/Atkins. There is a brief commentary on that document.</p>	No comment
4.4.7	NE, Applicant and RHS	Has the Institute of Air Quality Management or any other UK professional body, such as the Chartered Institute of Ecology and Environmental Management, produced any guidance requiring the effects of ammonia on SPAs to be assessed? If any such guidance has been produced, then a copy of it should be submitted. Only one copy of any such guidance need be submitted and NE, the Applicant and the RHS should decide between themselves as to which organisation is best placed to submit it.	<p>Highways England's response: Regulatory bodies (Environment Agency, Natural Resources Wales) have published guidance on the assessment of impacts of ammonia from livestock farming/agriculture on designated sites but not road schemes. For example https://cdn.naturalresources.wales/media/684017/guidance-note-20-assessing-the-impact-of-ammonia-and-nitrogen-on-designated-sites-from-new-and-expanding-intensive-livestock-units.pdf</p> <p>Neither the Institute of Air Quality Management (IAQM) nor the Chartered Institute of Ecology and Environmental Management (CIEEM) have produced guidance which requires the assessment of ammonia on a SPA when assessing a road scheme. The IAQM's 2019 guidance focuses on air quality assessments in support of Habitats Regulations Assessments while the CIEEM is expected to produce guidance later this year (2020).</p> <p>The IAQM's guidance is not prescriptive, but it does refer to the DMRB methodology and the assessment of NOx emissions in relation to road traffic (section 5.3.6 and 5.5.4). Footnote 40 states "The DMRB methodology must be used for Highways England road schemes".</p> <p>It is understood that RHS will be submitting a copy of the IAQM guidance document.</p> <p>Natural England's response Natural England is not aware of any such documents or guidance on this specific aspect where it might have relevance to this case.</p>	<p>This is a surprising response as the RHS has submitted four relevant documents here: REP10-027, REP10-028, REP10-029 and REP10-030.</p> <p>RHS's Comments on the significance of these documents in relation to ammonia are provided in its answer to this question in REP10-025.</p> <p>HE appears to be out of date in relation to the 2019 IAQM guidance document, since the IAQM published a 2020 version in May 2020.</p> <p>This NE response is extremely surprising since NE's own HRA guidance on assessing road traffic emissions (REP10-029) is highly relevant.</p>

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4.4.8	NE	At paragraph 68 of REP8-054 the RHS has stated that it recognises that the '... Emissions Factors Toolkit does not include ammonia ...'. Please comment why you consider the Emissions Factors Toolkit does not refer to ammonia and set out what you consider to be the implications of this omission in regard to the Proposed Development.	<p>Natural England's response</p> <p>I have discussed the matter with our Air Pollution Specialists. They advise that ammonia is most likely not included in the Toolkit at the moment as there is an evidence gap around ammonia and road emissions. It is a matter our specialists are aware of and are aiming to discuss with AQTAG to consider whether it is an issue that needs to be addressed.</p>	<p>The response is surprising since the obvious reason why the Toolkit does not cover ammonia is the reason given by the RHS in its response to this question (REP10-025) relating to the focus of the Toolkit being on human health impacts where ammonia is not a concern.</p> <p>The RHS accepts that the important role played by ammonia from vehicle emissions in contributing nitrogen deposition has only recently been recognised. There are, nevertheless, ways to calculate ammonia emissions that are already being applied to air quality assessments in support of shadow HRAs. Natural England has itself been a consultee in the HRA for Epping Forest where ammonia from traffic was included, and is thus aware that it can be calculated (REP10-026). It is therefore surprising that NE only provides a stalling response, saying it is necessary "to consider whether ammonia is an issue that needs to be addressed". This response is disingenuous to the evidence and the position NE has adopted elsewhere.</p>
4.4.9	NE	At paragraph 67 of REP8-054 the RHS has referred to ammonia from road traffic having been incorporated into the assessment in connection with the preparation of the Local Plans for Wealden District Council, Epping Forest District Council and Havant Borough Council. Please explain why you consider ammonia emissions from road traffic has been considered in connection with the preparation of the Local Plans for each of the previously mentioned local planning authorities.	<p>Natural England's response</p> <p>In each of the cases cited the inclusion of ammonia emissions from road traffic will have been included in assessment of potential impacts because of the presence of sensitive features at European sites in or around the borough. For example, in the case of Epping Forest this is an internationally important site for its assemblage of veteran trees supporting epiphytic lichens. Lichens are highly sensitive to aerial pollution and so assessment of potential impacts arising from ammonia deposition is an important consideration.</p>	<p>To be clear, while the Epping Forest example considers ammonia from vehicles both in terms of direct effect of ammonia on lichens and its contribution to nitrogen deposition, the other two cases (Wealden DC and Havant BC) consider ammonia in relation to its contribution to nitrogen deposition only (there is no lichen issue).</p>
4.4.11	NE	Having regard to the fact that the SPA has been designated to sustain the favourable conservation status of the populations of the three 'Interest' (Qualifying) Features, i.e. the Dartford Warbler, European nightjar and Woodlark, please explain the precise function and importance which the woodland that immediately adjoins the M25 and the A3 performs in the pursuance of the maintenance of the SPA's integrity.	<p>Natural England's response</p> <p>Any woodland immediately adjacent to the M25 and A3 is likely to have an important 'buffering' function in respect to the maintenance of the SPA, that is it may help to ameliorate the potential effects of raised nutrient levels from vehicle emissions (by helping to disperse emissions), it helps to provide a barrier against litter arising from the road reaching open heathland and may help to reduce the risk of fires spreading from the roadside and into open heath. These would not be considered to be critical functions by Natural England but they are important in this location.</p>	<p>This is a very surprising answer, since NE has failed here to note the role of the woodland as a source of invertebrate prey for the SPA qualifying features, in particular nightjar.</p> <p>NE fully agreed with the SIAA presented by HE (REP4-018) (their agreement is clear from 3.2.13 SoCG HE / NE (REP8-022)) and the SIAA concluded very clearly that the woodland habitat adjacent to the roads contributes to the overall invertebrate resource within the wider SPA:</p> <p><i>7.2.10 "Whilst the mixed woodland to be lost as a result of the Scheme does not directly support the qualifying species as a nesting or foraging habitat, it does form a supporting habitat of the SPA and does contribute to the overall invertebrate resource within the wider SPA."</i></p> <p>NE agreed in its SoCG (REP8-022) (paragraph 3.2.6) that "this woodland buffer may also provide an invertebrate source for the wider SPA."</p> <p>NE has not mentioned the role of the woodland in this respect, even though this is the very basis on which NE and HE agreed that loss of the woodland (through land take) would have an adverse effect on the integrity of the SPA. REP4-018 states:</p> <p><i>7.2.19 "Although the loss of this woodland habitat would not lead to a physical reduction in the number or distribution of qualifying species, this land take will reduce the overall size of the SPA. The land take will therefore result in a reduction in the habitats that provide supporting habitat to the SPA (for example, providing a woodland buffer between the roads and the open heathland areas)."</i></p> <p><i>7.2.21 "The adverse effects resulting from the permanent land take would result in a permanent reduction in the extent of supporting habitat for the SPA, including contributing to the invertebrate food resource for all three qualifying species (especially nightjar) during the breeding season. The temporary land take will be reinstated with shrub and tree planting, and therefore any adverse effects resulting from the loss of this land (i.e. the resulting reduction in invertebrates) will be long-term (i.e. up to 20 years for a shrub and trees to establish) but not permanent."</i></p> <p>Finally, no evidence has been presented that woodland belts have a significant function in reducing nitrogen pollution. Furthermore, the argument that the woodland belt is important is not consistent with the plan to remove or thin substantive parts of this woodland belt as part of the management of the SPA (see Baker Consultant Ltd's Figure 1 at the Appendix to this document); and as part of the compensatory measures for the DCO Scheme (see Baker Consultants Ltd's Figure 2 at the Appendix to this document).</p>
4.4.12	NE	In REP8-054 the RHS has criticised the Applicant's reliance on overall invertebrate biomass considerations in reaching its conclusions. However,	<p>Natural England's response</p>	<p>The background to this question is that HE has arrived at a contradictory conclusion:</p>

No	Question to:	Question	HE / NE / SWT response	RHS Deadline 11 response to HE / NE / SWT response
		<p>in REP9-003, page 10, the Applicant contends that the 'established woodland buffer will continue to function in the same way as it currently does and provide the same invertebrate resource as it currently does' and has referred to both the assemblage and biomass of the invertebrate resource being unchanged. Please comment on this, having regard to the particular prey requirements of each of the qualifying features of the SPA and the potential impacts of emissions resulting from both the Proposed Development and the 'RHS Alternative Scheme' on these prey species of the SPA qualifying features. Also please comment on the impacts on invertebrates and the SPA qualifying features as a result of any changes to the woodland buffer, for example through habitat management in the proposed enhancement areas or the erection of the Cockcrow Bridge.</p>	<p>As all three Annex 1 bird species are essentially heathland species where they occur in Thames Basin Heaths SPA it seems highly unlikely that small changes in invertebrate abundance in the woodland buffer will make any measureable difference to overall food availability for these birds. Dartford warbler are extremely unlikely to be affected at all as they feed almost exclusively on invertebrates living in their immediate territory (usually a fairly small area of dense gorse or mature heather). Similarly, woodlark are extremely unlikely to be affected. They do not generally feed on invertebrates associated with woodland, rather they feed almost exclusively on species associated with warm, open ground such as ants and ground beetles. Nightjar can range over quite large areas to feed. So small changes in prey availability, should they occur, are unlikely to have any measurable impact on nightjar. They will simply select other areas for feeding. It is also important to bear in mind that nightjar favour woodland edge transitions to heathland for feeding. The overall extent of woodland edge habitat in the woodland buffer is not significantly altered by the scheme.</p> <p>The overall effect of the scheme as proposed will be to improve the suitability of the area to support Annex 1 birds. The habitat enhancement works to improve structural variation in the SPA compensation areas, the significant area of heathland creation and the addition of one or more green bridges will all contribute towards increasing the extent and suitability of the habitats to support all three species. Natural England has provided the applicant with advice over these aspects from an early stage and we are confident that significant benefits for the SSSI and SPA can be achieved.</p>	<p>In REP7-009 HE acknowledged (2.2.12) that there <i>could</i> be an AQ impact on invertebrate assemblage in the woodland buffer from the forecast changes in nitrogen deposition rates (although stated there would be no material effect on the overall biomass (ie abundances) of invertebrates);</p> <p>and yet</p> <p>in REP9-003, page 10, HE contends that the 'established woodland buffer will continue to function in the same way as it currently does and provide the same invertebrate resource as it currently does'</p> <p>NE's answer to this question 4.4.12 is incomplete as it fails to address the RHS Alternative.</p> <p>Furthermore the RHS now notes that NE concedes in its response to this question 4.4.12 (and its response to 4.4.13) (contrary to HE's view above) that there <i>could</i> be "small changes in invertebrate abundance in the woodland buffer" (ie biomass) and that NE does not have <i>certainty</i> over the difference that this could make.</p> <p>We are also surprised to read that NE takes the view that small changes in prey availability, should they occur, are unlikely to have any measurable impact on nightjar since "They will simply select other areas for feeding". Again this statement is not supported up by any evidence. There is a) no evidence presented with the DCO Scheme on where the nightjar present on this site are feeding b) no evidence of the prey resource availability in the area, c) no assessment of whether the current levels of nitrogen deposition are affecting prey numbers, and d) no assessment of where the 'other' feeding areas may be and the energy cost to the birds of flying to these new sites.</p> <p>The RHS is also surprised to read that "It is also important to bear in mind that nightjar favour woodland edge transitions to heathland for feeding. The overall extent of woodland edge habitat in the woodland buffer is not significantly altered by the scheme". The extent of woodland edge habitat is not the answer. The key point is the <i>availability of the nightjars' preferred prey items at that woodland edge habitat</i> and (as accepted by HE REP7-009 (2.2.12)) this could be affected by the forecast changes in nitrogen deposition rates in the woodland as a whole. See for example HE's response to 4.4.13 "Some of these mobile invertebrates may pass from the established woodland buffer into the adjacent heathland habitats and woodland edge and therefore potentially contribute to the nightjars' diets".</p> <p>Whilst NE states that "The overall effect of the scheme as proposed will be to improve the suitability of the area to support Annex 1 birds", it does not make any comment on this in relation to air quality effects.</p>
4.4.13	RHS, NE and Applicant	<p>In REP8-054 the RHS cites evidence that demonstrates an effect due to Nitrogen deposition on moth species that are adapted to low Nitrogen levels. How sensitive is the invertebrate assemblage in this part of the SPA to the effects of Nitrogen deposition?</p>	<p>Highways England's response:</p> <p>As explained in paragraphs 7.2.10-7.2.15 of the SiAA [REP4-018], the potential contribution of an invertebrate resource from the established woodland buffer to the SPA qualifying species' diets is restricted to nightjars. As set out in paragraphs 4.7.11 and 4.7.12, this is because nightjars are aerial predators, using habitats such as open heathland and woodland edges to hunt flying insects, such as moths and beetles. Some of these mobile invertebrates may pass from the established woodland buffer into the adjacent heathland habitats and woodland edge and therefore potentially contribute to the nightjars' diets.</p> <p>As explained within the Pollutant impacts by species section of the APIS website (see below), exceedance of nitrogen above the critical load within coniferous woodland can lead to "changes in soil processes, nutrient imbalance, altered composition mycorrhiza and ground vegetation".</p> <p>The Pollutant impacts by species section of the APIS website states that nightjars are not sensitive to nitrogen impacts on coniferous woodland (see below), indicating that nitrogen changes within this habitat type would not have an effect on nightjars.</p> <p>This gives a clear indication that the invertebrate assemblage of relevance to the SPA qualifying species within the established woodland buffer is not sensitive to the effects of Nitrogen deposition.</p> <p>Due to the Scheme's operational nitrogen rates being lower than the current baseline (even with a precautionary measure of doubling changes in nitrogen deposition rates to account for</p>	<p>As noted above:</p> <p>The SiAA acknowledged the role of the woodland invertebrates to the integrity of the SPA: 7.2.10 of REP4-018:</p> <p>7.2.10 "Whilst the mixed woodland to be lost as a result of the Scheme does not directly support the qualifying species as a nesting or foraging habitat, it does form a supporting habitat of the SPA and does contribute to the overall invertebrate resource within the wider SPA."</p> <p>And</p> <p>In REP7-009 HE acknowledged (2.2.12) that there <i>could</i> be an AQ impact on the <i>invertebrate assemblage</i> in the woodland buffer from the forecast changes in nitrogen deposition rates in this DCO Scheme (although HE stated there would be no material effect on the overall biomass (ie abundances) of invertebrates);</p> <p>And</p> <p>We note that NE now concedes in its response to ExQ4 question 4.4.12 (and its response to ExQ4 4.4.13) (contrary to HE's view above) that there <i>could</i> be "small</p>

No	Question to:	Question	HE / NE / SWT response	RHS Deadline 11 response to HE / NE / SWT response																																	
			<p>ammonia, as set out in bullets 5-9 on page 9 of Highways England's comments on RHS's deadline 8 submission [REP9-003] and again in response to ExQ4 question 4.3.3), Highways England can be certain that the vegetation quality and structure within the established woodland buffer and the associated invertebrate assemblage will continue to exist as it currently does.</p> <p>RHS provided evidence in its response to Highways England's deadline 7 submission [REP8-054] in order to demonstrate that changes in nitrogen deposition rates could lead to changes in invertebrate assemblages. The article from Leiden University referenced by RHS in paragraph 34 of their deadline 8 submission [REP8-054], to which ExQ4 question 4.4.13 refers, was used by RHS to demonstrate how increased nitrogen deposition causes fundamental changes in moth populations with species that are adapted to low nitrogen levels declining. It should be noted that the paper describes how large butterflies and moths that feed on plants that profit from higher fertility are becoming more common as a result of increased nitrogen deposition. In addition, the research paper by Kurze <i>et al.</i> (2018) referenced in paragraph 3 of Baker Consultants' <i>Further evidence relating to the effects of nitrogen on invertebrates in RHS's deadline 8 submission [REP8-054]</i> is a study that assessed the effects of intensive agricultural fertiliser applications and presents evidence that the current fertilisation quantities in agriculture exceed the physiological tolerance of common lepidoptera species.</p> <p>Highways England has set out its position with regards to air quality impacts on the SPA in Chapter 4 of the Applicant's comments on RHS's deadline 8 submission [REP9-003]. It is clear that the operational nitrogen deposition rates will be lower than the current nitrogen deposition rates. Therefore, the evidence provided by RHS is not relevant to this Scheme, as operational nitrogen deposition rates will not be increasing above the current baseline rates.</p> 	<p>changes in <i>invertebrate abundance</i> in the woodland buffer" (ie biomass) and that NE does not have <i>certainty</i> over the difference that this could make.</p> <p>We therefore have clear acknowledgements of not only an impact pathway between the "invertebrates from the woodland buffer" and the qualifying features of the SPA, but also that the changes in air quality from the DCO Scheme could affect the invertebrate assemblage (composition) and invertebrate abundance.</p> <p>In the light of this it is extraordinary that HE should then argue that APIS "<i>gives a clear indication that the invertebrate assemblage of relevance to the SPA qualifying species within the established woodland buffer is not sensitive to the effects of nitrogen deposition</i>". As just recited, it has already been acknowledged by NE and HE that small changes in both invertebrate assemblage and abundance could arise from the levels of pollutants from the DCO Scheme. The APIS website is not primary scientific literature. If HE wants to demonstrate beyond reasonable scientific doubt that the invertebrate prey of the nightjar is not sensitive to the effects of N dep (which would seem extraordinary given the acknowledgments already made) then HE needs to provide specific primary scientific literature evidence of which prey items of nightjar would not be sensitive to the effects of N dep.</p> <p>Furthermore, it should be noted that the APIS website has only considered habitat that is used for nightjar reproduction (see extract from APIS website below available at http://www.apis.ac.uk/src/select-a-feature?site=UK9012141&SiteType=SPA&submit=Next). It does not consider impacts on woodland which may harbour the prey of nightjar or potential feeding habitats such as mixed woodland. Such woodland makes up the majority of the habitat which is within the woodland 0m-150m from the roads at this SPA. APIS cannot anticipate every assessment situation and has clearly not considered feeding habitat in this case. This emphasises that it is essential to rely of the primary scientific literature.</p> <table border="1" data-bbox="2041 1003 2914 1791"> <thead> <tr> <th>Interest Type</th> <th>Broad habitat</th> <th>Is species' broad habitat sensitive to Nitrogen?</th> <th>Relevant Nitrogen Critical Load Class</th> <th>Empirical Critical Load kg N/ha/yr</th> <th>Uncertainty in these values?</th> <th>EUNIS ecosystem class</th> <th>Exceedance Impacts</th> <th>Justification for linking habitat to Critical Load Class</th> <th>Is species sensitive due to nutrient nitrogen impacts on broad habitat?</th> <th>Reason</th> </tr> </thead> <tbody> <tr> <td>Reproducing</td> <td>Coniferous woodland</td> <td>Yes</td> <td>Coniferous woodland</td> <td>5 - 15</td> <td>reliable</td> <td>G3</td> <td>Changes in soil processes, nutrient imbalance, altered composition mycorrhiza and ground vegetation</td> <td>Based on the NBN Habitats Dictionary (http://www.nbn.org.uk/habitats) this EUNIS class contains, overlaps with or is contained within the Broad Habitat, or component of the broad habitat, in which the feature occurs, and represents the most equivalent EUNIS class for which a critical load is set.</td> <td>No</td> <td>No expected negative impact on species due to impacts on the species' broad habitat.</td> </tr> <tr> <td>Reproducing</td> <td>Dwarf shrub heath</td> <td>Yes</td> <td>Dry heaths</td> <td>10 - 20</td> <td>reliable</td> <td>F4,2</td> <td>Transition from heather to grass dominance, decline in lichens, changes in plant biochemistry, increased sensitivity to abiotic stress.</td> <td>Based on the NBN Habitats Dictionary (http://www.nbn.org.uk/habitats) this EUNIS class contains, overlaps with or is contained within the Broad Habitat, or component of the broad habitat, in which the feature occurs, and represents the most equivalent EUNIS class for which a critical load is set.</td> <td>Yes</td> <td>Potential negative impact on species due to impacts on the species' broad habitat.</td> </tr> </tbody> </table> <p>Important Note: Use the high end of the range with high precipitation and the low end of the range with low precipitation; Use the low end of the range for systems with a low water table, and the high end of the range for systems with a high water table. Note that water table can be modified by management; Use the high end of the range when sod cutting has been practiced; use the lower end of the range with low intensity management.</p> <p>The argument that "everything is ok" because the Scheme's operational nitrogen rates are lower than the current baseline is not an answer since (i) as above the HE and NE have already accepted not only an impact pathway between the "<i>invertebrates from the woodland buffer</i>" and the qualifying features of the SPA, but also that the changes in air quality from the DCO Scheme could affect the invertebrate assemblage</p>	Interest Type	Broad habitat	Is species' broad habitat sensitive to Nitrogen?	Relevant Nitrogen Critical Load Class	Empirical Critical Load kg N/ha/yr	Uncertainty in these values?	EUNIS ecosystem class	Exceedance Impacts	Justification for linking habitat to Critical Load Class	Is species sensitive due to nutrient nitrogen impacts on broad habitat?	Reason	Reproducing	Coniferous woodland	Yes	Coniferous woodland	5 - 15	reliable	G3	Changes in soil processes, nutrient imbalance, altered composition mycorrhiza and ground vegetation	Based on the NBN Habitats Dictionary (http://www.nbn.org.uk/habitats) this EUNIS class contains, overlaps with or is contained within the Broad Habitat, or component of the broad habitat, in which the feature occurs, and represents the most equivalent EUNIS class for which a critical load is set.	No	No expected negative impact on species due to impacts on the species' broad habitat.	Reproducing	Dwarf shrub heath	Yes	Dry heaths	10 - 20	reliable	F4,2	Transition from heather to grass dominance, decline in lichens, changes in plant biochemistry, increased sensitivity to abiotic stress.	Based on the NBN Habitats Dictionary (http://www.nbn.org.uk/habitats) this EUNIS class contains, overlaps with or is contained within the Broad Habitat, or component of the broad habitat, in which the feature occurs, and represents the most equivalent EUNIS class for which a critical load is set.	Yes	Potential negative impact on species due to impacts on the species' broad habitat.
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				<p>(composition) and invertebrate abundance; and (ii) this argument fails to take into account the Air Quality conservation objective target applicable to this SPA (see NE's Supplementary Advice, REP5-034).</p> <p>Highways England states that it <i>"can be certain that the vegetation quality and structure within the established woodland buffer and the associated invertebrate assemblage will continue to exist as it currently does"</i>. But this is <u>directly contradicted</u> by HE's own assertion in REP7-009 (2.2.12).</p> <p>Leiden University:</p> <p>HE has either not read or has completely misunderstood the Leiden paper which the RHS has referred to. The work showed that species which feed on those plants which benefit from high levels of nitrogen are becoming more common while those which are associated with low nitrogen levels are becoming less common. The SPA birds are associated with low nitrogen environments therefore any shift of nitrogen levels will affect their normal prey items. HE seems to be assuming that nightjar would simply switch their feeding preferences to those species which benefit from high levels of nitrogen. HE has presented no evidence to support this assumption.</p> <p>As the RHS has pointed out some invertebrates do benefit from high levels of nitrogen however this can often lead to them becoming pest species. For example RHS has provided evidence that elevated levels of nitrogen increase the reproduction rates of heather beetle which can cause significant damage to heathlands (REP6-024). The potential for increased damage from heather beetle to occur has not been considered by HE.</p> <p>Kurze et al:</p> <p>The Kurze et al 2018 paper looked at the effects of elevated levels of nitrogen within the leaves of food plants on various Lepidoptera (moths and butterflies) and this was achieved by applying levels of nitrogen which would be typical of agricultural environments. These were laboratory experiments carried out over a short period of time. Sites that suffer from long-term chronic levels of high nitrogen deposition may well experience similar effects as nitrogen builds up in both the soils and the plant tissue. Kurze et al concluded in the paper <i>"We provide the first evidence that under an experimental setup nitrogen enrichment in plants due to agricultural fertilization goes beyond the physiological tolerance of common Lepidoptera species with tremendous effects on the survival of the larvae. Thus, host-plant quality changes due to agricultural fertilization or atmospheric nitrogen deposition might substantially contribute to the range-wide decline of Lepidoptera species in Western and Central Europe."</i> [our emphasis].</p>
			<p>Natural England's response As stated above Natural England does not believe that small changes in invertebrate biomass in the woodland buffer, should they occur, would have measurable effects on the ability of the site to support nightjar.</p>	<p>NE has not answered the question - the question relates to invertebrate assemblage, not invertebrate biomass. It is also very concerning that NE is offering the ExA its views based on <i>"belief"</i> rather than facts.</p>
4.4.14	NE	At paragraphs 40 to 42 of REP8-054 the RHS contends that the Applicant in REP7-008 has 'selectively quoted' from and incorrectly interpreted the conservation objectives for the SPA. Having regard to what the Applicant has stated in REP7-008 and the RHS in REP8-054 in terms of whether there would or would not be an adverse effect on the integrity of the SPA, please comment on whether there has been any misrepresentation by the Applicant about the Proposed Development's relationship with the SPA's conservation objectives insofar as those relate to the Ockham and Wisley Commons SSSI component of the SPA.	<p>Natural England's response Natural England is satisfied that the Applicant properly understands the conservation objectives for Thames Basin Heaths SPA, including how those relate to the Ockham and Wisley Commons SSSI component.</p>	<p>The question is not whether HE has correctly <u>understood</u> the COs. It is whether they have correctly <u>applied</u> the COs. HE has clearly not done so.</p>
4.4.15	NE	Please comment on the RHS's contention in REP9-014 that the conclusion you have drawn in your Statement of Common Ground [REP8-022] is incorrect in regard to the potential impact on air quality of the SPA woodland areas within 150m of the roads. Also, please comment as to whether or not air quality effects could hamper any future restoration of the woodland buffer, if so required.	<p>Natural England's response As stated above, the primary function of the woodland alongside the M25 and A3 is to provide a 'buffering' function, ie to help to ameliorate the potential effects of raised nutrient levels affecting supporting habitat of Annex 1 birds by helping to disperse vehicle emissions. Natural England is confident that aerial pollution effects, should they occur, in the woodland buffer will not have measurable effects on the Annex 1 bird species.</p>	<p>See comments above at ExQ4 4.4.11</p> <p>No evidence has been presented by HE or NE that the woodland next to the roads has an important buffering function to ameliorate the potential effects of raised nutrient levels affecting the supporting habitat of Annex 1 birds by helping to disperse vehicle emissions.</p>

No	Question to:	Question	HE / NE / SWT response	RHS Deadline 11 response to HE / NE / SWT response
			<p>In the event that a decision is made to create heathland or some other habitat in place of the existing woodland buffer raised nutrient levels may be a factor which would have to be taken into account when planning operations but it would not be an insurmountable problem. There are many cases where heathland and other habitats of biodiversity value have been created close to busy roads. These projects need careful planning and different management techniques in comparison with lower nutrient situations. However, they are achievable.</p>	<p>NE's answer to the question "<i>whether or not air quality effects could hamper any future restoration of the woodland buffer, if so required</i>" is inadequate. HE does not address the technical feasibility of compensatory habitat, which is a key. The points at RHS REP8-054, paragraphs 96-108 continue to apply.</p>

4.4.16 Applicant and RHS

Please provide your respective precise calculations for any differences in Nitrogen disposition within the SPA, up to 200 metres from the outer edge of the carriageway of the widened M25 and A3, when the effects of the submitted Proposed Development are compared with the full 'RHS Alternative Scheme', ie the presence of south facing slip roads at the Ockham Park junction and a left turn from Wisley Lane. In responding to this question, the ExA is expecting to be provided with:

- confirmation of what data is being used to underpin the calculations;
- a written summary of any assumptions made;
- the step by step methodology for undertaking the calculations; and
- the actual worked calculations.

Nitrogen deposition rates have been calculated for the Applicant's Scheme and the full "RHS Alternative Scheme" for the four transects leading away from the A3 into the SPA which would be affected by traffic changes. The method for the air quality assessment is provided in section 5.5 of the ES chapter [APP-050].

Data Used

The ADMS dispersion model uses emissions data from Highways England speed band emission factors (based on EFT v8) calculated from the traffic data for each modelled road link, including flow, % HGV and speed for each hour [para 5.5.17, APP-050]. In addition, the model uses input data on road alignment, road width and local meteorological data.

It should be noted that the calculations provided here are based on the DF3 traffic modelled outputs, rather than DF2 which was provided in the ES (as discussed in para 5.5.12 of APP-050). In addition, the calculations will be overestimated as the traffic data on which they are based represent a special event on a weekday (as documented in REP2-011 and REP1-010) and are not representative of a full year.

Assumptions

Assumptions are provided in section 5.6 of the ES Chapter 5 [APP-050]. In addition to the uncertainties associated with the modelling, and the traffic data as noted above, it is assumed that transect points adjacent to the M25 would not be affected by the changes in traffic which would largely affect traffic travelling between RHS Wisley and the A3 to the south. Therefore this response provides results for the A3 transects only.

Step by step methodology

The approach described in Highways England DMRB guidance HA207/07 has been followed.

- 1) Take the modelled NOx concentration from the modelled output for each receptor point. This is the 'road' NOx concentration.
- 2) Adjust the 'road' NOx concentration, following the standard verification process (para 5.5.21, APP-050).
- 3) Convert the 'road' NOx concentration to the 'total' NO2 concentration using Defra's NOx to NO2 calculator (para 5.5.20, APP-050).
- 4) Adjust the total NO2 concentration with a "gap factor" to account for future uncertainty in emissions (paras 5.5.23-24, APP-050).
- 5) Convert the total NO2 concentration to the nitrogen deposition (N dep) rate at each receptor using a factor of 0.29 (1 µg/m3 NO2 = 0.29 kgN/ha/yr) (the updated factor for woodland habitat, taken from LA105).
- 6) Take the average background N dep rate for the base year from the Air Pollution Information System (APIS) website for the 5 km grid square in which the SPA is located.
- 7) Reduce the background N dep rate for the future opening year.
- 8) Take the NO2 background concentrations from Defra's 1 km background maps for the same 5 km grid square used for the background N dep rate from the APIS website.
- 9) Average the NO2 background concentration over the twenty-five 1 km grid squares.
- 10) Convert the average background NO2 concentration to the N dep rate using a factor of 0.29 (the same factor as used at step 5), to give the average background N dep rate.
- 11) Subtract the average background N dep rate from the total N dep rate at each receptor point (calculated at step 5) to give the "road" component of the N dep rate at each receptor point.
- 12) Add the "road" N dep rate to the average background N dep rate (calculated at step 10) to give the total N dep rate at each receptor.

Calculations

The calculations are provided in the table below. The difference in nitrogen deposition rates between the two proposals is shown in the last column, and shows that the RHS Alternative Scheme would give lower N dep rates, with the largest change being 0.2 kg N/ha/yr at the

The Table provided by HE in response to this question is incomplete, as it does not include the effects of ammonia.

The RHS has corrected the HE table to include ammonia and has added a column showing the benefits of the RHS Alternative as a percentage of the critical load (of 10 kg N/ha/yr). See RHS's corrected Table B below.

It is evident that the RHS Alternative will make some substantial reductions in nitrogen deposition within the SPA alongside the A3.

Full submissions will be made at deadline 12.

Table B

Effect of RHS Alternative Scheme on nitrogen deposition on 4 transects alongside the A3. Based on Highways England Table from Q4.4.16 in REP10-004 corrected to include ammonia (last 4 columns).

Transect	Distance from road (m)	2022 DS (Applicant's Scheme with traffic following signposted route) (kgN/ha/yr)	2022 (full RHS Alternative Scheme) (kgN/ha/yr)	Difference (kgN/ha/yr)	Corrected to include ammonia			
					2022 DS (Applicant's Scheme with traffic following signposted route) (kg N/ha/yr)	2022 (full RHS Alternative Scheme) (kgN/ha/yr)	Difference (kgN/ha/yr)	Change due to the RHS Alternative as % of critical load
Transect 3: running west from A3 at the A3 northbound off-slip (at M25 J10)	7	20.9	20.78	-0.12	29.8	29.56	-0.24	-2.4%
	10	19.71	19.59	-0.12	27.42	27.18	-0.24	-2.4%
	25	17.22	17.16	-0.06	22.44	22.32	-0.12	-1.2%
	50	15.8	15.77	-0.03	19.6	19.54	-0.06	-0.6%
	75	15.16	15.16	<0.01	18.32	18.32	<-0.01	<-0.1%
	100	14.9	14.87	-0.03	17.8	17.74	-0.06	-0.6%
Transect 4: running east from A3 at the A3 southbound on-slip (at M25 J10)	150	14.52	14.49	-0.03	17.04	16.98	-0.06	-0.6%
	200	14.29	14.29	<0.01	16.58	16.58	<-0.01	<-0.1%
	5	23.6	23.39	-0.2	35.2	34.78	-0.42	-4.2%
	10	21.74	21.6	-0.15	31.48	31.2	-0.28	-2.8%
	25	18.78	18.67	-0.12	25.56	25.34	-0.22	-2.2%
	50	16.9	16.84	-0.06	21.8	21.68	-0.12	-1.2%
Transect 5: The A3 northbound, to the south of J10 (adjacent to Bolder Mere, to west of A3)	75	16	15.94	-0.06	20	19.88	-0.12	-1.2%
	100	15.36	15.33	-0.03	18.72	18.66	-0.06	-0.6%
	150	14.69	14.69	<0.01	17.38	17.38	<-0.01	<-0.1%
	200	14.35	14.32	-0.03	16.7	16.64	-0.06	-0.6%
	8	21.89	21.74	-0.14	31.78	31.48	-0.3	-3.0%
	10	20.78	20.67	-0.12	29.56	29.34	-0.22	-2.2%
Transect 6: The A3 southbound, to the south of J10 (adjacent to Bolder Mere to east of A3)	25	17.42	17.33	-0.09	22.84	22.66	-0.18	-1.8%
	50	15.51	15.48	-0.03	19.02	18.96	-0.06	-0.6%
	75	14.69	14.66	-0.03	17.38	17.32	-0.06	-0.6%
	100	14.23	14.23	<0.01	16.46	16.46	<-0.01	<-0.1%
	150	13.77	13.74	-0.03	15.54	15.48	-0.06	-0.6%
	200	13.5	13.5	<0.01	15	15	<-0.01	<-0.1%
Transect 6: The A3 southbound, to the south of J10 (adjacent to Bolder Mere to east of A3)	10	22.93	22.76	-0.17	33.86	33.52	-0.34	-3.4%
	25	18.93	18.81	-0.12	25.86	25.62	-0.24	-2.4%
	50	16.52	16.46	-0.06	21.04	20.92	-0.12	-1.2%
	75	15.45	15.42	-0.03	18.9	18.84	-0.06	-0.6%
	100	14.84	14.81	-0.03	17.68	17.62	-0.06	-0.6%
	150	14.17	14.14	-0.03	16.34	16.28	-0.06	-0.6%
200	13.77	13.77	<0.01	15.54	15.54	<-0.01	<-0.1%	

As regards the point made about land take, the RHS repeats that the RHS Alternative is an alternative solution. See the RHS' answer to ExQ4 4.4.1 above.

receptor point closest to the road (5 m). This is smaller than the change between the Do Minimum and the Do Something scenarios (as documented in REP5-024). At the location of the supporting habitats for the qualifying features, over 150 metres from the road, the difference between the two proposals reduces to 0.03 kg N/ha/yr or less.

As set out in bullets 11-16 on pages 9 and 10 of the Applicant's comments on RHS's deadline 8 submission [REP9-003, section 4], the SiAA ruled out an adverse effect on the SPA as a result of air quality changes. The SiAA could not rule out an adverse effect on the SPA as a result of land take.

The RHS Alternative Scheme requires more land take from the SPA than the Applicant's Scheme and therefore is not a better alternative to the Scheme with regards to an adverse effect on the integrity of the SPA. Moreover it does not meet the relevant design standards (REP9-003, 4.1.3, point 16).

In addition, as can be seen in the table below, the difference in nitrogen deposition rates when comparing the Applicant's Scheme and the RHS Alternative is small and can be considered de minimis at the receptor points representing the supporting habitats for the qualifying features.

Transect	Distance from road (m)	2022 DS (Applicant's Scheme with traffic following signposted route) N dep rate (kg N/ha/yr)	2022 (full RHS Alternative Scheme) N dep rate (kgN/ha/yr)	Difference (kgN/ha/yr)
Transect 3: running west from A3 at the A3 northbound off-slip (at M25 J10)	7	20.90	20.78	-0.12
	10	19.71	19.59	-0.12
	25	17.22	17.16	-0.06
	50	15.80	15.77	-0.03
	75	15.16	15.16	<0.01
	100	14.90	14.87	-0.03
	150	14.52	14.49	-0.03
	200	14.29	14.29	<0.01
Transect 4: running east from A3 at the A3 southbound on-slip (at M25 J10)	5	23.60	23.39	-0.20
	10	21.74	21.60	-0.15
	25	18.78	18.67	-0.12
	50	16.90	16.84	-0.06
	75	16.00	15.94	-0.06
	100	15.38	15.33	-0.03
	150	14.69	14.69	<0.01
	200	14.35	14.32	-0.03
Transect 5: The A3 northbound, to the south of	8	21.89	21.74	-0.14
	10	20.78	20.67	-0.12
	25	17.42	17.33	-0.09

No	Question to:	Question	HE / NE / SWT response	RHS Deadline 11 response to HE / NE / SWT response																																																		
			<table border="1"> <tr> <td rowspan="5">J10 (adjacent to Bolder Mere, to west of A3)</td> <td>50</td> <td>15.51</td> <td>15.48</td> <td>-0.03</td> </tr> <tr> <td>75</td> <td>14.69</td> <td>14.66</td> <td>-0.03</td> </tr> <tr> <td>100</td> <td>14.23</td> <td>14.23</td> <td><0.01</td> </tr> <tr> <td>150</td> <td>13.77</td> <td>13.74</td> <td>-0.03</td> </tr> <tr> <td>200</td> <td>13.50</td> <td>13.50</td> <td><0.01</td> </tr> <tr> <td rowspan="6">Transect 6: The A3 southbound, to the south of J10 (adjacent to Bolder Mere to east of A3)</td> <td>10</td> <td>22.93</td> <td>22.76</td> <td>-0.17</td> </tr> <tr> <td>25</td> <td>18.93</td> <td>18.81</td> <td>-0.12</td> </tr> <tr> <td>50</td> <td>16.52</td> <td>16.46</td> <td>-0.06</td> </tr> <tr> <td>75</td> <td>15.45</td> <td>15.42</td> <td>-0.03</td> </tr> <tr> <td>100</td> <td>14.84</td> <td>14.81</td> <td>-0.03</td> </tr> <tr> <td>150</td> <td>14.17</td> <td>14.14</td> <td>-0.03</td> </tr> <tr> <td>200</td> <td>13.77</td> <td>13.77</td> <td><0.01</td> </tr> </table>	J10 (adjacent to Bolder Mere, to west of A3)	50	15.51	15.48	-0.03	75	14.69	14.66	-0.03	100	14.23	14.23	<0.01	150	13.77	13.74	-0.03	200	13.50	13.50	<0.01	Transect 6: The A3 southbound, to the south of J10 (adjacent to Bolder Mere to east of A3)	10	22.93	22.76	-0.17	25	18.93	18.81	-0.12	50	16.52	16.46	-0.06	75	15.45	15.42	-0.03	100	14.84	14.81	-0.03	150	14.17	14.14	-0.03	200	13.77	13.77	<0.01	
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4.4.17	NE	<p>In referring to land within the SPA, paragraph 94 and footnote 2 of REP8-054, the RHS has cited the concept of “site fabric” and the definition of that as used by you, without providing a reference for the source document within which that definition is found.</p> <ol style="list-style-type: none"> 1) Please provide a copy of the document which sets out the definition for site fabric. 2) With respect to the SPA land which the Applicant has identified as being either permanently or temporarily affected by the Proposed Development, please advice whether you consider any of that land falls into your definition of “site fabric” of the SPA and should potentially be excluded from the Applicant’s calculation identifying the amount of land required as SPA “compensatory” and “enhancement” land as part of the Proposed Development. 	<p>Natural England’s response Natural England has never used the term “site fabric” in this context. That term is used by Natural England to mean areas of habitat which were included in a designated site for purely pragmatic reasons and are areas which do not contribute in any way to the special nature conservation interest. That is not the case here. We have always maintained that areas of woodland permanently or temporarily lost as a result of scheme construction have a value which must be compensated for.</p>	<p>NE’s definition of “site fabric” is found in footnote 12 on page 16 of REP10-029 (NE’s advice on assessment of road traffic emissions under the Habitats Regulations).</p> <p>Note that the very small area of additional permanent loss (3.63m2) and temporary loss (of 28.0m2) of SPA land from the RHS Alternative is from land that is currently site fabric verge.</p>																																																		
4.4.19	Applicant and RHS	<p>With respect to the consideration of Ammonia emissions there continues to be disagreement between you about the interpretation of the concentration data shown in Figures 2 and 3 contained in REP5-049, for example in REP7-008 and REP8-054.</p> <p>It appears to the ExA that Figure 2 shows consistently higher concentrations of Ammonia up to around 30 metres from the centre line of the road that was surveyed and that there is then a levelling off in the concentration of Ammonia at between 100 and 110 metres on both the eastern and western sides of the road. If there is not a levelling off the Ammonia concentration at between 100 to 110 metres to an annual mean background concentration of the order of 0.6 to 0.8 micrograms per cubic metre for two nearby transects, then what might else explain what is shown in Figure 2 with respect to the concentration of Ammonia in the surveyed location?</p>	<p>Highways England’s response: As noted in REP 9-003 (paragraph 2.1.4 and 2.1.5) and REP7-008 (paragraph 2.2.4), Highways England have observed that the measured concentrations of ammonia at 22 metres are similar to those at 100 metres.</p>	<p>The RHS has addressed this matter fully in REP10-025, making clear that concentrations decline with distance from the road, tending towards the background but not reaching it, even at 200m distance.</p>																																																		
5. Construction																																																						
4.5.1	Applicant	<p>Please explain why the main materials processing activities have been moved from the Nutberry Farm to the Wisley Airfield worksite, as reflected in Change 9 [REP7-016]. In providing your answer, please justify why these operations could not be continued at the Nutberry Farm worksite even if that entailed other elements of the site having to be re-located to the Wisley Airfield worksite.</p>	<p>Highways England’s response: The main materials processing activities have been moved from the Nutberry Farm to the Wisley Airfield worksite for two main reasons:</p> <ol style="list-style-type: none"> 1. Safety – Under principles of prevention for safety risks there is a need to separate people from plant movements wherever possible. Having a material processing area at Nutberry Farm would put general workforce and office staff under increased exposure to heavy plant. At Wisley Airfield vehicles can be segregated from people far more easily. 2. Security – to accommodate material processing at Nutberry Farm storage of other materials and, potentially, site plant would be required at the former Wisley Airfield as there would be insufficient space at Nutberry Farm. Given the high value of materials that would be stored increased security would be required at the former Wisley Airfield including lighting. 	<p>No comment</p>																																																		

No	Question to:	Question	HE / NE / SWT response	RHS Deadline 11 response to HE / NE / SWT response
			The former Wisley Airfield would also be a highly trafficked area for a more extensive period of time as the material processing is ad hoc whereas access to general materials will be required 24/7, including overnight.	
4.5.2	Applicant	Please set out how the bund near to the eastern boundary of the Wisley Airfield worksite is to be constructed and maintained and indicate whether there would be scope to provide acoustic fencing on top of this bund. In answering this question please provide a proposed cross-section diagram of this bund and also indicate how this is to be secured in the dDCO.	<p>Highways England's response: As set out in Highways England's Response to Interested Parties Comments on the Examining Authority's Third Written Questions [REP8-047] in response to points made by Mr and Mrs P Young, Mrs A Barkham and Ms B Kendrick (question 3.5.1, page 42), unfortunately, it is not technically feasible to erect an acoustic fence on top of the bund. It would be subject to substantial wind loading which would require the fence to need substantial footings and these would have to be removed and the fence re-erected every time there was a need to add or remove topsoil. Additionally, 3m in height is best practice as higher bunds can negatively affect the quality of topsoil at the bottom.</p> <p>The bund at the former Wisley Airfield will be constructed in accordance with best practice set out in Construction Code of Practice for the Sustainable Use of Soils on Construction Sites, DEFRA, 2009 (submitted as TR010030/Volume 9.111 at Deadline 10). Diagrams, including cross sections, indicating the storage and management of soil in bunds for both dry and wet soil are set out in section 5.4 on pages 28 and 29, along with a description of these two methods and general methods of construction and maintenance in paragraphs 1 to 13 of section 5.4.</p>	No comment
4.5.3	Applicant	Please explain how the proposed operations at the Wisley Airfield worksite are to be monitored and how liaison with the local community in regard to notifying and rectifying any adverse impacts on living conditions, should they arise, would work in practice.	<p>Highways England's response: The mitigation commitments for the project, including those related to air quality, noise and vibration, are set out in the register of environmental actions and commitments (Tracked) - Rev 4 [REP8-020]. Table 1.1 includes a Schedule of environmental mitigation commitments, Table 1.2 sets out the project Environmental Action Plan – Actions required before start of construction (i.e. during detailed design stage or before construction), whilst Table 1.3 sets out the project Environmental Action Plan – Actions required during construction and includes commitments related to monitoring.</p> <p>As set out in paragraph 2.3.5 of the Applicants Comments on Elm Corner Resident Group Deadline 6 submission [REP7-010] and previously set out in the Applicant's Deadline 2 Submission - 9.19 Applicant's Comments on Written Representations [REP2- 014], under Requirement 3 of the dDCO [REP6-003] a Construction Environmental Management Plan (CEMP) is to be approved by the Secretary of State, following consultation with the relevant planning authority before the authorised development, or the relevant part of it, may commence. Measures included in the CEMP will include measures to control noise, air and dust, and light pollution. The documents setting out these measures will be placed in the public domain via the project website and will be shared with the Elm Corner Residents Group when they are available.</p> <p>As set out in Applicant's Response to Interested Parties Comments on the Examining Authority's Third Written Questions [REP8-047], with regards to continuing engagement with Elm Corner residents, Highways England draws the attention of the Examining Authority to section 3.15.5 of Elm Corner Residents Group's (ECRG) Response to Examining Authority's Third Written Questions and request for information [REP7-031]. ECRG note in 3.15.5 that Highways England has confirmed in its Comments on Interested Party Responses to ExQ2 [REP6-013], section 2.4.4, that Highways England will engage with ECRG.</p>	No comment
12. Socio-Economic Impacts				
4.12.2	RHS and Applicant	<p>At page 26 of REP8-054 the RHS states that in terms of its second attitudinal survey [REP6-024] 'Question 8 was designed to examine the impact of journey time impacts for trips travelling to and from the south on the A3'.</p> <p>a) If the RHS's intention was as stated in the above quotation, then to avoid the around two thirds of the respondents travelling to and from RHS Wisley with origins other than those to the south of the Gardens and who would not experience 'the largest increase in journey times' [Page 27 of REP8-054] answering Question 8, then should Question 8 not have included a filter requiring this question only to be answered by respondents who identified options 3 and 4 in Question 5 as the route that they followed?</p> <p>b) Is it reasonable for Hatch Regenris to have drawn the conclusions that it has from section 3 onwards in its Report [REP8-054], given that in answering Question 8 around two thirds of the survey respondents might have thought they would experience a delay that they would not be subject</p>	<p>Highways England's response: a) Yes, as stated in REP07-008 para 2.3.8 and REP09-003 para 5.1.1. b) No, as stated in REP07-008 para 2.3.8.</p>	No change to RHS response in REP10-025.

No	Question to:	Question	HE / NE / SWT response	RHS Deadline 11 response to HE / NE / SWT response
		to and would not know the number of visitors who might be subject to the largest increases in journey times and/or distances? Please justify your response.		
4.2.13	RHS and Applicant	Please comment on whether the Questionnaire should have contained a question regarding real or perceived improvements in road safety as a result of the Proposed Development in order to assess attitudes of visitors towards any such improvements.	<p>Highways England's response: Highways England's view is that the survey should have contained a question regarding real or perceived improvements in road safety as a result of the Proposed Development. It is evident from the current high accident rate on this section of the A3 that the existing exit is dangerous and that by removing this exit, accidents will reduce.</p>	As set out in RHS response in REP10-025, there was no requirement for additional questions on road safety within the questionnaire and the RHS has demonstrated (REP5-053 - item 4) that Highways England's analysis of current accidents rates on the A3 inaccurately attributes the causes of accidents to traffic joining the A3 from Wisley Lane.
4.12.14	RHS and Applicant	<p>In Q8 to Q10 of the Hatch Regeneris Survey 2 Construction Phase questionnaire [REP6-024] respondents are specifically asked about perceived construction impacts. However, the Hatch Regeneris report also acknowledges in REP1-039 that construction of the RHS Alternative Scheme would give rise to a similar level of disruption of the local highway networks to the Proposed Development. Does the RHS still consider that both schemes would have similar impacts during their construction phases?</p> <p>If so, what do the RHS and the Applicant consider to be the socio-economic impacts that can be drawn from this, having particular regard to the RHS Alternative Scheme?</p>	<p>Highways England's response: Highways England does not accept that there would be any adverse socio-economics impacts to RHS arising from the construction of the DCO Scheme or the RHS Alternative.</p>	<p>The RHS provided its full response in REP10-025.</p> <p>The RHS consider Highways England's response to be flawed. If there were to be no adverse socio-economic impacts during the construction phase it would mean that journey times to and from the Garden would remain unchanged. Any increase in journey time has an associated economic cost, as defined within the Department for Transport Transport Analysis Guidance. Whilst Highways England have not provided traffic management plans at this stage, they have indicated that speed restrictions will be in place through the roadworks and included this within their traffic modelling of construction scenarios (REP2-011). On this basis, journeys times along the M25 and A3 through the roadworks can only be slower and will result in socio-economic impacts.</p>
4.12.5	RHS and Applicant	The RHS has provided predictions of economic impact based on an estimated loss of visitors to Wisley as a result of the construction and operation of the Proposed development. How would such figures compare with the overall estimated benefits that may occur due to reductions in travel times for all users of this part of the A3/M25 as a result of the Proposed Development.	<p>Highways England's response: Highways England has estimated the total Present Value of Benefits (PVB) of the DCO Scheme for all users to be £388,540,000 at Level 1* and £439,885,000 at Level 2* (in 2010 prices and discounted) as reported in Table 4.1 of the Planning Statement and Schedule of Accordance with National Policy Statement [APP-133]. The difference between Level 1 and Level 2 benefits is related to reliability and outputs change in imperfectly competitive markets**. The majority of the scheme benefits are accrued at Level 1 and are associated with the transport user benefits and reduction in accidents. Comparing the scheme benefits with the cost, the scheme presents a Benefit Cost Ratio (BCR) of 2.22 (Table 4.5 of APP-133) and provides a High Value for Money investment based on DfT Value for Money (VfM) categories.</p> <p>Based on an estimated loss of visitors to RHS Wisley, RHS has predicted an economic impact (of the proposed development) of up to -£99.2m in 2020 discounted prices (roughly equating to -£59m in 2010 discounted prices; which is the price based used in Highways England's documentation). This includes a wider economic impact of -£70.4m (around -£42m in 2010 prices, discounted) and a transport user impact of -£28.8m (around -£17.2m in 2010 prices, discounted). Highways England continues to disagree with these estimates provided by RHS. In Highways England's opinion, the economic impact methodology, assumptions, surveys and the way RHS has applied these to assess the Economic Impacts of the DCO scheme is inappropriate. The multiple flaws with the RHS survey including the biased questionnaire and lack of alternative trade-off scenarios raise inconsistency in the analysis and overestimate any stated reduction in anticipated frequency of future visits driving the adverse economic impacts claimed. Furthermore, there is no evidence to suggest that any forecast reduction in visitors to RHS Wisley, which Highways England does not accept will occur, will lead to net loss at the national level in terms of consumer spending in the economy and the knock-on impacts (tier 2 and tier 3 impacts as termed in both aforementioned RHS reports) on their suppliers and suppliers' employees.</p> <p>The disputed wider economic impact estimated by RHS Wisley (around -£42m in 2010 prices, discounted) is not directly comparable with the additional Level 2 benefits estimated by Highways England, in line with TAG Unit A2.2 (May 2018), where only the benefits associated with increased output in imperfectly competitive markets was considered. Should Highways England have considered other benefits such as relating to Gross Value Added (GVA) and wider impact benefits for other developments that the DCO scheme would unlocked, then not only would the Scheme's benefits be considerably higher, but they could also compare with those generated for RHS.</p> <p>Based on an estimated loss of visitors to RHS Wisley, RHS has predicted a transport user impact of -£2.9m (roughly equating to -£1.7m in 2010 discounted prices) and £-25.9m (roughly equating to -£15.4m in 2010 discounted prices) during the construction and operational phase respectively. Highways England continues to disagree with RHS' estimates and argues that the methodology and analysis undertaken by RHS overestimates any impact of the DCO scheme on visitors to RHS Wisley. The economic appraisal carried out by Highways England in line with</p>	<p>The RHS provided its full response in REP10-025.</p> <p>The RHS consider Highways England's response to be flawed. If there were to be no adverse socio-economic impacts during the construction phase it would mean that journey times to and from the Garden would remain unchanged. Any increase in journey time has an associated economic cost, as defined within the Department for Transport Transport Analysis Guidance. Whilst Highways England have not provided traffic management plans at this stage, they have indicated that speed restrictions will be in place through the roadworks and included this within their traffic modelling of construction scenarios (REP2-011). On this basis, journeys times along the M25 and A3 through the roadworks can only be slower and will result in socio-economic impacts.</p>

No	Question to:	Question	HE / NE / SWT response	RHS Deadline 11 response to HE / NE / SWT response
			<p>TAG represents a net benefit (PVB) across all users and already includes any disbenefits to transport users during the construction and operational phase of the DCO scheme. The transport user benefits, which form a significant proportion of the Level 1 benefits, are £322,903,000 (2010 prices, discounted), as reported in Table 4.1 of the Planning Statement and Schedule of Accordance with National Policy Statement [APP-133]. The transport user benefits considers impact during construction and maintenance of the DCO scheme for all users and thus, any construction impact on visitors to RHS Wisley will be captured within this as well as some of the operational impacts too and it would not be appropriate to simply subtract the RHS figure from the much larger Highways England figure.</p> <p>It is worth noting that the RHS garden is expected to generate approximately 626,650 trips annually [REP2-011: Section 2.2.1], which accounts for approximately 0.5% of the 111m trips [REP2-011 Table A1] expected to be impacted by the scheme and M25 j10. The analysis presented by RHS is based on an evaluation of impact on transport user to/from the RHS Wisley Garden only and not on the overall changes in traffic volume, journey time and speed observed across the network as presented by Highways England.</p> <p>* Level 1 benefits include impacts associated with the transport network such journey time savings, delays during construction and future maintenance, reduction in accidents benefits and environmental impact.</p> <p>Level 2 considers all Level 1 benefits as well as incident delay impacts and output change in imperfectly competitive markets.</p> <p>** Imperfectly competitive markets is defined in TAG Unit A2.1 as "in most likely if businesses benefiting from the transport improvement have large shares of their markets".</p>	
13. Traffic, transport and road safety				
4.13.1	Applicant and RHS	<p>Please provide your respective precise calculations for any journey time savings for visitors to RHS Wisley when the full 'RHS Alternative', i.e. the presence of south facing slip roads at the Ockham Park junction and a left turn from Wisley Lane, is compared with the submitted Proposed Development for the AM and PM peaks and the Interpeak periods as defined in the Applicant's Transport Assessment Report [APP-136]. In responding to this question, the ExA is expecting to be provided with:</p> <ul style="list-style-type: none"> • confirmation of which data set or sets that have been used; • a written summary of any assumptions made; • the step by step methodology for undertaking the calculations; and • the actual worked calculations. 	<p>Highways England's response:</p> <p>A comparison of journey times to and from RHS Wisley for the Do-minimum, Do-something and the RHS Alternative scenarios is presented in the table below. The journey times have been taken from the respective strategic traffic models.</p> <p>For the RHS Alternative, the journey times have been taken from the strategic model run for the Scheme with south-facing slips at Ockham Park junction, with a manual adjustment made for journeys to the A3 north and M25 to account for the left turn from Wisley Lane on to the A3 included in the RHS Alternative arrangement. This has been calculated by subtracting the journey times covering the Wisley Lane diversion/extension from A3 to Ockham roundabout, the Ockham roundabout clockwise from Wisley Lane junction to A3 northbound on-slip, the A3 northbound on-slip from Ockham roundabout and the A3 northbound from Ockham on-slip to Wisley Lane from the RHS journey times to the A3 north and M25 for the DS scenario.</p> <p>The journey times subtracted from the DS journey times for RHS Wisley to the A3 North of J10, to the M25 ACW and M25 CW are 3.9, 3.5 and 3.5 minutes for the AM, Inter-peak and PM peak periods respectively. All these journey times have also been taken from the strategic modal run for the Scheme with south-facing slips at Ockham Park junction.</p>	See RHS response to REP10-004 (Journey Times) REP11-xxx para 3 and Table 1.

No	Question to:	Question	HE / NE / SWT response	RHS Deadline 11 response to HE / NE / SWT response
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Direction	Period	Journey times (mins)	Change in journey times (mins)					
			DM	DS	RHS Altn.	DS vs DM	RHS Altn. vs DM	RHS Altn. vs DS
To RHS	A3 N of J10	2022 AM	4.0	3.7	3.7	-0.3	-0.3	0.0
		2022 IP	3.6	3.4	3.4	-0.2	-0.2	0.0
		2022 PM	4.2	3.8	3.8	-0.4	-0.4	0.0
	M25 CW	2022 AM	8.3	4.5	4.5	-3.8	-3.8	0.0
		2022 IP	5.3	4.3	4.3	-1.0	-1.0	0.0
		2022 PM	7.3	4.0	4.0	-3.3	-3.3	0.0
	M25 ACW	2022 AM	6.9	5.2	5.2	-1.7	-1.7	0.0
		2022 IP	5.3	4.7	4.7	-0.6	-0.6	0.0
		2022 PM	6.4	5.3	5.3	-1.1	-1.1	0.0
	A3 South (not via Ripley) ¹	2022 AM	5.4	11.7	8.0	6.3	2.6	-3.7
		2022 IP	5.1	10.7	7.5	5.6	2.4	-3.2
		2022 PM	5.4	11.5	7.7	6.1	2.3	-3.8
	A3 South (via Ripley) ²	2022 AM	9.3	11.5	N/A	2.2	N/A	N/A
		2022 IP	8.4	9.9	N/A	1.5	N/A	N/A
		2022 PM	8.7	10.0	N/A	1.3	N/A	N/A
	A3 South ³	2022 AM	5.4	11.5	8.0	6.1	2.6	-3.5
		2022 IP	5.1	9.9	7.5	4.8	2.4	-2.4
		2022 PM	5.4	10.0	7.0	4.6	1.6	-3.0
From RHS	A3 north of M25 J10	2022 AM	3.0	4.7	0.8	1.7	-2.2	-3.9
		2022 IP	1.8	4.3	0.8	2.5	-1.0	-3.5
		2022 PM	1.9	4.7	1.2	2.8	-0.7	-3.5
	M25 CW	2022 AM	3.4	4.2	0.3	0.8	-3.1	-3.9
		2022 IP	2.2	3.9	0.4	1.7	-1.8	-3.5
		2022 PM	2.8	4.9	1.4	2.1	-1.4	-3.5
	M25 ACW	2022 AM	4.0	6.0	2.1	2.0	-1.9	-3.9
		2022 IP	3.1	5.4	1.9	2.3	-1.2	-3.5
		2022 PM	3.1	5.9	2.4	2.8	-0.7	-3.5
	A3 South (not via Ripley) ¹	2022 AM	12.2	12.6	6.6	0.4	-5.6	-6.0
		2022 IP	9.8	11.4	6.4	1.6	-3.4	-5.0
		2022 PM	10.8	12.4	6.6	1.6	-4.2	-5.8
Return to & from RHS	A3 South (via Ripley) ²	2022 AM	16.8	11.0	N/A	-5.8	N/A	N/A
		2022 IP	13.7	10.1	N/A	-3.6	N/A	N/A
		2022 PM	15.1	10.6	N/A	-4.5	N/A	N/A
	A3 South ³	2022 AM	12.2	11.0	6.6	-1.2	-5.6	-4.4
		2022 IP	9.8	10.1	6.4	0.3	-3.4	-3.7
		2022 PM	10.8	10.6	6.6	-0.2	-4.2	-4.0
Return to & from RHS	A3 north of M25 J10	2022 AM	7.0	8.4	4.5	1.4	-2.5	-3.9
		2022 IP	5.4	7.7	4.2	2.3	-1.2	-3.5
		2022 PM	6.1	8.5	5.0	2.4	-1.1	-3.5
	M25 CW	2022 AM	11.7	8.7	4.8	-3	-6.9	-3.9
		2022 IP	7.5	8.2	4.7	0.7	-2.8	-3.5
		2022 PM	10.1	8.9	5.4	-1.2	-4.7	-3.5
	M25 ACW	2022 AM	10.9	11.2	7.3	0.3	-3.6	-3.9
		2022 IP	8.4	10.1	6.6	1.7	-1.8	-3.5
		2022 PM	9.5	11.2	7.7	1.7	-1.8	-3.5
	A3 South (not via Ripley) ¹	2022 AM	17.6	24.3	14.6	6.7	-3.0	-9.7
		2022 IP	14.9	22.1	13.9	7.2	-1.0	-8.2
		2022 PM	16.2	23.9	14.3	7.7	-1.9	-9.6
	A3 South (via Ripley) ²	2022 AM	26.1	22.5	N/A	-3.6	N/A	N/A
		2022 IP	22.1	20.0	N/A	-2.1	N/A	N/A
		2022 PM	23.8	20.6	N/A	-3.2	N/A	N/A
A3 South ³	2022 AM	17.6	22.5	14.6	4.9	-3.0	-7.9	
	2022 IP	14.9	20.0	13.9	5.1	-1.0	-6.1	
	2022 PM	16.2	20.6	13.6	4.4	-2.6	-7.0	

1. All RHS traffic to and from A3 south routing via Ripley in both DM and DS scenarios.
2. All RHS traffic to and from the A3 south routing via A3 in DM, via J10 in DS and via Ockham south-facing slip for RHS Altn.

No	Question to:	Question	HE / NE / SWT response	RHS Deadline 11 response to HE / NE / SWT response
			3. Comparison of DM and RHS Altn. to DS scenario with all RHS traffic to and from A3 south routing via Ripley as indicated by the traffic modelling.	
4.13.2	Applicant	With respect to application proposed change 3 (works to the A245) and in light of the representations made by SCC in REP7-025 (item 3.1.3.3.2) please explain why the originally proposed A245-A3 northbound on-slip free flow lane does not forms part of the works encompassed by proposed change 3	<p>Highways England's response: Highways England addressed this in response 3.1.3 of REP08-047. The text is summarised below:</p> <p>A detailed evaluation of the free-flow left turn lane from the A245 eastbound to the A3 northbound on-slip at the Painshill junction indicated that it would deliver insufficient benefits, in terms of journey time savings and operational performance of the junction. Removing the free-flowing (jet) lane will have a minimal impact on journey times and the operational performance of the road network compared to the DCO Scheme as originally applied for. It is on this basis that the amendment to the DCO Scheme has been made to remove it.</p>	No comment
15. Content of the draft Development Consent Order (dDCO)				
4.15.2	Applicant	Further to your answer to the ExA's Third Written Question 3.15.13, justify why you consider a 5 year maintenance period, as proposed in R6(5), to be sufficient? In answering this question please refer to the characteristics of the tree and shrub planting you propose, the local growing conditions and provide evidence of other cases in the locality where such a time period has allowed for a similar planting scheme to become successfully established.	<p>Highways England's response: The planting proposed as part of the scheme will predominantly consist of native tree species of the type that are already established and common in this area. A range of typical species is set out in para 9.9.8 of Chapter 9 of the Environmental Statement [APP-054]. As well as established locally occurring species, we know that they are robust and well suited to existing conditions.</p> <p>A 5 year maintenance period for new planting is a typical industry standard duration for the establishment of new woodland planting.</p> <p>All the planting schemes on the M25 have had maintenance periods of 5 years or less in some cases.</p> <p>The Scheme includes a comprehensive package of management operations funded by Highways England that will take place after the initial 5-year maintenance period to ensure the continued successful establishment of planting [APP-105 and APP-106]. Such a management package is in excess of normal practice on highways schemes and has been developed to give confidence to stakeholders that there is a long-term commitment to the mitigation measures propose</p>	No comment
4.5.13	Applicant	Please comment on Surrey County Council's request in [REP7-024] that in R11 of the dDCO [REP8-013] consultation with the County Council is specifically added as the definition of 'relevant planning authority' only includes EBC and GBC	<p>Highways England's response: Highways England has considered Surrey County Council's request to be added as a named consultee in relation to requirement 11 (Buxton Wood Environmental Mitigation Area). As set out at 1.2.1 of the statement of common ground as submitted at deadline 8 [REP8-030], Highways England does not consider that it is necessary for SCC to be a named consultee in respect of this requirement as SCC is neither the land owner nor the planning authority for the proposed Buxton Wood Mitigation Area. Highways England does not have a firm view on the matter and would be happy to reconsider the position should Surrey County Council explain in more detail why it considers that it would be an appropriate consultee in respect of this requirement.</p>	No comment
4.15.4		<p>a) Please provide a copy of the plan identifying the parts of the Proposed Development that you expect would be for SCC to maintain, as referred to in section 1.4.1 of the version of the SoCG between yourself and SCC submitted at Deadline 8 [REP8-030]. If any descriptive text is available that is intended to accompany the previously mentioned plan, then please submit this text at Deadline 10 or provide a date by when it will be available to be submitted as an Examination document.</p> <p>b) Additionally, please identify the parts of the Proposed Development that you and SCC are discussing as potential candidates for being defined under the terms of the dDCO as 'Non-standard Highway Assets' for which maintenance commuted sums might be paid, as referred to in section 1.5.3 of REP8-030.</p>	<p>Highways England's response: Please see enclosed copy of drawing HE551522-ATK-GEB-XX-SK-ZH-000001_C01 (document reference TR010030/9.110 submitted at Deadline 10), which shows those areas of the scheme that it is expected Surrey County Council (SCC) will maintain. It should be noted that some of the areas shown are already maintained by SCC. This drawing is at high level and more detailed drawings are in the course of production, which will be available by Deadline 11.</p> <p>The expression 'Non-standard Highways assets' was taken from the A303 Sparkford to Ilchester Dualling dDCO Schedule 8 ,Part 4 Paragraphs 30 and 46 (Their reference REP8-004).</p> <p>Under paragraph 30 "Non-standard Highway Assets" are defined as "highway assets which the local highway authority become responsible for maintaining and which incur maintenance costs beyond the normal costs of maintaining the public highway having regard to the lists of standard and non-standard assets set out in paragraph 45(2) of this Part of this Schedule"</p> <p>Paragraph 46(2) contains a list of Standard highway assets and Non-standard highway assets. (The reference to paragraph 45 in paragraph 30 of the dDCO is incorrect). Paragraph 46(2)(b) lists the following as Non-standard Highway assets: (i) Any culvert, bridge, retaining wall or other structure (ii) Special features such as noise fencing, vehicle restraint barriers, pedestrian guard railing, knee rails and fences, gates (iii) Landscaping features such as planting, trees, hedging (iv) Sustainable Drainage Systems ("SuDS") or non-standard highway drainage features such</p>	No comment

No	Question to:	Question	HE / NE / SWT response	RHS Deadline 11 response to HE / NE / SWT response
			<p>as: (aa) Flow control devices and attenuation storage (bb) SuDS including maintenance of any landscaping (cc) Oil or petrol interceptors including the disposal of contaminated waste (dd) Pumping stations and their energy charges (ee) Watercourses and swales.</p> <p>Discussions are on-going between Highways England and SCC as regards the appropriate extent of any commuted sums to be paid by Highways England to SCC, with this definition acting as a point of reference.</p>	
16. Compulsory Acquisition (CA)				
4.16.2	Applicant and SCC	<p>In the event of a scheme of accommodation works, as referred to in the preceding question, being agreed between you and assuming that the delivery of such works would not be dependent upon a 'financial compensation settlement', please advise what mechanism or mechanisms might be used to delivered these works.</p>	<p>Highways England's response: The current draft of the side agreement between Highways England and Surrey County Council provides that the parties will use reasonable endeavours to enter into an agreement to reconfigure the Ockham Bites car park area.</p> <p>There are no powers available to Highways England in the dDCO to achieve this and so agreement will turn upon Highways England having the necessary land rights to enter upon the land to undertake the work, there being agreement upon precisely the works to be done, the financial arrangement and any relevant consents being obtained. The financial arrangement would take into account the compensation entitlement that arises from Highways England acquiring or using land within the relevant site area, including any injurious affection of land not taken. It would also take into account that Highways England's contractor will have a workforce and equipment available in the area in connection with the main works.</p>	No comment
4.16.3	Applicant	<p>In response to the ExA's third written question 3.13.5 concerning forward visibility on the A245 both you, on page 39 of REP7-004, and SCC [page 20 of REP7-025] have stated that the A245 forms part of the Local Road Network and that SCC is therefore the highway authority, as per the details shown on sheets 8 and 9 of APP-008/REP8-005.</p> <p>However, SSC's and your answers to question 3.13.5 do not appear to be consistent with the content of the Book of Reference (BoR), most particularly what is stated in APP-025, REP5a-005 and REP8-016, for plot 8/36. Within the BoR in column 5 (Occupiers) for plot 8/36 Highways England is identified as being the 'highway authority' and there is no mention of SCC being a highway authority occupier of plot 8/36. That by contrast is inconsistent with how plot 1/5 is handled in the BoR, for which both you and SCC are identified as being owners and SCC is listed as the occupier.</p> <p>Please clarify whether there has been an error in the drafting of the BoR with respect to the identification of the highway authority occupier for plot 8/36. If there has been an error in the drafting of the BoR and/or any of the related submitted application plans, then that error would need to be rectified. Please advise how you would address any error that may be present in the BoR and/or the affected application plans.</p> <p>The Applicant is requested to review the entire BoR and advise the ExA whether the BoR and any of the submitted application plans are or are not free from any drafting errors concerning the identification of the correct highway authority. Should any drafting errors be identified then the Applicant will need to rectify any such errors through the submission of an amended version of the BoR and/or any revised plans as necessary.</p>	<p>Highways England's response: Following further review, Highways England confirms that Highways England is correctly identified in the Book of Reference as owner of plot 8/36. SCC should be shown in column 3 (Owners or reputed owners) in the Book of Reference Table 1 as highway authority. Highways England has undertaken a plot by plot check of all other plots in that area and locations where similar issues may arise. This change will be included in the Book of Reference scheduled to be delivered at Deadline 11.</p>	No comment
4.16.4	Applicant and SCC	<p>The ExA notes the answers that the Applicant [REP7-004] and SCC [REP7- 025] have respectively provided in response to third written question 3.16.6 [PD-016]. Question 3.16.6 concerning the progress being made to complete the exchange of the Special Category Land (SCL) associated with the original construction of the M25 (the historic exchange). In the light of the responses you have given to question 3.16.6, please comment on:</p> <p>a) Whether or not, for so long as the land affected by the historic exchange has not been acquired by the Applicant from SCC, the latest version of the BoR [REP8-016] accurately reflects the extant land ownership position for the historic exchange land, notwithstanding the fact that the Applicant is</p>	<p>Highways England's response: a) Highways England takes the opportunity to clarify the statement made in response to question 3.16.6. Whilst it is correct that some of the land is currently within the ownership of Surrey County Council, not all of the historic common/open space land remains in the ownership of Surrey County Council as may be implied from the response to question 3.16.6. The position is correctly set out at paragraphs 7.2.14 to 7.2.20 of the Statement of Reasons [APP-022]. The Book of Reference correctly records that plot 5/18a is vested in Highways England and is therefore correct in that regard. Whilst ownership of plot 5/18a has vested in Highways England, its deregistration as common land has not been completed on the basis that the exchange land which should have been given in exchange for its acquisition has not yet been vested in Surrey County Council. Accordingly, Highways England has not sought powers of compulsory acquisition over plot 5/18a in order to avoid the risk of engaging special parliamentary procedure</p>	No comment

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		<p>the highway authority for some of it. For example, with respect to plot 5/18a, a plot which the DCO, if made, would authorise various works being undertaken to the M25, the BoR records the Applicant as being the owner. That entry, however, is inconsistent with the Applicant stating in response to question 3.16.6 '...that whilst Highways England is the highway authority for the M25, it does not own all of the land on which the motorway is situated, which remains in the ownership of Surrey County Council.' Should it be considered that the BoR does not accurately record the ownership position in this regard then the Applicant is requested to advise how it would address this matter.</p> <p>b) Whether or not, there may be any other landowners other than SCC of the historic exchange land, given that SCC has advised that of the around 20 plots in question '... many of which are unregistered.' SCC is requested to advise when it expects the Title investigations it is undertaking will be completed.</p> <p>c) In the event the SoS is minded to make the DCO, whether or not, the SoS should treat the affected land as being subject to the Special Parliamentary Procedures under the provisions of the PA2008, for so long as the land affected by the historic exchange has not been acquired from SCC.</p>	<p>under section 131 Planning Act 2008. Further information about the vesting process in relation to the exchange land is set out in b) below.</p> <p>b) This is a matter for SCC to confirm, but HE's understanding is that SCC is the owner of the remaining historic common / open space land which should be in Highways England's ownership as it now forms part of the strategic highway network. Highways England is negotiating with SCC for the transfer of that land to Highways England, with a consequential transfer from Highways England to SCC of the exchange land that should have been given in exchange for the acquisition of the historic special category land pursuant to the 1979 and 1982 CPOs. The completion of these transfers will enable SCC as commons registration authority to amend the commons register to reflect the position as it should be had the 1979 and 1982 CPOs been implemented fully as regards special category land and exchange land.</p> <p>c) As Highways England has not sought powers of compulsory acquisition over the historic common land (which is shown coloured orange on the land plans), sections 131 and 132 Planning Act 2008 are not engaged and therefore there is no need for the Secretary of State to treat the acquisition of the land as being subject to special parliamentary procedure in the absence of one of the exceptions provided for in those provisions. The ExA's attention is referred to paragraphs 7.2.16 to 7.2.20 of the Statement of Reasons which explains the position in this regard.</p>	