APPENDIX 3 to Deadline 3 Overview – REP3-xxx
RHS response to REP2-022 Deadline 2 Submission - 9.27 Applicant's Response to RHS comments on Air Quality

HE Response at Deadline 2 (REP2-022)	RHS Response
2.1 Effect of Excess Distance Travelled to Access RHS Wisley 2.1.1 The results of the air quality assessment that are provided in the ES [APP-050] and tables 5.7.10 and 5.7.12 of APP-080 are based on the data provided by the traffic model. The model assumes that with the Scheme, all traffic travelling to and from RHS Wisley from the south travels through Ripley rather than the longer signposted route via the A3 and M25 junction 10. The traffic data used in the assessment was based on the more conservative design fix 2 (DF2), rather than that which was revised for design fix 3 (DF3), as documented in paragraph 5.5.12 of APP-050.	It is accepted that for the ES, HE modelled all RHS Wisley traffic to and from the south as passing through Ripley. This is one worst-case assumption. The other worst-case assumption is that all this traffic would follow the signposted route and use the A3 up to junction 10, passing by the SPA. This was not modelled in the ES but has since been modelled with the results presented in REP2-022. The impacts arising from both these worst-case assumptions would be avoided with the RHS Alternative Scheme.
2.1.2 However, an assessment has been carried out to determine the changes in NOx concentrations and nitrogen deposition rates within the Thames Basin Heaths SPA assuming that all the traffic which is currently travelling via Ripley to and from the Ockham junction to RHS Wisley would use the signposted route, based on the traffic data provided in the Transport Assessment Supplementary Information Report (Volume 9.16 submitted to the Examining Authority at Deadline 2). As documented in the response to point 3.1. of REP1-038, this is an unlikely scenario, as it is considered that some of the traffic will use the shorter route through Ripley, as it does now. The results for the four transects in proximity to the A3 are provided in Appendix A. The traffic data for these movements were only available for DF3, hence the original assessment for the receptors in the SPA using the DF2 traffic was additionally revised to provide the results for DF3. The results have also taken into account the revised nitrogen deposition velocities as discussed in the point below. This shows that with the additional traffic, the largest change in nitrogen deposition rates would be an increase of 0.15 kgN/ha/yr at receptor point R149, located 5m east of the A3.	HE accepts that it had not modelled the worst-case for traffic on the A3 north of Ockham junction, which is that traffic would follow the signposting to RHS Wisley. It is this traffic that will pass the SPA, and the published ES has therefore not covered the impact of this traffic. Results are now presented by HE for the worst-case assumption that all RHS Wisley traffic to and from the south follows the signposted route in REP2-022 for N deposition, but not for NOx. They show that N deposition would be up to 1.5% higher (Appendix A in REP2-022) than the values presented in the ES. If ammonia had been included in the calculation, then the N deposition would be up to 3% higher. The RHS Alternative Scheme would remove this adverse impact on the SPA.

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HE Response at Deadline 2 (REP2-022)	RHS Response
2.1.3 Table 5.7.11 of APP-080 shows that the background nitrogen deposition rate used in the assessment for the Thames Basin Heaths SPA was 12 kgN/ha/yr in the opening year of 2022. As documented in paragraph 7.9.24 of APP-052, to reduce the measured species-richness of a lowland heath habitat by one species, an increase of 0.8 kgN/ha/yr is required where the site has a background nitrogen deposition rate of 10 kgN/ha/yr. As the highest change of 0.15 kgN/ha/yr is below this level, there is unlikely to be any measurable effect on the reduction in species-richness as a result of the additional trips by the RHS Wisley traffic with the Scheme. Hence there would be no material effect within the SPA.	The data cited by HE from Table 21 of the Natural England Commissioned Report NECR210, have been used illogically to define the significance of impacts in the SIAA. Prof. Laxen has spoken to the author of the report NECR210, Dr Simon Caporn, who said that this table was not designed to be used as a basis for defining significance. The role of Table 21 is purely to show that as nitrogen deposition increases the species richness declines in a non-linear way, this being one of the adverse effects of additional nitrogen input to a habitat. Use of Table 21 is based on the argument that as long as the increase in nitrogen deposition represents the loss of less than 1 species then it is insignificant. This is illogical for at least two reasons. Firstly, using the example of a deposition rate of 10 KgN/ha/yr, the table shows that the addition of 0.8 KgN/ha/yr would be associated with the loss of 1 species, whereas, at 20 KgN/ha/yr the loss of 1 species would arise from the addition of 1.7 KgN/ha/yr. The HE has thus implied that the more polluted the site is above the critical load, the more additional pollution can be added without it being a significant increase. This is not consistent with the need to reduce nitrogen input to a habitat to restore conditions where the critical load is being exceeded, which would be made that much harder the more polluted he site is. Secondly, this approach does not recognise whether or not the site in on the tipping point whereby a very small increase in nitrogen deposition might cause the loss of a species. It is, therefore, the professional view of Prof. Laxen and Mr Baker that the criterion of loss of one species cannot be used as a significance criterion and its use in this way in the SIAA is not valid.

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HE Response at Deadline 2 (REP2-022)	RHS Response
2.2 Other Points 2.2.1 Other points that were raised under this heading included a discussion on the critical levels (paragraph 3.2 of REP1-041), and the alternative scheme proposed by RHS Wisley (paragraph 3.6 of REP1-041).	
2.3 Critical Levels 2.3.1 As documented at paragraph 5.3.3 of APP-050, the critical levels for the protection of vegetation are set in the UK regulations (SI 2010/1001). Schedule 1 of the regulations provides details of the location of sampling points where the critical levels apply, which are documented in paragraph 5.3.3 of APP-050. Paragraph 5.3.3 also notes that it's Natural England's policy to apply the critical level for nitrogen oxides as a benchmark to all designated conservation sites. There is therefore no contradiction to what has been stated at paragraph 2.2 at Appendix A2 of REP1-041.	The SIAA has not included an assessment against the critical level for NOx. The ExA therefore does not have the necessary information to provide an informed Appropriate Assessment.
2.4 Alternative scheme 2.4.1 The RHS Alternative includes south-facing slip roads for the A3 at Ockham roundabout. The south-facing slip roads at Ockham roundabout are not included in Highways England's Scheme, and have not been assessed. However, it would not be unreasonable to assume that the effect on the Thames Basin Heaths SPA would be similar to that assessed in the ES, as both the Alternative Scheme and the Scheme as assessed route traffic from the south to Ockham Park junction via south facing slips (Alternative scheme) or via Ripley (Scheme) and not via a u-turn movement at M25 j10.	This hinges on what people will do in practice. The RHS Alternative Scheme will ensure that neither the impacts on the SPA nor the impacts on Ripley would arise. This will not be the case with the DCO Scheme, as one or the other (the SPA or Ripley) or both would be affected by the DCO Scheme. The RHS Alternative Scheme will avoid these impacts and its adoption will therefore be beneficial in terms of reducing the effects of the scheme on residents in Ripley and the habitat within the SPA.

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HE Response at Deadline 2 (REP2-022)	RHS Response
2.5 NOx concentrations should be included in the SiAA 2.5.1 The method for the SiAA was carried out in agreement with Natural England, who requested information on the changes in nitrogen deposition rates, as noted in the minutes of 27 March 2018 and documented in 5.3 Habitats Regulations Assessment Annex B [APP-041]. The NOx concentrations for the Thames Basin Heaths SPA were calculated as part of the air quality assessment and are included in Table 5.7.10 of Appendix 5.7 [APP-080].	See comment on 2.3.1 above. There are exceedances of the critical level for NOx, but there is no assessment of the extent of this exceedance nor the implications.
2.6 NOx concentrations should be projected forward correctly 2.6.1 The ES notes that the assessment was undertaken in accordance with Highways England's Interim Advice Note (IAN) 170/12 v3 on the assessment of future NOx and NO2 projections on long term trends [paragraph 5.5.23 of APP-050]. Although not explicitly stated in the ES, the NOx concentrations were correctly projected forward using the LTTE6 approach, and the results are provided in Appendix 5.7 of APP-080.	It is accepted that the NOx concentrations in Table 5.7.10 of APP-080 have been projected forward using an LTTE6 approach. However, it is still the case that the rate of reduction predicted, for NOx, as shown in Table 2 of REP1-041, is higher than that of NO_2, which is contrary to the detailed survey of UK measurements over the period 2010 to 2018, as cited in paragraph 3.11 of REP1-041. Thus, it is still the case that the predicted future year NOx concentrations are likely to have been reduced too much, and this will affect the assessment of impacts. The assessment has therefore not followed a precautionary approach as is required for an HRA.

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2.7 Ammonia should be Included in the SiAA 2.7.1 There is no requirement for ammonia to be included in the air quality assessment given that it is not included in the Highways England DMRB guidance (HA207/07). As noted in paragraph 5.8 of the Department for Transport's National Policy Statement for National Networks (available at https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/387222/npsnn-print.pdf), the air quality assessment should be consistent with Defra's published future national projections based on future factors toolkit, and available at https://laqm.defra.gov.uk/review-andassessment/tools/emissions-factors-toolkit.html). The emissions factors toolkit provides emissions data for four pollutants: NOx, PM10, PM2.5, CO2 but not ammonia.	The calculations of Ndep have not included the contribution of ammonia from road traffic. As REP1-041 sets out in Appendix A4 starting at page 18, ammonia can make significant contribution to Ndep alongside roads (see in particular Figure 3 on page 22). These results are based on a comprehensive monitoring programme over two years across the Ashdown Forest SPA and show ammonia contributing over half of the Ndep in 2015-17. The evidence is that the nitrogen oxides emissions will decline with time but ammonia is likely to remain constant, thus the proportion of ammonia to nitrogen oxides in the Ndep will increase with time. On the basis of these results, the ammonia contribution in 2022 would be expected to be well above 50% and thus the Ndep results presented by HE would need to be more than doubled to account for ammonia. The inclusion of ammonia in the calculation of traffic contributions to Ndep is a feature of current modelling being carried out for local plans, for example by Wealden Council for impacts on the Ashdown Forest SAC, by Epping Forest Council for impacts on Epping Forest SAC and by Havant Council for impacts on various SACs and SPAs. It is insufficient to say that ammonia should not be included because the guidance does not say it should be. Professional judgement and current practice elsewhere clearly justify the need to include ammonia in Ndep calculations. It is therefore critical that ammonia from traffic is taken into account in the assessment presented to the ExA.

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HE Response at Deadline 2 (REP2-022)	RHS Response
2.7.2 Furthermore the Institute for Air Quality Management (IAQM)'s more recently published guidance "A guide to the assessment of air quality impacts on designated nature conservation sites", available at https://iaqm.co.uk/text/guidance/air-quality-impacts-on-nature-sites-2019.pdf, makes no explicit requirement to include ammonia within an air quality assessment, noting that the majority of emissions in the UK are from agriculture (paragraph D.6.1).	See response to 2.7.1 above.
2.7.3 Even if the changes in nitrogen deposition rates with the Scheme, using the revised nitrogen deposition rates as discussed in the point below (paragraph 2.8.1), and presented in Appendix B of this response were to be doubled, this would mean that the largest change would be 0.92 kgN/ha/yr at a location 5 m east of the A3 (receptor point R149). Although this change is above the 0.8 kgN/ha/yr threshold for a change in species-richness of a lowland heath habitat by one species, as discussed in the point above (paragraph 2.1.3) there are no qualifying features for the SPA in this area close to the A3 which acts as a buffer for the heathland (as documented in paragraph 7.4.4 of APP-043). The change would be below 0.8 kgN/ha/yr by 10 m east of the A3 (receptor point R150), with a change of 0.68 kgN/ha/yr.	The 0.92kgN/ha/yr is a 9.2% increase in the N deposition rate, which is well above the 1% used by Natural England to identify a 'likely significant effect' at the HRA screening stage. Furthermore, the calculations in Appendix B of REP2-022 do not include RHS traffic from and to the south following the signposted route via the A3 to junction 10. Appendix B of REP2-022 shows that this could increase N deposition by 1.5% at receptor R149, thus the total increase with the scheme could be around 10.7% at this receptor.
2.7.4 Therefore the contribution of ammonia does not materially affect the conclusion of the SiAA.	See comment above (2.1.3) in reference to loss of species.

2.8 The Ndep calculations should use appropriate deposition velocities 2.8.1 The air quality assessment was undertaken in accordance with the relevant Highways England DMRB guidance (HA207/07). However, since the ES (APP-050) was published, IAQM's 2019 guidance for air quality impacts on nature sites, as discussed in the point above, was issued recommending the use of AQTAG deposition velocities. The revised DMRB guidance (LA105) issued in November 2019 also advocates the use of these deposition velocities. The nitrogen deposition calculations that were presented in Table 5.7.12 in APP-080 for the transects within the Thames Basin Heaths SPA have been updated to include the latest information, and have used the nitrogen deposition velocity for forests, given that the majority of the transect points are in forested areas. As expected, with the revised deposition velocities the nitrogen deposition calculations are higher, and are provided in Appendix B. As discussed in the response to RHSRMCo.1, the largest change is 0.46 kgN/ha/yr which as noted in the responses above is considered unlikely to cause a measured reduction in species-richness of a lowland heath habitat. In addition, as explained in response 3.4 to Royal Horticultural Society Ecology and Habitats Regulations Assessment representation (REP1-038), there is a woodland buffer of at least 150 m between the road and the heathland where the qualifying species occur, and all changes in nitrogen deposition are contained within this woodland buffer. Therefore, the changes in air quality will not cause an adverse effect on the qualifying features of the SPA.	HE has accepted the advice of Prof. Laxen. This illustrates that it is not always appropriate to rely on the published guidance. The result is that N deposition rates will be much higher than the values presented in the ES (APP-080, Table 5.7.12). For example, Receptor 149 has a 2022 DS deposition rate of 16.22 kgN/ha/yr in the published ES (APP-080, Table 5.7.2), but it is now accepted by HE that this should be 25.45 kgN/ha/yr (REP2-022, Appendix B). The published HRA was thus based on incorrect deposition values. (This is without the addition of ammonia from traffic and the worst-case assumption that RHS Wisley traffic to and from the south will follow the signposted route along the A3 to junction 10, which would increase N deposition rates, as discussed in response to 2.7.3 above. The buffer argument used by HE does not stand up to scrutiny. Firstly, there is no legal basis for effectively downgrading those part of the SPA which are not in favourable condition and do not therefore support the interest features of the SPA. It is a fundamental tenet of the Birds Directive (Directive 2009/147/EC) that member states must take steps to ensure that degraded habitats are restored. *Article 3 states,* *1. In the light of the requirements referred to in Article 2, Member States shall take the requisite measures to preserve, maintain or re-establish a sufficient diversity and area of habitats for all the species of birds referred to in Article 1.* *2. The preservation, maintenance and re-establishment of biotopes and habitats shall include primarily the following measures:* *(a) creation of protected areas;*

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	(b) upkeep and management in accordance with the ecological needs of habitats inside and outside the protected zones; *(c) re-establishment of destroyed biotopes;* *(d) creation of biotopes.* From 2b it is clear that the coniferous forest within the site should be managed (in this case removed and converted to heathland) to improve the ecology of the site for the SPA birds. Indeed, removal of conifer trees is part of the current management of the site. This precise point was tested at a previous inquiry into Land south of Wallisdown Road, Poole, Dorset (Talbot Village Trust) APP/Q1255/V/10/2138124 (27 February 2012), in refusing an appeal the inspector stated that an appropriate assessment should '*take account of the potential for the restoration of the site to favourable conservation status, as opposed to taking the view that the proposed scheme would not have an effect because, as a result of the poor condition of the site the interest features are not present*'. Secondly, as highlighted above the extent of the increased nitrogen deposition has not been calculated correctly and the actual deposition arising from the scheme is likely to be substantially above that which is currently predicted by the HE. Therefore, even notwithstanding the need for restoration of the area within the buffer woodland back to heathland, significant effects may extend beyond the current extent of the so-called conifer woodland buffer.

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2.9 The in-combination Assessment for the SiAA should be carried out correctly. 2.9.1 The method for the appropriate assessment was agreed with Natural England, as noted in the minutes of 27th March 2018 and documented in 5.3 Habitats Regulations Assessment Annex B [APP-041]. The assessment takes into account traffic from other developments in the wider area, in addition to the Scheme, as documented in paragraph 5.11.3 of APP-050, and therefore correctly allows for in-combination effects.	An in-combination assessment requires the calculations of concentrations and deposition rates for three scenarios: (1) baseline with **no** additional traffic from other plans and projects and **no** Scheme traffic; (2) baseline **with** additional traffic from other plans and projects and **no** Scheme traffic; and (3) baseline **with** additional traffic from other plans and projects and **no** Scheme traffic. The (3) minus (2) becomes the **Scheme impact** and (3) minus (1) the **in-combination impact**. The assessment carried out by HE only presents the Scheme impact as defined above, (3) minus (2). No attempt has been made to carry out the calculations to allow an in-combination assessment as defined above, (3) minus (1). The need for this approach is evident in recent HRA assessments, including those carried out by Wealden District Council, Epping Forest District Council and Havant Borough Council for the HRAs for their Local Plans, which have all used the calculation procedure set out above at the appropriate assessment stage. They have also included ammonia from road traffic. The calculations for these three examples of recent assessments have been carried out by three different consultants: Air Quality Consultants, AECOM and Ricardo Energy & Environment.

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<table>
<tr><th>HE Response at Deadline 2 (REP2-022)</th><th>RHS Response</th></tr>
<tr><td>

3. Climate Change

3.1.1 The changes in distances travelled to and from RHS Wisley with the Scheme are documented in the Transport Assessment Supplementary Information Report Appendix C (Volume 9.16 submitted to the Examining Authority at Deadline 2). The additional CO2 emissions from traffic arriving from the A3 to the south using the signposted route to travel to and from RHS Wisley in the opening year (2022) have been calculated and are provided in Table 3.1 below. The emissions for the Do-Minimum (DM) and Do-Something (DS) scenarios are taken from Table 5.13 in the Environmental Statement [APP-050]. The difference in emissions between the two routes in the opening year is expected to be 546 tonnes per year. This represents 0.04% of the total emissions with the Scheme in the opening year, which can be considered a negligible amount. The key driver to reducing CO2 emissions will be through national policy measures, such as the move to zero emission vehicles.

Table 3.1: Estimated additional CO2 emissions (t/yr) as a result of traffic travelling to and from RHS Wisley

Scenario	CO2 t/yr
Signposted Route [1]	1,990
Through Ripley [2]	1,351
Difference [3] ([1]-[2])	+639
DM [4]	1,802,301
DS [5]	1,805,726
Change with DS [6] ([5]- [4])	+3,425
Difference as proportion of DS [3]/[5]	0.04

</td><td>

HE has now calculated the increased emissions that could arise from traffic accessing RHS Wisley to and from the south (their Table 3.1). The results show that the DS CO_2 emissions would be 4,064 t/yr higher than the DM if this traffic follows the signposted route along the A3. If the traffic were all to go through Ripley, this would be 639 t/yr lower (or 15.7% lower). The emissions would be expected to be lower still with the RHS Alternative Scheme (as the distances will be less than for the route through Ripley), thus the RHS Alternative Scheme would reduce the excess CO_2 emissions that the DCO Scheme would give rise to by more than 16%, which would be a significant reduction in the additional harmful emissions that arise with the DCO Scheme. This further illustrates the benefits of the RHS Alternative Scheme.

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RHS response to REP2-022 Deadline 2 Submission - 9.27 Applicant's Response to RHS comments on Air Quality

HE Response at Deadline 2 (REP2-022)	RHS Response
4. Impacts on Air Quality in Ripley **4.1 RHS Traffic Through Ripley Not Assessed** 4.1.1 The air quality assessment as presented in the ES (APP-050) is based on the data provided by the traffic model. The model assumes that with the Scheme, all traffic travelling to and from RHS Wisley from the south travels through Ripley rather than the longer signposted route via the A3 and M25 junction 10. The results at the receptors in Ripley therefore already take this additional traffic into account.	Accepted
4.2 Other Concerns About Air Quality Assessment in Ripley Receptors in Ripley 4.2.1 It is usual practice to include worst-case receptors in an air quality assessment. As documented in paragraph 3.13 of the DMRB (HA207/07), areas likely to experience higher-than-average concentrations, such as junctions, should be identified. The closest residential receptor to the High Street/ Newark Lane junction was therefore included in the assessment.	HE has accepted that it had not addressed worst-case receptors in Ripley. Receptor R59 used in the ES to represent Ripley had a 2015 NO_2 concentration of 16.7 $\mu g/m^3$ (receptor R59 in Table 5.7.1 in APP-080, page 34). Of the 6 receptors now used by HE to represent worst-case exposure in Ripley, 5 have concentrations above this value (see Table in 4.2.2 below).

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<table>
<tr><th>HE Response at Deadline 2 (REP2-022)</th><th>RHS Response</th></tr>
<tr><td>4.2.2 However, it is acknowledged that there are other receptors in Ripley which are closer to the kerb, although not in closer proximity to the junction. Nitrogen dioxide concentrations at residential receptors in the areas identified in REP1-041 along Newark Lane and High Street, have been modelled to determine the expected changes in annual mean nitrogen dioxide concentrations with the Scheme. These additional receptors are provided in Figure 4.1, and the results provided in Table 4.1. The largest change is expected to be a change of 0.9 µg/m3, classified as a small increase, at a receptor on the High Street (R6).
<table>
<tr><th>Receptor ID</th><th>X</th><th>Y</th><th>2015 Base Year</th><th>2022 DM</th><th>2022 DS</th><th>Change</th></tr>
<tr><td>R1</td><td>505144</td><td>156717</td><td>15.2</td><td>12.2</td><td>12.6</td><td>0.4</td></tr>
<tr><td>R2</td><td>505152</td><td>156747</td><td>18.3</td><td>14.9</td><td>15.3</td><td>0.4</td></tr>
<tr><td>R3</td><td>505158</td><td>156702</td><td>17.2</td><td>13.9</td><td>14.5</td><td>0.6</td></tr>
<tr><td>R4</td><td>505170</td><td>156718</td><td>18.3</td><td>14.9</td><td>15.5</td><td>0.6</td></tr>
<tr><td>R5</td><td>505353</td><td>156872</td><td>19.0</td><td>15.9</td><td>16.7</td><td>0.8</td></tr>
<tr><td>R6</td><td>505368</td><td>156879</td><td>19.1</td><td>15.9</td><td>16.8</td><td>0.9</td></tr>
</table>
</td><td>Something is seriously wrong with the HE's modelling in Ripley. The modelled 2015 NO_2 concentrations, which are now all close to the edge of the road, are all less than 20 µg/m^3. The measured concentrations at two locations in Ripley in 2016 were 29 and 34 µg/m^3. The modelling is clearly grossly under-estimating the concentrations. The model should be verified and adjusted against the monitoring data, which has not been done. If the model is underestimating, then this will also apply to the changes in concentrations with the DCO Scheme. This underestimation is probably by a factor of around 2. Thus, a change of 0.9 µg/m^3 with the Scheme (at R6) would become a change of 1.8 µg/m^3, which is a 4.5% increase (in relation to the objective of 40 µg/m^3). Very different from the 0.4 µg/m^3 or 1% increase shown for receptor R59 in the ES (Table 5.7.9 in APP-080, page 63).

The new assessment of impacts in Ripley should not be relied upon by the ExA.</td></tr>
<tr><td>4.2.3 These changes are based on traffic data from design fix 2 (DF2) which as documented in paragraph 5.5.12 of APP-050 were used as the basis for the air quality assessment, given that DF2 traffic data would provide more conservative results than the revised DF3 data, as a result of the changes in traffic being generally larger with DF2 than with DF3.</td><td>Noted</td></tr>
<tr><td>4.2.4 The change in traffic through Ripley with DF3 is markedly lower, with an expected increase in annual average daily traffic (AADT) through Ripley of 1073, compared to an increase in AADT of 2535 with DF2.</td><td>Noted</td></tr>
</table>

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4.2.5 With the revised DF3 traffic data, changes in pollutant concentrations at all receptors would therefore also be lower.	Noted
4.3 Presentation of Baseline Concentrations in Ripley 4.3.1 As Guildford Borough Council only started monitoring nitrogen dioxide concentrations in Ripley in July 2016 at two kerbside locations, monitoring data in Ripley were not available to verify the modelled base year of 2015. Measured concentrations at these sites, RP1 and RP2, are provided in Table 5.6.1 of APP-080, and show that in 2016, concentrations were 34 µg/m3 and 29 µg/m3 respectively, below the annual mean nitrogen dioxide objective of 40 µg/m3.	See 4.2.2 above
4.3.2 Even if the maximum change in nitrogen dioxide concentrations at a receptor in Ripley in the future opening year of 2022 (0.9 µg/m3 with DF2) was applied to the location of the monitored site with the highest concentrations (RP 1), a highly unrealistic situation, since concentrations would be lower both away from the road source, and in the future opening year as a result of policies to reduce emissions, the total concentration would be 34.9 µg/m3 which would still be below the objective of 40 µg/m3. It is therefore considered highly unlikely that there is the risk of a significant adverse effect as a result of the Scheme at receptors in Ripley.	See 4.2.2 above – the 0.9 $\mu g/m^3$ is likely to be too low. It is possible that the objective will not be exceeded in Ripley (once the modelling is corrected), but there are still effects on health arising from exposure to NO_2 below the objective and these would be increased with the HE Scheme. The RHS Alternative Scheme, on the other hand, will reduce these adverse effects.

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RHS response to REP2-022 Deadline 2 Submission - 9.27 Applicant's Response to RHS comments on Air Quality

HE Response at Deadline 2 (REP2-022)	RHS Response
4.4 Descriptors of Impacts 4.4.1 The air quality assessment was undertaken in accordance with the Highways England DMRB guidance (HA207/07) and relevant Interim Advice Notes (IANs), including IAN 174/13 which provides criteria for the magnitude of changes in pollutant concentrations, as documented in Table 5.3 of APP-050. There is no requirement whatsoever to use the IAQM descriptors of impacts provided in the IAQM planning guidance (available at https://iaqm.co.uk/text/guidance/airquality-planning-guidance.pdf), which clearly states at paragraph 1.4: "This guidance, of itself, can have no formal or legal status and is not intended to replace other guidance that does have this status. For example, …… for major new road schemes, Highways England has prepared a series of advice notes on assessing impacts and risk of non-compliance with limit values."	The views expressed by the Inspectors for the M4 Smart Motorway DCO are set out in Appendix A11 of REP1-041. This does not support the unequivocal use of the DMRB guidance for descriptors. If the Council was assessing the impacts of a local development on air quality in Ripley, it would expect the developer to use the IAQM descriptors of impacts, as these are recommended in the IAQM guidance for assessing planning applications. It is not clear why the same should not apply to a Highways England project, at least in addition results presented according to the DMRB guidance. (Note: DMRB guidance is now in LA 105 Air Quality, recently published by HE, but remains the same.). It is expected that there will be more impacts described as slight or moderate with the IAQM guidance, than is the case with the HE guidance. This would help the ExA have a more balanced view of the impacts of the DCO Scheme.