

Technical Note: Examination of the North Hertfordshire Local Plan (2011-2031) - Response to Matter 21 Statement of NHDC on Air quality

Project: 1750
Client: Wymondley Parish Council
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1. Introduction

This note has been prepared on behalf of Wymondley Parish Council in response to the Statement of North Hertfordshire District Council (NHDC)¹ on air quality prepared for the Matter 21 hearing on 23 January (in this note referred to as the “NHDC Air Quality Statement”).

The planning system has an important role in air quality management. Statutory guidance on Local Air Quality Management, produced by the Secretary of State under the Environment Act 1995, states:

- Land-use planning is one of the powers District Councils have to improve air quality²;
- The planning and air quality functions of local authorities should be carried out in close cooperation³;
- Local authorities should include in their Air Quality Action Plan how the planning department will take ownership of the problem⁴; and
- Planning departments should be fully briefed on their public health duties and the risks associated with transport and planning policy⁵.

Similarly the National Planning Policy Framework (NPPF) provides guidance on air quality in relation to the local plan. Regarding the local plan Paragraph 124 states:

“Planning policies should sustain compliance with and contribute towards EU limit values or national objectives for pollutants, taking into account the presence of Air Quality Management Areas and the cumulative impacts on air quality from individual sites in local areas.”

The NPPF does not differentiate between areas which exceed the objective by a wide margin and those that exceed it by a small margin, nor takes into account the size of the area where an objective is exceeded. Policies should ensure compliance.

2. How the Local Plan seeks to Address Air Quality Issues

The NHDC Air Quality Statement explains that the transport modelling does not identify any significant issues with the operation of the highway network which cannot be addressed through mitigation measures, and that this modelling is conservative because the transport strategy aims to

¹ Document ED62 uploaded on 12 January 2018 to the local plan examination website.

² Paragraph 3.5, Defra, 2016, Part IV Environment Act 1995, Local Air Quality Management Policy Guidance (PG16)

³ Paragraph 9.1, ibid

⁴ Paragraph 5.2, ibid

⁵ Beneath Paragraph 7.14, ibid

reduce car traffic volumes below those used in the transport modelling. It notes that one of the principles of the Strategy is to seek “to reduce the impact of air quality management areas”.

The Transport Strategy does not say that it will reduce the impact on air quality nor reduce exposure to poor air quality. Instead it says it will reduce the impact of the management areas, implying that these areas intrinsically have a negative impact. The declaration of an air quality management area should be the first step towards improving air quality, and therefore is a positive measure.

There is a general misconception that traffic equals air quality when in reality the relationship between the two is complex. For example, in addition to the traffic flow other factors influencing air quality including: presence of street canons, local topography, prevailing wind direction (it is not always from the south west); proportion of primary NO₂ emissions, the formation of NO₂ in the atmosphere, proportion of different types of vehicle in the traffic (size, fuel type, emission standard, whether abatement is retrofitted).

Similarly there are misconceptions that traffic mitigation measures are also appropriate for improving air quality. In most locations where there have been significant improvements in local air quality this has been the result of i) a very large reduction in traffic e.g. by building a by-pass or pedestrianising a street; or ii) a large reduction in the emission per vehicle e.g. where buses are the main source, replacing them with very low emission buses or retrofitting appropriate abatement technologies.

The first type of measure requires a very large reduction in traffic to be effective⁶. It is unlikely that the sustainable transport policies in the local plan would be sufficient to ensure that the objectives are achieved in the Air Quality Management Areas in Hitchin. It should be remembered that the planning system’s requirement for sustainable transport predates the NPPF. It was also a requirement in PPS 13 Transport first published in 2001 and updated in 2011. There is no evidence that ‘sustainable transport policies’ in local plans have been effective at improving ambient air quality. The deadline for achieving the NO₂ objectives was 2005 i.e. 12 years ago.

The second type of measure specifically addresses air quality, will not affect highway capacity, and therefore is not a transport mitigation measure.

The air quality complexities and the seriousness of the issue are why an air quality assessment of the impact of the local plan is required, and why reliance on transport modelling is not sufficient. This modelling should follow the Institute of Air Quality Management’s policy on uncertainty in vehicle NO_x emissions within the assessment. Such modelling would then enable suitable air pollution mitigation measures to be identified.

The seriousness of the issue is illustrated by the Government’s ‘*UK plan for tackling roadside nitrogen dioxide concentrations*’ published in July 2017 which states that “*Poor air quality is the largest environmental risk to public health in the UK*’. The continuing exceedences so many years after the deadline made, Mr Justice Garnham, in his judgement on ClientEarth (No 3) vs Secretary of State, comment “*In the meanwhile, UK citizens have been exposed to significant health risks*”.

⁶ This is because there is a non-linear relationship between NO_x emission (a mixture of nitric oxide (NO) and NO₂) and ambient NO₂ concentrations.

3. How the Sustainability Appraisal Assesses Air Quality

NHDC's Air Quality Statement argues that the Draft Sustainability Appraisal (SA) includes relevant criteria to assess the options, policies and site allocations in the Plan.

The SA considered 21 objectives, none was explicitly on air pollution and just one sub-objective out of a total of 70 relates to air quality (Table 7). Sub objective 5(c) on health is related but implicitly includes a range of factors that affect public health in addition to air quality.

Whilst the SA may meet the requirements of the SEA Directive and SA, it is clear that it gives no weight to air quality despite the acknowledged importance of this issue for the protection of public health.

It is noted that Table 31 of the Sustainability Appraisal has been amended. It is unclear why it has only been revised with respect to SA objective 5(c) and not also to objective 3(d). Further amendment is required by increasing the size of the Hitchin cluster (Figure 7.4) to include Little Wymondley.

In addition it is unclear why this Table has been amended but not the plan-wide cumulative effects table (Table 33). The cumulative impact of the whole local plan on air quality is unknown until the appropriate air quality modelling is undertaken.

4. Design Policy D4: Air Quality

Wymondley Parish Council supports the first proposed amendment to policy D4. That is, the sentence which starts with "Planning permission will be granted **provided that** where development proposals: ..."

The Parish Council also supports the second proposed amendment to add "**Where an air quality impact assessment demonstrates that a development is unsustainable from a local air quality perspective the development will be refused**" provided the word "unsustainable" is replaced by the word "unacceptable" as in the Table of Actions dated 13 February 2018.

It would also be useful to include supporting text to explain the purpose of the final paragraph of the policy (i.e. to capture developments where it would be unreasonable to expect an air quality assessment).

5. Annex A: An Overview of Local Air Quality in the District of North Hertfordshire - Statement to Support the North Hertfordshire District Council Local Plan 2011-2031

This statement provides a comprehensive summary of historic air quality in the district and correctly identified the two main pollutants of concern as nitrogen dioxide (NO₂) and particulate matter (PM). There are two Air Quality Management Areas in Hitchin declared for exceedence of the annual mean nitrogen dioxide (NO₂) objective. The data presented in the statement shows exceedances in the Air Quality Management Areas for at least six or seven years.

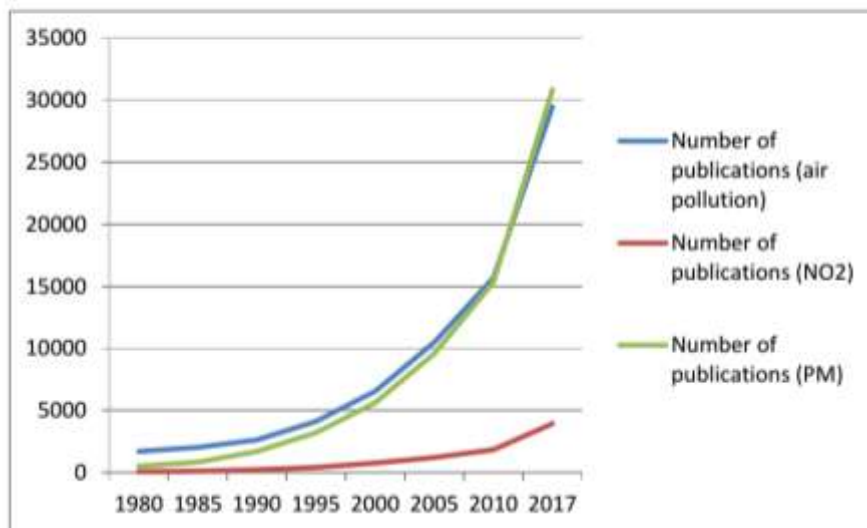
However, there are several points requiring clarification:

- a) "Air Quality Objectives are air quality thresholds that are considered to be acceptable in terms of what is scientifically known about the effects of each pollutant on health." (para 3.1)

The air quality objectives are set out in the Air Quality Strategy for England, Scotland, Wales, and Northern Ireland⁷ (AQS) as mandated by the Environment Act 1995. The AQS states that objectives are policy targets whereas standards are set purely with regard to scientific and medical evidence on the effects of the particular pollutant on health.

The objectives for the two key pollutants NO₂ and particulate matter (PM₁₀) are numerically the same as the EU limit values, which were formally adopted in a 1999 EU directive, and informally agreed a few years earlier. Since that time there has been a significant amount of research published on the health effects of air pollution as illustrated in the figure below prepared by Prof Frank Kelly, of King's College London and Chair of the Government's Committee of the Medical Effects of Air Pollution⁸.

Air pollution publications – PM versus NO₂



For many years it has been accepted that there is no threshold below which there are no health effects of particulate matter, and there is growing evidence that the same is true of long term exposure to NO₂. Effects on lung development in children have been seen at levels substantially below the objective. These children will never 'catch up' and will have reduced lung capacity throughout their lives.

As a consequence of the growth in the evidence of the health effects, local authorities are encouraged to reduce pollution levels even where the objectives are achieved⁹. Several, including NHDC measure PM_{2.5} because the more recent evidence shows that the correlation between PM_{2.5} exposure and a range of health effects, is greater than for the larger particulate matter PM₁₀.

⁷ Defra in partnership with the Scottish Executive, Welsh Assembly Government and Department of the Environment Northern Ireland, 2007. Air Quality Strategy for England, Scotland, Wales and Northern Ireland (volume 1).

⁸ Prof Frank, Kelly, Health effects of NO₂: do these differ from those associated with PM_{2.5} exposure and if so, how?, Routes to Clean Air Conference, 24-25 October 2017, Birmingham, Institute of Air Quality Management, 2017,?

⁹ Defra, Public Health England and the Local Government Association, 2017, A Briefing for Directors of Public Health

The NHDC Air quality Statement incorrectly states that there is no UK objective for PM_{2.5} (para 3.12). The AQS includes an objective for PM_{2.5} but it is not set in Regulation (hence no statutory requirement for local authorities to assess it).

The World Health Organization has set an annual mean air quality guideline for PM_{2.5} of 10µg/m³ (para 3.12). That is 60% lower than the UK objective of 25µg/m³ which was set in 2007.

In addition, there is a PM indicator for local authorities under the Public Health Outcomes Framework. Indicator 3.01 is “*The fraction of mortality attributable to particulate air pollution*”. In 2010 5.6% of deaths in North Hertfordshire were attributed to air pollution¹⁰.

b) Air quality data presented for Wymondley Parish (Table 5.1.4 and para 5.17).

Defra provide modelled background air quality data on a 1 km x km grid across the whole country. Table 5.1.4 shows this modelled data but provides no information regarding air quality close to major roads in the Parish. As roads are the main local source of pollution this data does not “demonstrate that there is no expectation of any Air Quality Objectives being exceeded. There are many examples of exceedences near roads where the background data show low concentrations.

A snapshot of NO₂ concentrations in Wymondley Parish has been provided to NHDC. This data indicates high concentrations may be occurring close to the A602. There are currently no dwellings very close to this road in the Parish. However the presence of Kingscott School and the playing fields suggest that further longer term monitoring close to the A602 would provide useful information.

Wymondley Parish Council are concerned that the cumulative impact of the NHDC plan with other plans in the surrounding area will have an adverse impact on the air quality close to the two major roads running through the Parish, namely the A602 and the A1, and the roads linking to them.

Summary

The NHDC local plan cannot be considered to be sound until a robust assessment of its air quality impacts has been undertaken and appropriate air quality mitigation measures have been identified and incorporated into the plan.

There are a number of sites allocated within the local plan, including Little Wymondley (WY1), which are likely to impact on the two Air Quality Management Areas in Hitchin.

Air quality is a very significant public health issue. Whilst the cumulative impact of the NHDC local plan needs to be considered within the sustainability appraisal, more robust assessment is also required to ensure that the plan can be delivered within air quality limits, consistent with the NPPF.

¹⁰ Page 14, Public Health England, 2014. Estimating Local Mortality Burden Associated with Particulate Air Pollution