Horsham Local Plan Habitats Regulations Assessment

Air Quality Addendum

Horsham District Council

September 2024

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Quality information

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Glossary

Term	Meaning
NOx	Oxides of nitrogen. Term given to nitrogen oxide and nitrogen dioxide. These are two pollutants emitted from vehicle exhausts that are of relevance to both human health and the environment. In the latter this is primarily due to their role in nitrogen and acid deposition.
NH3	Chemical symbol for ammonia. Ammonia is an environmentally relevant pollutant emitted from agriculture (livestock and fertiliser) and also from some vehicle exhausts (particularly the catalytic converters of petrol cars). It is toxic to vegetation (including lichens and mosses) and is also a significant source of nitrogen.
Nitrogen deposition	Once NOx and ammonia are emitted, some is deposited from atmosphere as nitrogen. Nitrogen acts as a fertiliser and can therefore promote the growth of less desirable plants over the growth of desirable plants in the natural environment.
Acid deposition	Once nitrogen is deposited it contributes (along with deposition of sulphur dioxide which is not emitted from vehicle exhausts) to deposition of acid in the natural environment. This can have negative implications for vegetation.
Habitats Regulations Assessment (HRA)	The process of assessing compliance with the Conservation of Habitats and Species Regulations 2017 (as amended), with regard to impacts on internationally important wildlife sites including Special Areas of Conservation (SAC)
Special Area of Conservation (SAC)	An international designation to protect sites of European importance for their habitats and/or animals other than birds
In combination	HRA requires the consideration of impacts on SACs to be undertaken cumulatively with other plans or projects, rather than focussing entirely on the impacts of the specific plan or project in isolation. In this case it means there must be consideration of all sources of traffic growth, not just Horsham or Chichester Local Plans.
Ultra-low emission vehicles	A general term for all vehicles that do not operate using combustion engine technology and thus have no exhaust emissions, particularly electric vehicles.
Critical level	Concentrations of pollutants in the atmosphere above which direct adverse effects on receptors, such as human beings, plants, ecosystems or materials, may occur according to present knowledge
Critical load	A quantitative estimate of exposure to one or more pollutants below which significant harmful effects on specified sensitive elements of the environment do not occur according to present knowledge
Automated Number Plate Recognition	Camera technology that uses optical character recognition on images to read vehicle registration plates to create vehicle location data
Euro Standard	Vehicle emission standards for pollution from the use of new land surface vehicles sold in the European Union and European Economic Area member states and the United Kingdom,
Emission Factor Toolkit (EFT)	Published by Defra and the Devolved Administrations to assist local authorities in carrying out Review and Assessment of local air quality as part of their duties under the Environmental Act 1995 as amended by the Environment Act 2021. The EFT allows users to calculate road vehicle pollutant emission rates for a specified year, road type, vehicle speed and vehicle fleet composition.
Micrograms per cubic metre (μgm^{-3})	A measure of concentration, applied to pollutants in atmosphere (NOx and ammonia)

1. Introduction

1.1 In January 2024 AECOM completed a Habitats Regulations Assessment for the Horsham Regulation 19 Local Plan on behalf of Horsham District Council. That assessment included a traffic-related air quality assessment regarding impacts of traffic growth along the A272 on The Mens SAC.

1.2 Following a review of the predicted air quality impacts in discussion with Natural England, it was considered that the assessment of effects would benefit from greater understanding of potential changes to emissions of nitrogen oxides (NOx) and ammonia (NH_3) – and resultant impacts on ambient NOx and ammonia concentrations, nitrogen and acid deposition rates – from traffic on the A272 past the SAC over the Local Plan period, which extends to 2039. In particular, the Council wishes to address representations made by Natural England at Regulation 19. Their advice was:

> *"We advise that at present it is not possible to ascertain that the Local Plan will not result in adverse effects on the integrity of The Mens SAC… Natural England advises that the assessment does not currently provide enough information and/or certainty to justify the assessment conclusion. Further assessment and consideration of mitigation options is required… Natural England would welcome the opportunity to work with your authority to resolve this matter."*

1.3 In response, AECOM advised that Natural England's comments requiring further detail and explanation can be addressed through application of more realistic emissions factors for NOx and ammonia to reflect potential future changes in vehicle types, as the original assessment had used worst-case emission factors for 2030 with 2039 traffic flows. That approach is likely to have significantly over-estimated NOx and ammonia emissions as it didn't fully account for the significant electrification of the UK vehicle fleet that will occur during the 2030's as a result of UK government policy.

1.4 In the original assessment, the assumptions within the Defra Emissions Factor Toolkit (EFT) used at the time only proposed up to 20% electrification of the car fleet by 2039-2040, rising to ~35% by 2050 (and a small number of electric vans). A revised EFT has since been released. This includes increased levels of electrification of the fleet to more closely align with current DfT projections of fleet electrification that take into account the government's Net Zero ambition. However, the revised EFT still falls short of the more conservative DfT projection which takes into account national decarbonisation policies. This revised assessment uses both recent DVLA data for the local vehicle fleet and the more conservative DfT projections of the vehicle fleet directly, in order to take account of the Net Zero ambitions of the government. This would require most of the vehicle fleet to be electrified by 2050, which would be reasonable if a 2035 ban on petrol/diesel vehicles is enacted.

1.5 The purpose of this HRA Addendum is to provide updated air quality modelling taking account of the above changes, and supersedes the air quality assessment reported in paragraphs 6.51 to 6.75 of the Regulation 19 HRA. It is accompanied by a separate high-level Air Quality Mitigation Strategy, which addresses the remaining part of Natural England's comments.

2. Air quality modelling

2.1 It is considered that The Mens SAC is vulnerable to elevated NOx and ammonia (and thus to resulting nitrogen deposition which stems from both NOx and ammonia). It is also located within 200m of an A road likely to be utilised as a journey to work route for residents of new development in Horsham District, particularly though not exclusively for residents of Billingshurst: the A272. Modelling was therefore undertaken along a single transect within the SAC adjacent to the road (See **Appendix A**), with the closest part of the SAC being located immediately adjacent to the roadside.

2.2 Road traffic data in the form of 24-hour AADT (Annual Average Daily Traffic) based on 2019 data and forecast to 2039 were provided by the Stantec transport team, in line with the Horsham Transport Study. Stantec modelled additional journeys that will be taken at the transect point against a 2019 base, firstly arising from background traffic increase on the basis of no new local plan allocations but allowing for growth in surrounding local authorities ('2039 Do Minimum'), and secondly as a result of the Horsham Local Plan alone ('2039 Do Something') (Table 1). These data have not changed since the Regulation 19 HRA was produced in November 2023.

Table 1 Changes in Traffic Flow on A272

Scenario	Annual Average Daily Traffic (AADT)
Base 2019	5,532
Do Minimum 2039 (without Horsham Local Plan)	6,751
2039 Do Something	7,800

2.3 The traffic modelling (summarised in Table 1) identified that the difference between the Do Minimum and Do Something scenario (i.e. the contribution of the Local Plan with congestion mitigation such as traffic improvement schemes) was 1,049 AADT, indicating that the Horsham Local Plan in isolation would provide approximately half of the increase in traffic flows on this link to 2039. Full details of how the traffic modelling was undertaken, including assumptions, is set out in the Horsham Transport Study (last update November 2023).

2.4 The designated habitat for The Mens SAC is beech woodland. The Air Pollution Information Service (APIS)[1], provides a national searchable database and information on pollutants and their impacts on habitats and species, maintained by the Centre for Ecology and Hydrology. It is the standard reference database for air quality background data and the sensitivities of particular designated sites. According to APIS, the minimum Critical Load[2] of nitrogen deposition for beech woodland is 10 kg/N/ha/yr. APIS also identifies that the existing nitrogen deposition rate at the transect location is approximately 26.36 kg/N/ha/yr. Therefore, nitrogen deposition rates are already in exceedance of the critical load. The Critical Level for atmospheric ammonia concentrations for beech woodlands is internationally established as 3 µg NH_3/m^3. However, the SAC is also partially designated for its rich lichen and bryophyte populations. According to international standards, these have a Critical Level of 1 µg NH_3/m^3. As such, it is this lower level for ammonia that will be used in this assessment. APIS also identifies that the existing ammonia concentrations within the 1km grid square in which the SAC is situated are 1.55 µg NH_3/m^3 and thus already in exceedance for the SACs lichen and bryophyte populations.

Modelling results

2.5 An assessment of air quality was undertaken for both 'alone' impacts (i.e. only taking account of the Horsham Local Plan) and in-combination i.e. Horsham Local Plan in combination with all other growth from neighbouring authorities. In both cases the role of existing pollution including from other sectors such as agriculture and industry was also included. In this section discussion will focus on the contribution of the Horsham Local Plan alone. It has been agreed with Natural England to disregard modelling results from within 10m of the roadside. This is because closer to the roadside edge effects dominate, and roadside air turbulence makes model results less reliable.

Nitrogen Oxides (NOx)

2.6 With regards to NOx the critical level is set at 30 µg/m^3. Baseline data were utilised from the year 2019 which recorded NOx concentrations of 13.05 ug/m^3 at 10m from the roadside. As such the NOx Critical Level is not exceeded. Due to improvements in vehicle emissions technology (as reflected in the Defra Emission Factor Toolkit) and the significant increase in electric vehicles that can be expected during the 2030's (not currently reflected in the Defra Emission Factor Toolkit)[3] NO_X concentrations are forecast to continue to fall to 2039 notwithstanding the expected increase in traffic due to development across Horsham District, the South Downs National Park Authority, Chichester and surrounding authorities. As both baseline and all future concentrations are forecast to be below the Critical Level of 30 µg/m^3 it can be concluded that NO_X itself will not have an adverse impact upon the SAC and will only be considered further within the assessment as a source of nitrogen deposition.

[1] Air Pollution Information Service (APIS) (https://www.apis.ac.uk/). Online web app available at: https://www.apis.ac.uk/app
[2] The concepts of Critical Levels and Critical Loads were introduced by the United Nations Economic Commission for Europe (UNECE) Convention on Long-Range Transboundary Air Pollution (CLRTAP), and are defined as: *"concentrations of pollutants in the atmosphere above which direct adverse effects on receptors, such as human beings, plants, ecosystems or materials, may occur according to present knowledge."* Critical Levels apply to pollutants in atmosphere (NOx and ammonia) while critical loads apply to pollutant deposition (nitrogen)
[3] Whether a total ban on the sale of new petrol and diesel cars and vans is introduced in 2030 or 2035 it is indisputable that a significant proportion of the UK vehicle fleet by 2040 will consist of electric vehicles or other ultra-low emission technology.

Ammonia (NH_3)

2.7 For The Mens SAC, 1% of the most stringent Critical Level is 0.01 µg/m^3. Table 3 of Appendix A shows that the '1% of the critical level screening threshold is not exceeded by Horsham Local Plan alone beyond 10m from the roadside. This is derived from the difference between columns G and H in Table 2 of Appendix A. Therefore, no adverse effects on integrity are expected from the Local Plan alone. However, the data in column H of Table 2 show that the critical level itself (1µgm^{-3}) is exceeded, being 1.22 µg/m^3 at 10m from the roadside. This is largely due to existing ammonia concentrations as existing background ammonia (mainly from agriculture) is 1.16 µg/m^3, as can be seen from the bottom row in columns E to H of Table 2. This means 'in combination' effects need consideration.

2.8 The in combination ammonia impact (the difference between columns F and H in Table 2) is 0.02 µg/m^3 at 10m from the roadside, falling to 1% of the critical level (0.01 µg/m^3) by 20m from the roadside. Therefore approximately 2% of The Mens SAC[4] is affected by 'in combination' ammonia to a greater than imperceptible degree. This does represent a slight retardation in forecast improvement in ammonia concentrations[5]. On the Supplementary Advice on the Conservation Objectives the SAC has a 'restore' target for air quality: '*Restore concentrations and deposition of air pollutants to at or below the site-relevant Critical Load or Level values given for this feature of the site on the Air Pollution Information System'.* Without any growth an improvement of 0.06 µg/m^3 at 10m from the roadside is forecast to arise (difference between columns E and F in Table 2), due to electrification of the vehicle fleet. However, with all growth the improvement reduces to 0.04 µg/m^3 (difference between columns E and H in Table 2).

2.9 However, the critical level for ammonia is exceeded by approximately 16% under all scenarios, irrespective of traffic growth, due to existing agricultural sources of ammonia (livestock and fertiliser). Moreover, ammonia concentrations fluctuate greatly due to meteorological factors. Scrutiny of ammonia data from the UKEAP national ammonia monitoring network for a range of sites covering 2010-2019 shows that at rural sites like this one background ammonia concentrations generally fluctuate by more than 1 µg/m^3 (100% of the critical level) throughout the year. As such, small modelled incremental changes in average ammonia such as the 0.02 µgm^{-3} modelled here at 10m from the roadside may not be statistically significant due to the large variance in ammonia concentrations. Therefore, care should be taken not to read too much into small forecast changes in average ammonia concentration.

2.10 Nonetheless, an ammonia impact marginally exceeding 1% of the critical level is forecast 'in combination' up to c. 20m from the roadside does conflict with the air quality target for the SAC given it represents a slowing in the rate of improvement, albeit a small and localised one affecting approximately 2% of the SAC. Appendix B contains further modelling that identifies when during the Local Plan period 'in combination' traffic growth is expected to breach the 1% of the critical level threshold. This identifies that the impact is not forecast to occur until 2032-2035 (depending on the build out rates) given the housing trajectory has much of the housing including at the Billingshurst site being delivered later in the plan period and the air quality effect of the Local Plan will be related to the build out of allocated development (see Appendix B and C).

2.11 This is discussed further in the conclusion.

Nutrient Nitrogen

2.12 According to APIS, the lowest (most stringent) Critical Load for nutrient nitrogen deposition of the designated habitats within the SAC is 10 kgN/ha/yr for Atlantic acidophilous beech forests with *Ilex* and a *Taxus* scrub layer and the broadleaved deciduous woodland upon which the Barbastelle bat rely. Exceedance of this level can result in changes in ground vegetation and mycorrhiza, nutrient imbalance, changes to soil fauna, and changes to soil processes.

2.13 Paragraph 5.26 of Natural England guidance[6] states that '*An exceedance alone is insufficient to determine the acceptability (or otherwise) of a project'*. Where an exceedance of the Critical Load is expected, it is also necessary to consider whether the forecast dose will be imperceptible. As per paragraph 4.25 of same guidance '*…1% of critical load/level are considered by Natural England's air quality specialists (and by*

[4] This was calculated by measuring the total length of road passing The Mens SAC (1.5km) and then multiplying that by the 10m width of woodland affected (up to 20m back from the road). To allow for the fact that The Mens SAC sits on both sides of the road in some locations a further 500m stretch of road was included bringing the total to 2km. The total area of The Mens SAC (204.69ha) was then divided by this figure (2ha) and multiplied by 100 to convert it to a percentage.
[5] The Horsham Local Plan modelling forecasts a slight improvement in ammonia concentrations local to the road due to due to the projected increase in ultra-low emission vehicles and associated reduction in combustion engine vehicles expected by 2040, which is based on DfT 'Low-ambition Decarb Fleet' forecasts.
[6] http://publications.naturalengland.org.uk/publication/4720542048845824

industry, regulators and other statutory nature conservation bodies) to be suitably precautionary, as any emissions below this level are widely considered to be imperceptible…There can therefore be a high degree of confidence in its application to screen for risks of an effect'.

2.14 As the deposition rate is already in exceedance of the Critical Load, this assessment therefore first looks at the contribution of the Horsham Local Plan in terms of a significant increase above the Critical Load. For The Mens SAC, 1% of the Critical Load is 0.1 kgN/ha/yr.

2.15 In order to assess the contribution of the Horsham Local Plan alone it is necessary to separate it from the rest of development in the South Downs National Park Authority, Chichester District Council and other neighbouring authorities. The contribution of the Local Plan alone is shown by the difference between Do Minimum 2039 (column K) and the Do Something 2039 (column L) in Table 2.

2.16 It can be seen from Table 2 that, at 10m from the roadside, the difference between the Do Minimum 2039 (column K) and Do Something 2039 scenario (column L) (i.e. the contribution of the Horsham Local Plan) is 0.05 kgN/ha/yr. IAQM guidance advises that the '1% of the critical load' criterion should not be used to more than one significant figure (i.e. 1% rather than 1.0%). Using this approach the Horsham Local Plan does not exceed 1% of the critical load beyond the roadside. However, the 'in combination' nitrogen impact marginally exceeds 1% of the critical load up to c. 20m from the roadside being 0.14 kgN/ha/yr at 10m from the roadside (difference between column J and column L in Table 2).

2.17 Even with growth a net improvement in nitrogen deposition is forecast to 2039 when compared with 2019 baseline deposition rates as can be seen from comparing columns I (2019) and L (2039) in Table 2. Therefore the effect of growth is in terms of a slowing or retardation of the rate of improvement rather than a net deterioration (a net movement away from its air quality target to '*Restore concentrations and deposition of air pollutants to at or below the site-relevant Critical Load or Level values given for this feature of the site on the Air Pollution Information System'*). The hypothetical improvement in nitrogen deposition with no growth (difference between columns I and J in Table 2) is 2.48 kgN (average 0.12 kg/ha per year over 20 years). The forecast improvement with all growth (difference between columns I and L in Table 2) is 2.34 kgN. The maximum retardation due to growth (0.14 kgN, difference between columns K and L at 10m from the roadside in Table 2) is therefore equivalent to approximately 1 year. In other words when all growth is considered 'in combination' one year of improvements that would occur in the absence of any growth will not arise. To put it another way, with all growth it will take the SAC approximately one year longer to reach the same point it would reach in the absence of any growth. This is a minor loss of improvement. Moreover, none of the SAC is affected to a greater than imperceptible degree by Horsham Local Plan itself.

2.18 Moreover, the impact of nitrogen deposition on vegetation composition of a given woodland is subject to the strong confounding influence that tree canopy structure places on ground flora species richness, cover and other parameters that might illustrate the influence of nitrogen deposition. The canopy does this through interception of light, rainfall and pollution and the effect of woodland management upon this structure also has a big influence on ground flora. It is therefore entirely possible that no detectable negative effect on ground flora would be perceived in practice.

2.19 In addition, unlike some other SACs the Air Pollution Information System (Figure 1 below) shows that road traffic is a minor source of nitrogen at The Mens SAC (5%). In contrast, nearly 50% (48.7%) of atmospheric nitrogen at the SAC derives from agriculture (fertiliser and livestock combined) and over 60% of total nitrogen at the SAC comes from just two sources: agriculture and 'non-agricultural waste' (e.g. composting, landfill and energy from waste). Unlike road traffic (which has a very localised impact zone) agriculture and non-agricultural waste will affect nitrogen deposition across the entire SAC.

2.20 Therefore, even if the A272 was closed entirely it would have a minimal benefit on nitrogen deposition at The Mens SAC. Moreover, Figure 2 below shows that road traffic is not only a small contributor but is getting smaller (better) as time goes by, whereas agricultural nitrogen and non-agricultural waste (already by far the biggest sources of nitrogen) are both getting worse. This can be seen from the graphs below, excerpted from APIS.

2.21 For these reasons the forecast nitrogen deposition is not considered to constitute an adverse effect on the integrity of the SAC (compromising its structure or function).

Figure 1. Source apportionment for nitrogen deposition at The Mens SAC, taken from APIS

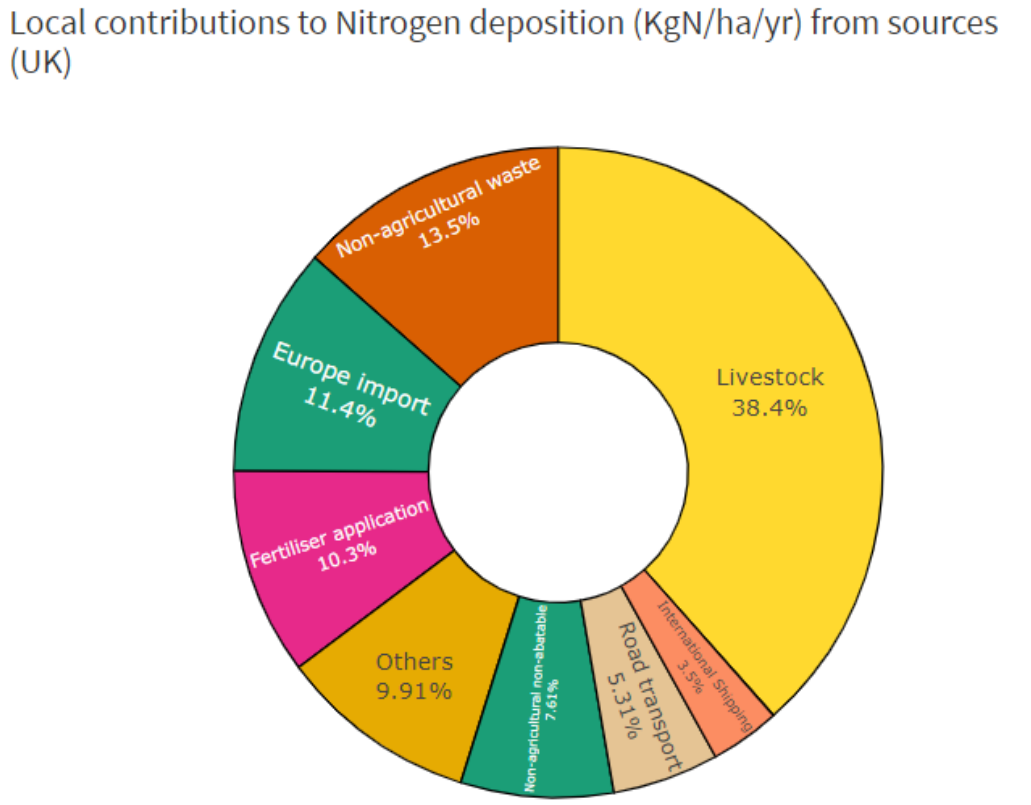
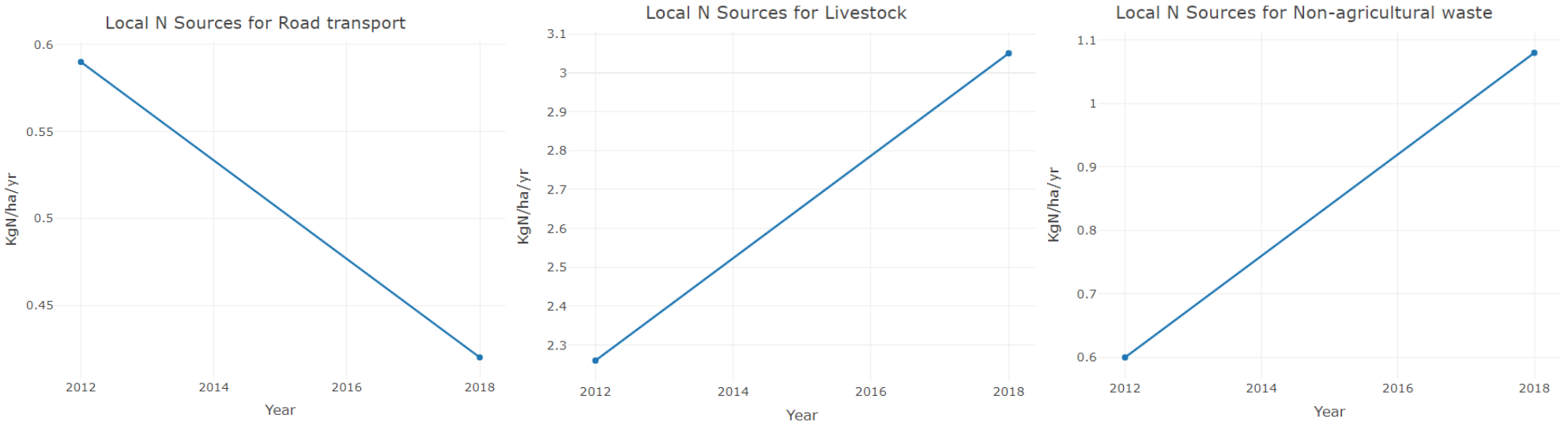


Figure 2. Trend data for nitrogen/ammonia sources at The Mens SAC, taken from APIS. While traffic-related nitrogen is improving, other sources of nitrogen are deteriorating (increasing)



3. Conclusion

3.1 It is concluded that no adverse effect on integrity of The Mens SAC will arise from nitrogen deposition or NOx in atmosphere.

3.2 The critical level for ammonia is exceeded by approximately 16% under all scenarios, irrespective of traffic growth, due to existing agricultural sources of ammonia (livestock and fertiliser). However, small modelled incremental changes in average ammonia such as the 0.02 μgm^{-3} modelled here at 10m from the roadside may not be statistically significant due to the large variance in ammonia concentrations that monitoring indicates is experienced at many rural sites during the course of a year. Therefore, care should be taken not to read too much into small forecast changes in average ammonia concentration. Therefore, to summarise the modelling work (reported in full in the HRA Addendum):

- Traffic only contributes around 5% of the emissions, so they are dwarfed by emissions from other sources.
- Moreover, traffic emissions of ammonia are a time-limited issue given there is a Government commitment to banning the sale of new combustion engine cars by 2035, and already-existing environmental regulations requiring minimum emissions. This is illustrated by Department for Transport (DfT) '*Decarbonising Transport: A Better, Greener Britain*'[7] and a subsequent publication, the '*additional information on assumptions used to develop decarbonising transport scenarios*'[8]
- In contrast, agricultural emissions are deteriorating and there is no certainty that there will be an effective mechanism forthcoming for mitigating agricultural emissions. Therefore, it is agriculture rather than traffic which will be largely responsible for ammonia at The Mens SAC exceeding its critical level by 2039.
- In combination atmospheric ammonia from traffic will slightly exceed 1% of the critical level for sites supporting lichens and bryophytes, being 0.02 $\mu g/m^3$ (2% of the critical level) at 10m from the roadside, falling to 1% of the critical level by c. 15-20m from the roadside. Moreover, small modelled incremental changes in average ammonia may not be statistically significant. In other words, while an effect on integrity cannot be dismissed it is small in magnitude.
- Due to the extent of movement away from fossil fuels expected by 2040, the ammonia effect identified above is a slowing of the rate of reduction in ammonia concentrations that would otherwise occur, rather than a net deterioration.
- This effect on integrity applies to approximately 2% of The Mens SAC. Therefore, it is physically localised with most of the SAC being affected to an imperceptible degree.
- The 'in combination' breach of the 1% of the critical level threshold is not expected to occur until late in the plan period, between 2032 and 2035 depending on the build out trajectory (see Appendix B and C).

3.3 Taking these factors into consideration it is concluded that the most appropriate approach to dealing with the forecast increase in ammonia concentrations in order to support a conclusion of no adverse effect on integrity (proportionate to the small scale of forecast in combination effect both in terms of physical extent, amount of ammonia involved and temporary nature of the impact) is to introduce a programme of measures to encourage a further shift from petrol cars and vans to ultra-low emission vehicles (ULEVs) over the period to 2039, beyond that modelled to arise purely from implementation of national policies. Automated Number Plate Recognition (ANPR) data for the A272 collected for Horsham District Council indicates that the local area already has a greater proportion of electric vehicles (1.86 %) than the national average fleet (1.79%) as set out within the DVLA data used for this assessment. This provides evidence that local existing and future car and van owners would be more responsive to a package of such measures than the average motorist.

[7] https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/1009448/decarbonising-transport-a-better-greener-britain.pdf
[8] https://www.gov.uk/government/publications/transport-decarbonisation-plan/additional-information-on-assumptions-used-to-develop-decarbonising-transport-scenarios

3.4 It is not possible to predict how much future ammonia concentrations would be reduced by such measures, since it would be dependent on uptake. However, it is possible to identify what further percentage conversion of petrol cars to ULEVs would be required in order to reduce the 'in combination' ammonia impact to 1% of the critical level. Since the impact is not forecast to occur until 2032-2035 there is no short-term requirement for mitigation and required percentage conversion of petrol/diesel cars and vans to electric vehicles could be used in future Local Plan Reviews to confirm whether the measures were on target to achieve their objective, and if not either introduce further measures or amend Local Plan growth to introduce further phasing. A similar approach was used for the adopted Epping Forest Local Plan and its HRA was used as a way to address forecast ammonia emissions from traffic growth. Subject to that, it is considered that an adverse effect on the integrity of the SAC will not arise even 'in combination' with other plans or projects.

3.5 This will be facilitated by the sustainable transport objectives of the Local Plan. In a previous iteration of this HRA, to determine the source of the increased traffic flows along the A272 as a result of the Horsham Local Plan, more detailed traffic source analysis was undertaken. This identified that Horsham Local Plan would provide approximately half of the increase in traffic flows on this link to 2039 and that 32% of the increase in traffic flows attributable to the Horsham Local Plan stems from a single site - Strategic Policy HA4: Land East of Billingshurst, with the remaining 68% of traffic increase stemming from all other Local Plan development. It is still anticipated that a large portion of traffic flows past The Mens on the A272 will stem from the same allocation (HA4). This is relevant because Policy HA4 includes the provision of electrical charging points for all car parking spaces within the development.

Appendix A : Air Quality Results

Table 2 Annual Mean Pollutant Concentrations / Deposition Rates[9]

Transect / Receptor	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P
	Total Annual Mean NOx (µg/m^3)				Total Annual Mean NH_3 (µg/m^3)				Total Annual Mean N Dep (kgN/ha/yr)				Total Annual Mean N Acid Dep (keq/ha/yr)			
	2019 Base	2039 FB	2039 DM	2039 DS	2019 Base	2039 FB	2039 DM	2039 DS	2019 Base	2039 FB	2039 DM	2039 DS	2019 Base	2039 FB	2039 DM	2039 DS
E1_0m	21.49	7.37	7.51	7.59	1.53	1.32	1.35	1.37	26.96	22.05	22.33	22.51	1.93	1.58	1.60	1.61
E1_10m	13.05	6.93	6.98	7.01	1.26	1.20	1.21	1.22	23.58	21.10	21.19	21.24	1.68	1.51	1.51	1.52
E1_20m	11.45	6.85	6.88	6.89	1.22	1.19	1.19	1.19	22.96	20.94	20.98	21.01	1.64	1.50	1.50	1.50
E1_30m	10.75	6.81	6.83	6.84	1.20	1.18	1.18	1.18	22.70	20.87	20.90	20.92	1.62	1.49	1.49	1.49
E1_40m	10.37	6.79	6.81	6.82	1.19	1.17	1.18	1.18	22.56	20.83	20.85	20.87	1.61	1.49	1.49	1.49
E1_50m	10.12	6.78	6.79	6.80	1.18	1.17	1.17	1.17	22.47	20.81	20.83	20.84	1.60	1.49	1.49	1.49
E1_60m	9.95	6.77	6.78	6.79	1.18	1.17	1.17	1.17	22.41	20.79	20.81	20.82	1.60	1.48	1.49	1.49
E1_70m	9.82	6.76	6.77	6.78	1.18	1.17	1.17	1.17	22.36	20.78	20.79	20.80	1.60	1.48	1.49	1.49
E1_80m	9.72	6.76	6.77	6.77	1.17	1.17	1.17	1.17	22.33	20.77	20.78	20.79	1.59	1.48	1.48	1.48
E1_90m	9.65	6.76	6.76	6.77	1.17	1.17	1.17	1.17	22.30	20.77	20.77	20.78	1.59	1.48	1.48	1.48
E1_100m	9.58	6.75	6.76	6.76	1.17	1.16	1.17	1.17	22.28	20.76	20.77	20.77	1.59	1.48	1.48	1.48
E1_110m	9.53	6.75	6.75	6.76	1.17	1.16	1.16	1.17	22.26	20.75	20.76	20.77	1.59	1.48	1.48	1.48
E1_120m	9.49	6.75	6.75	6.75	1.17	1.16	1.16	1.16	22.25	20.75	20.76	20.76	1.59	1.48	1.48	1.48
E1_130m	9.45	6.75	6.75	6.75	1.17	1.16	1.16	1.16	22.24	20.75	20.75	20.76	1.59	1.48	1.48	1.48
E1_140m	9.42	6.74	6.75	6.75	1.17	1.16	1.16	1.16	22.22	20.75	20.75	20.75	1.59	1.48	1.48	1.48
E1_150m	9.39	6.74	6.75	6.75	1.17	1.16	1.16	1.16	22.22	20.74	20.75	20.75	1.59	1.48	1.48	1.48
E1_160m	9.37	6.74	6.74	6.75	1.17	1.16	1.16	1.16	22.21	20.74	20.75	20.75	1.59	1.48	1.48	1.48
E1_170m	9.35	6.74	6.74	6.74	1.17	1.16	1.16	1.16	22.20	20.74	20.74	20.75	1.59	1.48	1.48	1.48
E1_180m	9.33	6.74	6.74	6.74	1.16	1.16	1.16	1.16	22.19	20.74	20.74	20.74	1.59	1.48	1.48	1.48

[9] Note: Table 1 is in the main body of the report.

Transect / Receptor	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P
	Total Annual Mean NOx (µg/m^3)				Total Annual Mean NH_3 (µg/m^3)				Total Annual Mean N Dep (kgN/ha/yr)				Total Annual Mean N Acid Dep (keq/ha/yr)			
	2019 Base	2039 FB	2039 DM	2039 DS	2019 Base	2039 FB	2039 DM	2039 DS	2019 Base	2039 FB	2039 DM	2039 DS	2019 Base	2039 FB	2039 DM	2039 DS
E1_190m	9.31	6.74	6.74	6.74	1.16	1.16	1.16	1.16	22.19	20.74	20.74	20.74	1.58	1.48	1.48	1.48
E1_200m	9.30	6.74	6.74	6.74	1.16	1.16	1.16	1.16	22.18	20.74	20.74	20.74	1.58	1.48	1.48	1.48

Table 3 2039 DS - DM and DS - FB Change (Impact) in Pollutant Concentrations / Deposition Rates and Percentage of Critical Level / Critical Load. This represents the difference between the DS and DM columns in Table 2

Transect / Receptor	Total Annual Mean NOx (µg/m^3)				Total Annual Mean NH_3 (µg/m^3)				Total Annual Mean N Dep (kgN/ha/yr)				Total Annual Mean N Acid Dep (keq/ha/yr)			
	DS - DM	% thres-hold	DS - FB	% thres-hold	DS - DM	% thres-hold	DS - FB	% thres-hold	DS - DM	% thres-hold	DS - FB	% thres-hold	DS - DM	% thres-hold	DS - FB	% thres-hold
E1_0m	0.08	0.28	0.22	0.74	0.02	2.07	0.05	5.43	0.18	0.88	0.46	2.29	0.01	0.08	0.03	0.22
E1_10m	0.03	0.09	0.07	0.24	0.01	0.62	0.02	1.61	0.05	0.26	0.14	0.68	0.00	0.02	0.01	0.07
E1_20m	0.02	0.06	0.04	0.15	0.00	0.35	0.01	0.91	0.03	0.15	0.08	0.38	0.00	0.01	0.01	0.04
E1_30m	0.01	0.04	0.03	0.10	0.00	0.24	0.01	0.62	0.02	0.09	0.05	0.26	0.00	0.01	0.00	0.02
E1_40m	0.01	0.03	0.02	0.08	0.00	0.18	0.00	0.46	0.02	0.08	0.04	0.19	0.00	0.01	0.00	0.02
E1_50m	0.01	0.02	0.02	0.06	0.00	0.14	0.00	0.36	0.01	0.05	0.03	0.16	0.00	0.01	0.00	0.01
E1_60m	0.01	0.02	0.02	0.05	0.00	0.11	0.00	0.30	0.01	0.04	0.03	0.13	0.00	0.00	0.00	0.01
E1_70m	0.01	0.02	0.01	0.05	0.00	0.10	0.00	0.25	0.01	0.04	0.02	0.11	0.00	0.00	0.00	0.01
E1_80m	0.00	0.01	0.01	0.04	0.00	0.08	0.00	0.21	0.01	0.03	0.02	0.08	0.00	0.00	0.00	0.01
E1_90m	0.00	0.01	0.01	0.03	0.00	0.07	0.00	0.18	0.01	0.03	0.01	0.07	0.00	0.00	0.00	0.01
E1_100m	0.00	0.01	0.01	0.03	0.00	0.06	0.00	0.16	0.00	0.02	0.02	0.08	0.00	0.00	0.00	0.01
E1_110m	0.00	0.01	0.01	0.03	0.00	0.05	0.00	0.14	0.00	0.02	0.01	0.07	0.00	0.00	0.00	0.01
E1_120m	0.00	0.01	0.01	0.02	0.00	0.05	0.00	0.13	0.01	0.03	0.01	0.06	0.00	0.00	0.00	0.01
E1_130m	0.00	0.01	0.01	0.02	0.00	0.04	0.00	0.11	0.00	0.02	0.01	0.04	0.00	0.00	0.00	0.00
E1_140m	0.00	0.01	0.01	0.02	0.00	0.04	0.00	0.10	0.00	0.02	0.01	0.04	0.00	0.00	0.00	0.00

Transect / Receptor	Total Annual Mean NOx (µg/m^3)				Total Annual Mean NH_3 (µg/m^3)				Total Annual Mean N Dep (kgN/ha/yr)				Total Annual Mean N Acid Dep (keq/ha/yr)			
	DS - DM	% thres-hold	DS - FB	% thres-hold	DS - DM	% thres-hold	DS - FB	% thres-hold	DS - DM	% thres-hold	DS - FB	% thres-hold	DS - DM	% thres-hold	DS - FB	% thres-hold
E1_150m	0.00	0.01	0.01	0.02	0.00	0.04	0.00	0.09	0.00	0.01	0.01	0.04	0.00	0.00	0.00	0.00
E1_160m	0.00	0.01	0.01	0.02	0.00	0.03	0.00	0.09	0.00	0.01	0.01	0.03	0.00	0.00	0.00	0.00
E1_170m	0.00	0.01	0.00	0.02	0.00	0.03	0.00	0.08	0.00	0.01	0.01	0.03	0.00	0.00	0.00	0.00
E1_180m	0.00	0.01	0.00	0.01	0.00	0.03	0.00	0.07	0.00	0.01	0.01	0.03	0.00	0.00	0.00	0.00
E1_190m	0.00	0.01	0.00	0.01	0.00	0.03	0.00	0.07	0.00	0.01	0.01	0.03	0.00	0.00	0.00	0.00
E1_200m	0.00	0.00	0.00	0.01	0.00	0.02	0.00	0.06	0.00	0.01	0.00	0.02	0.00	0.00	0.00	0.00

Appendix B : Air Quality Impact Assessment Technical Report

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Project name:
Horsham Local Plan

Project ref:
Horsham Local Plan

To:
James Riley

CC: Anna Savage

From:
Julian Mann
Flo Kirk-Lloyd

Date:
July 2024

Memo

Subject: Horsham Local Plan Air Quality Modelling – Technical Note regarding estimating annual impact of the Horsham Local Plan on Ammonia concentrations in The Mens SAC.

1. Introduction

1.1 Air quality modelling of concentrations and deposition rates of a number of relevant pollutants at the E1 transect at The Mens SAC has previously been carried out as part of the Horsham Local Plan Habitat Regulations Assessment (HRA). This identified that whilst most of the impacts of vehicle emissions on Critical Loads and Critical Levels are predicted to be not significant, there is a risk of the in combination impact of traffic growth on ammonia (NH_3) concentrations at The Mens SAC exceeding 1% of the critical level (the threshold of imperceptibility). A mitigation plan has been prepared. This sets out approaches to mitigating this impact and commits to monitoring the uptake of ultra low emissions vehicles (ULEVs) in order to ensure that the proposed mitigation measures are sufficient to maintain the impact of the LP to below 1% of the critical level. Subsequently, calculations have been carried out in order to provide an indication of which year, absent of mitigation, housing growth would lead to an exceedance of the 1% threshold. This focuses on the results at the worst-case non-roadside receptor along the transect (E1_10m, 10m from the road edge).

1.2 The modelling methodology used to predict NH_3 concentrations used within this exercise is discussed in detail in the air quality modelling methodology report to the Horsham Local Plan HRA which should be read in conjunction with this technical note.

2. Methodology

2.1 This section provides a brief summary of the approach taken to estimating the annual impacts on annual mean NH_3 concentrations at the worst-case non-roadside receptor (E1_10m; 10m from the road edge).

2.2 The information that has been used for the calculation are:

- the current predictions of the impacts resulting from the Horsham Local Plan, without additional mitigation. Specifically, the change in concentration due to the 'in combination' impact of the Horsham Local Plan and other Local Plans (known as the DS-FB Impact);
- The allocated projected build trajectory, as provided by Horsham District Council. The data for Horsham only has been used because it is the main contributor to forecast changes compared to Chichester., with the Horsham Local Plan being responsible for 50% of forecast traffic growth on the relevant section of the A272 to 2040; and
- The Local Plan stepped housing requirement, as proposed in Strategic Policy 37 in the Regulation 19 Local Plan. This has been used as a sensitivity test.

2.3 The increase in NH_3 concentrations at the 10m receptor between 2023 to 2039, attributable to the Horsham and other Local Plans was divided by the total number of proposed new units built in Horsham over the same period as part of the Local Plan. Using this ratio, increases in concentrations each year were apportioned at the 10m receptor between 2023 to 2039 using the proposed new units built each year stated in the Local Plan. Using a cumulative count, the year during the 2023 - 2039 period when the impact at the 10m receptor (DS - FB) reaches 1% of the 1 $\mu g/m^3$ ammonia critical level was estimated.

2.4 As a sensitivity test, the stepped requirement buildout rate also provided by Horsham has been used in a similar way to produce a second set of results.

3. Results

3.1 The results of the two tests are presented in Table 1.

Table 1 Results at E1_10m receptor

Year	Allocation based Trajectory			Stepped Requirement based Trajectory		
	Cumulative Number of Units	Cumulative Impact (µg/m^3)	Cumulative Impact (% of CL)	Cumulative Number of Units	Cumulative Impact (µg/m^3)	Cumulative Impact (% of CL)
2023-2024	486	0.001	0.06	480	0.001	0.06
2024-2025	1,011	0.001	0.12	960	0.001	0.12
2025-2026	1,583	0.002	0.19	1,440	0.002	0.18
2026-2027	2,209	0.003	0.27	1,920	0.003	0.23
2027-2028	2,770	0.003	0.34	2,400	0.003	0.29
2028-2029	3,774	0.005	0.46	3,301	0.005	0.40
2029-2030	5,155	0.006	0.63	4,202	0.006	0.51
2030-2031	6,321	0.008	0.77	5,103	0.008	0.62
2031-2032	7,423	0.009	0.90	6,004	0.009	0.73
2032-2033	**8,308**	**0.010**	**1.01**	6,905	0.010	0.84
2033-2034	9,154	0.011	1.11	7,806	0.011	0.95
2034-2035	10,051	0.012	1.22	**8,707**	**0.012**	**1.06**
2035-2036	10,907	0.013	1.33	9,608	0.013	1.17
2036-2037	11,629	0.014	1.41	10,509	0.014	1.28
2037-2038	12,218	0.015	1.49	11,410	0.015	1.39
2038-2039	12,750	0.016	1.55	12,311	0.016	1.50
2039-2040	13,212	0.016	1.61	13,212	0.016	1.61

3.2 Table 1 shows the estimated year where the 1% threshold is exceeded to be 2032, based on the allocation based trajectory and 2034 based on the stepped requirement based trajectory.

4. Assumptions and Limitations

4.1 There were a number of limitations and uncertainties associated with the air quality modelling which forms the basis of the work set out within this note. These are not set out again within this document but should be referred to within the previous assessment works. In addition, the following assumptions and or uncertainties should also be noted.

4.2 It has been assumed that there is a direct linear relationship between new units built as part of the local plan and the increase of NH_3. In reality there may be differences related to:

- Type of units;
- Parking allocation;
- Location of allocation in relation to the SAC;
- Facilities within the allocation and surrounding area;
- Socioeconomic factors;

- Timing of build in relation to development and cost of vehicle technology and government legislation; and
- Mitigation measures undertaken by Horsham District Council and other nearby local authorities.

4.3 Some developments within the Local Plan will have a greater impact than others and many may not have an impact at all. In particular, the nearby Billingshurst land allocation is likely to have a disproportionately large impact due to its location in relation to The Mens SAC. A qualitative review shows that this allocation is expected to result in completed units in phases between 2027 and 2034 which is roughly in line with the estimations set out above.

4.4 The cumulative impact which includes the impact of nearby local authority LPs has been used within this exercise. The allocation-based housing trajectory for the Horsham LP has been applied to the cumulative impact in absence of more detailed information relating to the trajectory of build out in surrounding areas. The stepped local plan housing requirement used within the sensitivity test is likely to reflect a more standard expectation of the trajectory for build out rates for LPs and the outcome, showing that this standard practice trajectory would result in the 1% threshold being breached two years later than the allocation based trajectory suggests that the allocation based trajectory is likely to be the worst case assumption.

4.5 No other factors which can impact the increase of NH_3 such as changes in technology beyond that discussed within the air quality modelling report to the HRA and changes in land use and practices have been taken into consideration.

4.6 No amendments or changes to the Local Plan have been taken into consideration. In addition, this has been based on a no mitigation scenario. Mitigation has been proposed which is expected to result in a faster transition towards electric vehicles in the area. It is expected that this mitigation would result in impacts not breaching the 1% threshold, however, should the mitigation not be as effective as expected, it would still have the effect of slowing the impact trajectory, resulting in the year in which the threshold is breached being later than indicated here.

4.7 It should be noted that the modelled concentrations used within the HRA are based on the assumption that background concentrations and other sources of ammonia will not deviate from the predicted values for future years. Whilst this does not alter the percentage impact used within this exercise, it does have the potential to offset any additional NH_3 emissions related to the LP if reductions occur.

5. Summary and Conclusions

5.1 The data for Horsham only has been used because it is the main contributor to forecast changes compared to Chichester, with the Horsham Local Plan being responsible for 50% of forecast traffic growth on the relevant section of the A272 to 2040. As such, the Horsham trajectory will have a greater influence on when the impact occurs than growth in any other authority. Growth in Chichester District and other authorities is taken account of in the Horsham calculations but is not modelled to the same level of detail. A second reason why the modelling for Horsham has been used is because there should not be two separate sets of air quality targets (one for each authority), and the modelling undertaken for Horsham models growth in that authority in more detail than the modelling undertaken for Chichester.

5.2 Predicted build out rates for the draft Horsham Local Plan allocations have been used to identify a likely year in which predicted ammonia “in combination” impacts (DS-FB) at the worst-case roadside receptor along the transect (E1_10m) will breach the 1% threshold of the Critical Level of 1 µg/m³. This calculation suggests that the 1% threshold will not be breached until 2032 to 2035 depending on build out rates. There is significant uncertainty due to the limitations of the input data and assumptions required; however, it is likely that the threshold will not be breached early in the plan period, allowing time to monitor changes in traffic relating to the mitigation measures proposed.

Appendix C Local Plan Trajectory

Note that the trajectory provided by Horsham District Council represents a snapshot in time, and it is understood that it will be shortly updated to include completions for 2023/24.

	Parish	Planning Ref	SA Ref	Not Yet Completed	Total Completed at 1 April 2023	Total Permitted	20/21 Comps	21/22 Comps	22/23 Comps	2023/2024	2024/2025	2025/2026	2026/2027	2027/2028	2028/2029	2029/2030	2030/2031	2031/2032	2032/2033	2033/2034	2034/2035	2035/2036	2036/2037	2037/2038	2038/2039	2039/2040	TOTAL 23/24-39/40
		Target		**911**																							
DETAILED PERMISSIONS																											
Category A Strategic Site Commitments																											
West of Horsham (EAST) - Highwood		*DC/15/1702/REM & DC/17/0164/REM*		356	734	1090	42	172	33	42	67	67	67	67	46	0	0	0	0	0	0	0	0	0	0	0	**356**
Kilnwood Vale - Colgate Phases 2 and 3		*DC/10/1612/OUT and various REMs*		0	1318	1318	199	83	80	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
Kilnwood Vale- Colgate Reserved Land Phase 6A		*DC/20/2223/REM*		74	94	168	0	12	82	74	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**74**
Land West of Southwater (Broadacres)		*DC/18/1246/REM*		196	318	514	20	54	17	38	53	53	52	0	0	0	0	0	0	0	0	0	0	0	0	0	**196**
Land North of Horsham		*DC/20/2047/REM and DC/21/0066/REM*		341	49	390	0	0	49	100	100	100	41	0	0	0	0	0	0	0	0	0	0	0	0	0	**341**
Development of Land South of Marringdean Acres		*DC/16/0274*		17	34	51	0	0	34	17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**17**

Category A Strategic Site Commitments						**3,531**	**261**	**321**	**295**	**271**	**220**	**220**	**160**	**67**	**46**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**984**
CATEGORY A COMMITMENTS 5+																									
Lodge Farm Malthouse Lane Ashington	**Ashington**	DC/19/1788//FUL		0	7	7	0	0	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
Land East of Billingshurst	**B'Hurst**	DC/13/0735/OUT		57	436	493	211	61	0	57	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**57**
Barclays Bank 84 High Street Billingshurst	**B'Hurst**	DC/18/1761/FUL		2	0	2	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**2**
Rowfold Kennels Billingshurst	**B'Hurst**	DC/19/1870/FUL		4	0	4	0	0	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**4**
Kingfisher Farm West Chiltington Lane Billingshurst	**B'Hurst**	DC/19/1205/FUL		11	0	11	0	0	0	0	11	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**11**

Graylands Manor Graylands Estate Languhurst Wood Road RH12 4QD	**Colgate**	DC22/1191/PA3MA		0	0	10	0	0	0	0	10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**10**
Land at Brook Hill & Cowfold Glebe, Cowfold SA076/083	**Cowfold**	DC/22/1815/FUL		35	0	0	0	0	0	0	0	0	0	0	7	20	8	0	0	0	0	0	0	0	0	**35**
25 Croft House High Street Henfield	**Henfield**	DC/20/1536/FUL		7	0	7	0	0	0	0	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**7**
Norfolk House 32-40 North Street Horsham	**Horsham (Denne NC)**	DC/16/1853/PA3O and DC/16/2499/FUL		20	0	20	0	0	0	20	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**20**
Bailey House 4-10 Bartellot Road Horsham	**Horsham (Denne NC)**	DC/20/0569/PA3O		15	0	15	0	0	0	0	15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**15**
Sussex House North Street Horsham	**Horsham (Denne NC)**	DC/20/1003/PA3O & DC/21/0236/PA2OAB		0	0	30	0	0	30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
Abbeyfield Lodge 21 Hurst Road Horsham West Sussex RH12 2DS	**Horsham (Denne NC)**	DC/21/1155/FUL 9 flats but net loss.		9	0	9	0	0	0	-9	9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
11 Ridgehurst Drive Horsham	**Horsham (Denne NC)**	DC20/1052/FUL		0	0	5	0	-1	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**

Queens Head 37 Queen Street Horsham RH13 5AA	**Horsham (Forest NC)**	DC/14/2591/FUL and DC/18/2370/COU		6	6	12	0	4	2	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**6**
Page Court Livingstone Road Horsham RH13 5TA	**Horsham (Forest NC)**	DC/19/1603/FUL		48	-45	48	0	-45	0	0	48	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**48**
Greenfield Farm Valewood Lane Barns Green	**Itchingfield**	DC/16/2721/FUL		5	0	5	0	0	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**5**
Elite Garage, Brighton Road Mannings Heath	**Nuthurst**	DC/20/1475/PA3O		7	0	7	0	0	0	0	0	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**7**
Land Adjacent Railway Cottages and Pulborough Railway Station Stopham Road Pulborough RH20 1DP	**Pulborough**	DC/16/0728/FUL		29	0	29	0	0	0	0	10	19	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**29**
Sports Horses International Ltd Stud Farm New Barn Farmhouse Capel Road Rusper Horsham	**Rusper**	DC/17/2714/PA3P		0	5	5	0	4	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
Land South of East Street, Rusper SA465	**Rusper**	DC/21/2172/FUL		6	0	0	0	0	0	0	0	0	0	0	6	0	0	0	0	0	0	0	0	0	0	0	**6**
St Cuthmans Cowfold Road Coolham Horsham West Sussex RH13 8QL	**Shipley**	DC/21/1366/PA3Q		5	0	5	0	0	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**5**

Roundstone Park Worthing Road Southwater West Sussex	**Southwater**	DC/22/0096/FUL		42	0	42	0	0	0	0	0	10	20	12	0	0	0	0	0	0	0	0	0	0	0	**42**
Northover Farm Wiston Steyning	**Steyning**	DC/20/1659/PA3Q		5	0	5	0	0	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**5**
B And W Loudspeakers Ltd Elm Grove Lane Steyning West Sussex BN44 3SA	**Steyning**	DC/20/0789/FUL		9	0	9	0	0	0	9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**9**
Lloyds Bank TSB Limited 37 High Street Steyning West Sussex BN44 3ZA	**Steyning**	DC/20/0622/FUL		5	0	5	0	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**5**
141 Shooting Field, Steyning	**Steyning**	DC/21/2394/FUL		14	0	14	0	0	0	0	0	0	0	0	-2	14	0	0	0	0	0	0	0	0	0	**12**
Greenacres, Hurston Lane, Storrington	**Storrington**	DC/22/2141/REM		6	0	6	0	0	0	0	0	0	0	0	-1	6	0	0	0	0	0	0	0	0	0	**5**
Unit 20 First Floor Old Mill Square Storrington Pulborough	**Storrington**	DC/20/0859/PA30		5	0	5	0	0	0	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	**5**
Abingworth Farm & Nursery Storrington Road	**Thakeham**	DC/10/1314/FUL &DC/19/1707/FUL - Other 75 units part of Thakeham NP Allocation		0	0	0	14	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**

Land East of Threals Lane, Threals Lane, West Chiiltington	**Thakeham & West Chilts**	DC/15/0193/FUL		7	1	8	0	0	1	2	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**7**
Smith & Western 37 North Parade Horsham RH12 2QR	**Trafalgar**	DC/21/1831/FUL		20	0	20	0	0	0	0	0	20	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**20**
Old Clayton Boarding Kennels Storrington Road Washington West Sussex RH20 4AG	**Washington**	DC/23/0701/FUL		41	0	41	0	0	0	0	0	0	0	0	20	21	0	0	0	0	0	0	0	0	0	0	**41**
Threals Farm Threals Lane West Chiltington	**West Chilts**	Threals Farm Threals Lane West Chiltington		5	0	5	0	0	0	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**5**
Rambledown House Common Hill West Chiltington	**West Chilts**	Rambledown House Common Hill West Chiltington		11	0	11	0	0	0	0	11	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**11**

Blaker Specialised Welding Co, Worthing Road, Dial Post	**West Grinstead**	DC/17/1000/OUT & DC/20/2358/REM		12	0	12	0	0	0	0	6	6	0	0	0	0	0	0	0	0	0	0	0	0	0	**12**
COMMITTED LARGE SITES 5+ CAT A							**225**	**29**	**39**	**90**	**153**	**72**	**20**	**12**	**30**	**61**	**8**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**446**
NEIGHBOURHOOD PLAN SITES CATEGORY A																										
Chanctonbury Nursery, Ashington	Ashington	DC/22/0372/FUL		74	0	74	0	0	0	0	0	0	0	0	10	20	20	24	0	0	0	0	0	0	0	0	**74**
Land at Slaughterford Farm (Sumners Pond), Barns Green	Barns Green (Itchingfield Parish)	DC/21/2697/FUL		32	0	32	0	0	0	0	0	0	0	0	15	17	0	0	0	0	0	0	0	0	0	0	**32**
Land North of Sandygate Lane, Lower Beeding SA575	Lower Beeding	DC/22/0708/FUL		22	0	22	0	0	0	0	0	0	0	0	10	12	0	0	0	0	0	0	0	0	0	0	**22**
Former Swallowfields Nursery Church Road Mannings Heath West Sussex (Nuthurst Neighbourhood Plan Allocation Policy 2)	Nuthurst	DC/20/1698/FUL		9	0	9	0	0	0	9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**9**
Land adj to Heathtolt Cottages, Maplehurst	Nuthurst	DC/19/2500/FULGRanted 28/4/2020		6	0	6	0	0	0	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**6**
Land at Holly Farm, Nuthurst	Nuthurst	DC/21/0685/FUL, granted 6/8/2021		0	5	5	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**

Crosby Farm	Slinfold	DC/21/0498/FUL permitted 27/8/2021		24	0	24	0	0	0	10	14	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**24**
Abingworth Farm & Nursery Storrington Road	Thakeham	DC/19/1707/FUL granted 25/2/2021		50	0	50	0	0	0	0	20	20	10	0	0	0	0	0	0	0	0	0	0	0	0	**50**
The Cobblers, Slinfold	Slinfold	DC20/2578/FUL		12	-13	12	0	0	-13	0	12	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**12**
Angell Sandpit, Storrington		DC/21/0057/FUL granted 24/9/2021		6	0	6	0	0	0	0	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**6**
Land at Old London Road (The Vineyard) Washington		DC/20/0717 Granted 15 Sep 2020		0	16	16	0	-1	16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
NEIGHBOURHOOD PLAN SITES CATEGORY A							**0**	**-1**	**8**	**25**	**52**	**20**	**10**	**0**	**35**	**49**	**20**	**24**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**235**
Committed Small Sites (1-4 dwellings)									***47***	***100***	***100***	***60***	***0***	***0***	***0***	***0***	***0***	***0***	***0***	***0***	***0***	***0***	***0***		***260***
OUTLINE PERMISSIONS																										
CATEGORY B - STRATEGIC SITES																										
Kilnwood Vale - Colgate Phase 3		DC/10/1612/OUT &DC/23/1694/REM; ; DC/23/1787/REM; DC/23/1786/REM		*526*	*0*	*0*	0	0	0	0	0	80	100	100	100	100	46	0	0	0	0	0	0	0	0	**526**

Kilnwood Vale - Rusper Phases 4 &5		DC/10/1612 /OUT & DC/23/1647 /REM; DC/23/1657 /REM		722	0	0	0	0	0	0	0	0	0	0	0	0	100	100	100	100	100	100	100	22	0	0	**722**
Kilnwood Vale - Colgate Reserved Land Phase 6B		DC/17/2481 /OUT & DC/21/2246 /FUL		116	0	0	0	0	0	0	0	50	66	0	0	0	0	0	0	0	0	0	0	0	0	0	**116**
Land North of Horsham		DC/16/1677 /OUT		2360	0	2360	0	0	0	0	0	0	80	127	127	127	127	127	127	127	127	127	127	127	127	127	52	**1,656**
Land West of Southwater (Broadacres)		DC/19/2464 /REM		80	0	0	0	0	0	0	0	0	0	40	40	0	0	0	0	0	0	0	0	0	0	0	0	**80**
CATEGORY B - STRATEGIC SITES							**0**	**0**	**0**	**0**	**0**	**130**	**246**	**267**	**267**	**227**	**273**	**227**	**227**	**227**	**227**	**227**	**227**	**149**	**127**	**52**	**3,100**
CATEGORY B 10+ COMMITMENTS WITH OUTLINE PERMISSION																											
Land Fronting Natts Lane, Billingshurst		DC/16/0357 /OUT, granted 29/11/2019		32	0	32	0	0	0	0	0	0	0	0	16	16	0	0	0	0	0	0	0	0	0	0	**32**

Former Novartis Site Parsonage Road Horsham West Sussex		DC/18/2687 /OUT, 300 dw granted 11/2/2020 & DC/23/0183 /REM		123	0	0	0	0	0	0	0	50	50	23	0	0	0	0	0	0	0	0	0	0	0	**123**
Former Novartis Site Parsonage Road Horsham West Sussex		DC/18/2687 / 300 dw granted 11/2/2020 & DC/23/0171 /REM		137	0	0	0	0	0	0	0	0	0	0	50	50	37	0	0	0	0	0	0	0	0	0	**137**
Land At New Place Farm, Pulborough	**Pulborough**	DC/21/2321 /OUT		170	0	170	0	0	0	0	0	0	0	0	20	50	50	50	0	0	0	0	0	0	0	0	**170**
Rascals Farm Shipley Road Southwater		DC/20/0695 /OUT, granted 2/8/2021		100	0	100	0	0	0	0	0	0	0	0	20	50	30	0	0	0	0	0	0	0	0	0	**100**
Land at Wellcross Farm Broadbridge Heath		DC/19/1897 /OUT, granted 27/5/2021		78	0	78	0	0	0	0	0	0	0	0	20	58	0	0	0	0	0	0	0	0	0	0	**78**
Land at Duckmoor, East of Billingshurst, RH14 9DZ		DC/20/2607 /OUT		83	0	83	0	0	0	0	0	0	0	0	20	40	23	0	0	0	0	0	0	0	0	0	**83**
Woodfords Shipley Road Southwater		DC/21/2180 /OUT		73	0	73	0	0	0	0	0	0	0	0	20	40	13	0	0	0	0	0	0	0	0	0	**73**
CATEGORY B 5+ COMMITMENTS							**0**	**0**	**0**	**0**	**0**	**50**	**50**	**23**	**166**	**304**	**153**	**50**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**796**

MADE N'HOOD PLAN SITES																										
CATEGORY B NEIGHBOURHOOD PLAN SITES																										
Land West of Ashington School	**Ashington**	DC/23/0406/FUL		150	0	0	0	0	0	0	0	0	0	0	30	60	60	0	0	0	0	0	0	0	0	**150**
A- Land North of Parsonage Farm	**Henfield**	DC/21/2013/OUT		235	0	0	0	0	0	0	0	0	0	0	50	90	50	45	0	0	0	0	0	0	0	0	**235**
B - Land East of Wantley Hill	**Henfield**	**Henfield NP allocation. Henfield NP made 23 June 2021.**		**0**	**0**	**0**	0	0	0	0	0	0	0	0	0	0	10	15	0	0	0	0	0	0	0	0	**25**
C- Land West of Backsettown, off Furners Lane	**Henfield**	Henfield NP allocation. Henfield NP made 23 June 2021.		0	0	0	0	0	0	0	0	0	0	0	0	0	0	15	15	0	0	0	0	0	0	0	**30**
D - Land South of the Bowls Club (off Furners Mead)	**Henfield**	Henfield NP allocation. Henfield NP made 23 June 2021.		0	0	0	0	0	0	0	0	0	0	0	0	0	0	10	0	0	0	0	0	0	0	0	**10**
Land at Saxtons Farm, Monks Gate	**Nuthurst**	Allocation in Nuthurst Neighbourhood plan. NP made 22 October 2015		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6	0	0	0	0	0	0	0	**6**

Land behind White Horse, Maplehurst	**Nuthurst**	Allocation in Nuthurst Neighbourhood plan. NP made 22 October 2015.		0	0	0	0	0	0	0	0	0	0	0	3	0	0	0	0	0	0	0	0	0	0	**3**
East of Hayes Lane, Slinfold	**Slinfold**	Allocation in Nuthurst Neighbourhood plan. NP made 22 October 2016		0	0	0	0	0	0	0	0	0	0	0	0	0	0	15	13	0	0	0	0	0	0	0	**28**
Ravenscroft Allotment Site, Storrington	**Storrington**	DC/21/2086/OUT		78	0	78	0	0	0	0	0	0	0	0	10	20	20	28	0	0	0	0	0	0	0	0	**78**
Land at Old Mill Drive, Storrington (The Diamond)	**Storrington**	Land at Old Mill Drive, Storrington (The Diamond)		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	20	0	0	0	0	0	0	**20**
Land at the Post Office Depot, High Street Storrington	**Storrington**	Land at the Post Office Depot, High Street Storrington		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	10	0	0	0	0	**10**
Land North of Downsview Avenue RH20 4LU	**Storrington**	DC/19/2015/OUT & DC/23/0290/REM		62	0	0	0	0	0	0	0	20	20	22	0	0	0	0	0	0	0	0	0	0	0	0	**62**
Thakeham Tiles, Rock Road Storrington	**Storrington**	DC/18/2095/OUT		90	0	90	0	0	0	0	0	0	0	0	0	40	50	0	0	0	0	0	0	0	0	0	**90**
Land East of Pound Lane	**Upper Beeding**	DC/21/2195/FUL		35	0	0	0	0	0	0	0	0	0	0	20	15	0	0	0	0	0	0	0	0	0	0	**35**
Oxcroft Farm, Small Dole	**Upper Beeding**	Allocation for 20 in Upper Beeding NP.		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	10	10	0	0	0	0	**20**

		NP made 23 June 2021.																							
Land at Greenfields, Henfield Road, Upper Beeding	**Upper Beeding**	Allocation for 10 in Upper Beeding NP. NP made 23 June 2021.		0	0	0	0	0	0	0	0	0	0	0	0	0	10	0	0	0	0	0	0	0	0	**10**
Riverside Caravan Park, Upper Beeding	**Upper Beeding**	Allocation for 9 in Upper Beeding NP. NP made 23 June 2021.		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	9	0	0	0	0	**9**
North of Freeman Road, Warnham	**Warnham**	Allocation for 50 in Warnham NP. NP made		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	10	20	20	0	0	0	**50**
Category B Neighbourhood Plan Sites							**0**	**0**	**0**	**0**	**0**	**20**	**20**	**22**	**113**	**225**	**200**	**128**	**34**	**20**	**20**	**49**	**20**	**0**	**0**	**0**	**871**
DRAFT STRATEGIC ALLOCATIONS																											
West of Ifield							0	0	0	0	0	0	0	0	0	60	100	160	160	160	160	160	160	160	160	160	**1600**
Land NW of Southwater							0	0	0	0	0	0	0	0	0	35	70	70	70	70	70	70	70	70	70	70	**735**
East of Billingshurst							0	0	0	0	0	0	0	50	100	100	100	100	100	100	0	0	0	0	0	0	**650**
Extra at North Horsham							0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	60	**60**
Proposed Strategic Allocations							**0**	**0**	**0**	**0**	**0**	**0**	**0**	**50**	**100**	**195**	**270**	**330**	**330**	**330**	**230**	**230**	**230**	**230**	**230**	**290**	**3045**

SMALLER SITE ALLOCATIONS (Non-made NPs and HDc Sites)																									
Land east of Mousdell Close, Ashington	**Ashington**	SA866		75	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	15	20	40	0	0	0	0	**75**
Land South of Smugglers Lane, Barns Green	**Barns Green (Itchingfield Parish)**	SA006		50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	25	25	0	0	0	0	0	**50**
Land South of Muntham Drive, Barns Green	**Barns Green (Itchingfield Parish)**	SA510		25	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	25	0	0	0	0	0	**25**
Old School Site, Itchingfield	**Itchingfield**	SA522		20	0	0	0	0	0	0	0	0	0	0	0	0	0	20	0	0	0	0	0	0	0	0	**20**
South of Lower Broadbridge Farm, BBH/Slinfold	**Broadbridge Heath**	DC/22/1052 and DC/22/1057.		133	0	0	0	0	0	0	0	0	0	0	0	20	30	50	33	0	0	0	0	0	0	0	0	**133**
Field West of Cowfold, North of A272, Cowfold	**Cowfold**	SA609		35	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5	30	0	0	0	0	0	**35**
Fields West of Cowfold, South of A272/Field West of Cowfold, South of A272, West of Little Potters	**Cowfold**	SA610/611		35	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	10	25	0	0	0	0	0	0	**35**
Land at Sandgate Nurseries, Henfield	**Henfield**	DC/23/0189/OUT		50	0	0	0	0	0	0	0	0	0	0	0	20	30	0	0	0	0	0	0	0	0	0	0	**50**
Land at Hornbrook Farm, Horsham (Forest)	**Horsham (Forest)**	SA074		100	0	0	0	0	0	0	0	0	0	0	0	0	0	0	40	60	0	0	0	0	0	0	0	**100**

Land at Glayde Farm, West of Church Lane, Lower Beeding	**Lower Beeding**	SA567		30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	10	20	0	0	0	0	**30**
Land at Trinity Cottage (Land South of Church Farm House), Lower Beeding	**Lower Beeding**	SA584		7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	7	0	0	0	0	0	0	**7**
Cyder Farm, Crabtree (Lower Beeding Parish)	**Lower Beeding**	SA892		6	0	0	0	0	0	0	0	0	0	0	0	0	0	6	0	0	0	0	0	0	0	0	0	**6**
Land at Mercer Road	**North Horsham**	SA568		300	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	40	75	80	60	45	0	**300**
Land North of the Rise Partridge Green	**Partridge Green**	DC/22/0301/OUT		55	0	0	0	0	0	0	0	0	0	0	20	35	0	0	0	0	0	0	0	0	0	0	0	**55**
Land North of the Rosary, Partridge Green	**Partridge Green**	DC/20/1697/OUT		80	0	0	0	0	0	0	0	0	0	0	0	0	0	20	30	30	0	0	0	0	0	0	0	**80**
Land North of Shermanbury Road SA4333	**Partridge Green**	DC/21/2704/OUT		120	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	20	30	30	30	10	0	**120**
Land at Highfields, Pulborough	**Pulborough**		SA556	25	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	10	15	0	0	0	0	0	**25**

Land North of Guildford Road, Rudgwick/Bucks Green	**Rudgwick**		SA574	60	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	20	40	0	0	0	0	**60**
The Former Pig Farm, Rudgwick/ Bucks Green	**Rudgwick**		SA794	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5	0	0	0	0	0	**5**
Land at Rusper Glebe, Rusper	**Rusper**		SA080	12	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	12	0	0	0	0	0	0	**12**
Land north of East Street, Rusper	**Rusper**		SA872	20	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	10	10	0	0	0	0	0	**20**
Land West of Shoreham Road, Small Dole	**Small Dole (Henfield Parish)**		SA538	40	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	20	20	0	0	0	0	**40**
Land at Glebe Farm, Steyning SA742	**Steyning**	DC/21/2233/OUT		265	0	0	0	0	0	0	0	0	0	0	0	20	65	60	65	55	0	0	0	0	0	0	0	**265**
Land to the north of Melton Drive and Land South of Northlands Lane, Storrington	**Storrington**		SA361/732	70	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	10	60	0	0	0	0	0	**70**
Land at Rock Road, Storrington	**Storrington**		SA384	55	0	0	0	0	0	0	0	0	0	0	0	0	0	6	30	19	0	0	0	0	0	0	0	**55**
Rushfield, Land North of High Bar Lane, Thakeham SA039	**Thakeham**	DC/20/2577/FUL		25	0	0	0	0	0	0	0	0	0	0	0	15	10	0	0	0	0	0	0	0	0	0	0	**25**
Land to the North of High Bar Lane	**Thakeham**	DC/23/2152/FUL	SA873	40	0	0	0	0	0	0	0	0	0	0	0	20	20	0	0	0	0	0	0	0	0	0	0	**40**

Land South of Bell Road, Warnham	**Warnham**		SA071	20	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5	15	0	0	0	**20**
Land at Hatches Estate, West Chilts	**West Chilts**		SA066	15	0	0	0	0	0	0	0	0	0	0	0	0	0	15	0	0	0	0	0	0	0	0	**15**
Land West of Smock Alley, South of Little Haglands, West Chilts	**West Chilts**	DC/21/2007/FUL		15	0	0	0	0	0	0	0	0	0	0	4	10	0	0	0	0	0	0	0	0	0	0	**14**
Land East of Hatches House, West Chilts	**West Chilts**	DC/22/0639/FUL		8	0	0	0	0	0	0	0	0	0	0	8	0	0	0	0	0	0	0	0	0	0	0	**8**
Smaller Site Allocations							**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**127**	**200**	**122**	**223**	**174**	**149**	**300**	**230**	**125**	**90**	**55**	**0**	**1,795**
Windfalls							**0**	**0**	**0**	**0**	**0**	**0**	**120**	**120**	**120**	**120**	**120**	**120**	**120**	**120**	**120**	**120**	**120**	**120**	**120**	**120**	**1680**
TOTALS							**20/21**	**21/22**	**22/23**	**23/24**	**24/25**	**25/26**	**26/27**	**27/28**	**28/29**	**29/30**	**30/31**	**31/32**	**32/33**	**33/34**	**34/35**	**35/36**	**36/37**	**37/38**	**38/39**	**39/40**	**TOTAL 22/23-39/40**
Total Commitments (All permissions + Made NP Allocations)																											

1. Category A- Detailed Permissions for Strategic Sites & 5+ Sites & NP Sites										386	425	312	190	79	111	110	28	24	0	0	0	0	0	0	0	**1665**
2. Committed Small Sites (1-4)										100	100	60	0	0	0	0	0	0	0	0	0	0	0	0	0	**260**
3. Category B - Permissions for Strategic Sites & 10 + Sites										0	0	180	296	290	433	531	426	277	227	227	227	227	227	149	127	52	**3896**
4. Category B - NP Made Allocations										0	0	20	20	22	113	225	200	128	34	20	20	49	20	0	0	0	**871**
Total Commitments (All permissions & Made Allocations)										486	525	572	506	391	657	866	654	429	261	247	247	276	247	149	127	52	**6692**
Strategic Site Allocations										**0**	**0**	**0**	**0**	**50**	**100**	**195**	**270**	**330**	**330**	**330**	**230**	**230**	**230**	**230**	**230**	**290**	**3045**
Smaller Site Allocations										**0**	**0**	**0**	**0**	**0**	**127**	**200**	**122**	**223**	**174**	**149**	**300**	**230**	**125**	**90**	**55**	**0**	**1795**
Windfalls										**0**	**0**	**0**	**120**	**120**	**120**	**120**	**120**	**120**	**120**	**120**	**120**	**120**	**120**	**120**	**120**	**120**	**1680**
TOTAL HOMES IN HDC										**486**	**525**	**572**	**626**	**561**	**1004**	**1381**	**1166**	**1102**	**885**	**846**	**897**	**856**	**722**	**589**	**532**	**462**	**13212**
Stepped Requirement										**436**	**436**	**436**	**436**	**436**	**901**	**901**	**901**	**901**	**901**	**901**	**901**	**901**	**901**	**901**	**901**	**901**	**12992**
10% Buffer										**44**	**44**	**44**	**44**	**44**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**220**

Total										**480**	**480**	**480**	**480**	**480**	**901**	**901**	**901**	**901**	**901**	**901**	**901**	**901**	**901**	**901**	**901**	**901**	**13212**

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