

Hearing Statement on Air Quality in relation to the North Hertfordshire Local Plan

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Introduction

A policy paper issued by DEFRA in 2015 states that¹:

Air pollution, for example from road transport, harms our health and wellbeing. It is estimated to have an effect equivalent to 29,000 deaths each year and is expected to reduce the life expectancy of everyone in the UK by 6 months on average, at a cost of around £16 billion per year. Air pollution also damages biodiversity, reduces crop yields and contributes to climate change.

Road traffic is the main source of air pollution in North Hertfordshire². Unfortunately, NHDC's Local Plan is proposing to increase the population of Baldock by 80%, so it is reasonable to assume that the number of vehicles in the expanded Baldock will also grow by 80%³. As the level of congestion in Baldock increases, it is likely that existing air quality problems will become considerably worse.

This raises some worrying issues for the Local Plan:

- Nitrogen Dioxide levels are not being monitored in Station Road where levels of pollution caused by traffic congestion are likely to be higher than anywhere else in the town.
- Particulates are not being monitored anywhere in Baldock.
- Air quality is likely to be very poor on the northern link road.
- Based on Government guidelines, the Baldock North development will raise air quality concerns that must be addressed.

These four issues are discussed below.

Nitrogen Dioxide levels in Station Road.

Nitrogen Dioxide (NO₂) can irritate the airways of the lungs and increase the symptoms of people suffering from lung diseases⁴.

Nitrogen Dioxide levels in Baldock are monitored at⁵:

- Hitchin St (bus stop)
- Clothall Road
- Church Street

¹ <https://www.gov.uk/government/publications/2010-to-2015-government-policy-environmental-quality/2010-to-2015-government-policy-environmental-quality>

² T16: Baldock Air Quality Paper, Paragraph 2.12.

³ It will actually be higher than this, because car ownership per head is likely to increase, and because existing traffic will be diverted from the A1 / Baldock bypass onto the new link road.

⁴ <https://www.sheffield.gov.uk/home/pollution-nuisance/air-quality.html>

⁵ T16: Baldock Air Quality Paper, Section 3.

- Whitehorse St
- Hitchin St (town hall)

Readings in excess of the Air Quality Objective for NO₂ (40mg/m³) have been found in Whitehorse Street and Hitchin Street, but the most serious pollution has been detected in Church Street. This detector (NH88) is located at the south-western corner of Church Street opposite the town hall. Readings at most detectors seem to be high between November and January, and this detector measured 54.82mg/m³ (ie 37% above the limit) in December 2016. In the same month, Detectors NH61 (which is across the road from NH88 on the corner of the town hall) and NH72 (which is on Whitehorse Street opposite the Rose & Crown) both returned NO₂ readings that were more than 8% over the limit.

However, no detectors at all have been installed in the section of Station Road between the railway bridge and the highly-congested road junction. Queues of traffic are idling here for long periods during the morning and evening peaks, and there are frequent queues at other times of the day. Furthermore, air movement is restricted by the railway embankment, the elevated access road to the station and numerous buildings – including a large block of flats that has only recently been built. It might be expected that air pollution in this area would be at least as bad as in Whitehorse Street - and probably significantly worse - so it is hard to explain why no detector has been placed in this area.

None of the air quality reports seem to comment on this omission, although the Baldock Air Quality Paper notes that, even allowing for the proposed mitigations, modelling suggests that traffic delays at the problematic junction

“would increase by 2031 once the growth associated with the Local Plan is factored in. This would suggest there could be a deterioration in air quality both here and, consequentially, at other locations within Baldock as a result of the delays and / or traffic re-directing to alternative routes”⁶.

Air pollution is already at dangerous levels in some parts of Baldock. Since nobody has measured the current pollution levels in Station Road over the course of a year, it is not known how dangerous this “deterioration in air quality” might become. The council is planning developments that will increase the number of cars in the expanded Baldock by at least 80%, but it has no understanding of the impact on the area of Baldock that is most likely to suffer from increased air pollution. It is high time that the data was collected and a proper analysis carried out.

Particulates are not being monitored anywhere in Baldock.

A report prepared by the Air Quality Expert Group (AQEG) for DEFRA⁷ gives an overview of the evidence base for PM_{2.5} in the UK. It describes Particulates as follows:

“Particulate matter (PM) is the term used to describe condensed phase (solid or liquid) particles suspended in the atmosphere. Their potential for causing health problems is directly linked to the size of the particles. A growing body of research has pointed towards the smaller particles, in particular PM less than 2.5 µm in diameter (PM_{2.5}), as a metric more

⁶ T16 Baldock Air Quality Paper, Paragraph 4.8.

⁷ AIR QUALITY EXPERT GROUP, Fine Particulate Matter (PM_{2.5}) in the United Kingdom, 2012.

closely associated with adverse health effects than other metrics such as PM10 (particles with a diameter less than 10 µm).

The main traffic sources of PM2.5 are exhaust emissions from diesel vehicles (cars, light goods vehicles and heavy goods vehicles), together with tyre wear, brake wear and road surface abrasion from all vehicles. Fine particulate matter can travel deep into the lungs where they can cause inflammation and a worsening of heart and lung diseases⁸. Long-term exposure has been linked to cancer.

DEFRA's report states that the EU's Air Quality Directive⁹ (which defines standards by which air pollution can be assessed and establishes specific air quality objectives for PM2.5) was introduced because there is no evidence to indicate that there is a concentration of particulate matter below which health effects do NOT occur. The EU's Air Quality Directive has been in place since 2008, so it is extremely surprising (and disappointing) to find in the Baldock Air Quality Paper that:

"There has been no monitoring of PM2.5 (fine particulate matter) in North Hertfordshire, nor in much of the rest of the County, prior to 2016. Therefore, there is no first-hand monitoring data available for Baldock"¹⁰.

The first PM2.5 analyser was purchased by North Hertfordshire in 2016 and was deployed in Hitchin.

The Baldock Air Quality Paper goes on to say that DEFRA provide a website giving estimated air pollution levels at roadside locations across the UK¹¹. However, it turns out that their model is restricted to approximately 9,000 road links. These are all in urban areas and all are A roads or Motorways. It appears from examination of the model that the result for the whole of Baldock (and for Station Road in particular) is an estimate covering a wide geographic area and is not based on local measurements.

Given their complete lack of data about PM2.5 in Baldock, it is perhaps not surprising that NHDC have not yet identified any measures targeted specifically at reducing PM2.5. Instead, they are proposing the following:

- *"Encouraging a move away from internal combustion engine vehicles to ultra low emission vehicles (ULEV) will reduce PM2.5 emissions from exhausts; while*
- *"Measures to reduce road travel altogether will reduce PM2.5 emissions from brake and tyre wear and dust re-suspension."¹²*

It is not clear how NHDC will encourage people to move from vehicles with internal combustion engines to vehicles powered in other ways. Furthermore, it is not clear how building a brand-new link road that will attract traffic off the A1 / Baldock bypass into a newly-developed part of the town could be described as taking "measures to reduce road travel altogether". In reality, these two bullet points do not commit the council to take any action at all in relation to Station Road or other polluted parts of Baldock.

By its own admission, NHDC has no plans to reduce PM2.5 particulates in Baldock, and it appears that they do not even intend to start measuring PM2.5 in Baldock. Instead, they will do nothing and

⁸ <https://www.sheffield.gov.uk/home/pollution-nuisance/air-quality.html>

⁹ Directive on Ambient Air Quality and Cleaner Air for Europe (2008/50/EC).

¹⁰ T16: Baldock Air Quality Paper, Paragraph 3.8

¹¹ T16: Baldock Air Quality Paper, Paragraph 3.8

¹² T16: Baldock Air Quality Paper, Paragraph 3.13

hope for the best. In view of the large number of additional vehicles that will pass through Baldock as a result of their proposals, and the extra congestion that these vehicles will cause, their attempt to dismiss this health-critical issue with empty platitudes is nothing short of scandalous.

Air quality is likely to be very poor on the northern link road.

The Baldock Air Quality Paper¹³ includes the following statement:

“care also needs to be taken to ensure that the provision of link roads does not lead to ‘unintended consequences’ in terms of transport provision. The Baldock link road analysis suggests that the provision of any such route could create a short-cut for traffic travelling from the A1(M) junction 10 to the A505 eastbound towards Royston and vice versa. This is perceived to be a major factor behind the significant improvement in performance on the Royston Road approach to the A507 / B656 junction in the link road modelling exercise. The preferred route for longer distance and strategic traffic movements is to use the primary network of the A1(M) to Junction 9 and the A505 Baldock bypass.”

This critically-important statement confirms what objectors to NHDC’s plans for Baldock North have been saying: The northern link road will draw traffic off the trunk network into built-up areas of Baldock because it is half the distance of the alternative route via the A1 / Baldock bypass.

The Baldock Link Road Testing document confirms that the problem junction near the station “performs slightly better” as a result of adding the two link roads, but this slight improvement comes at a heavy price:

“The models show large increases in trips along Clothall Road and Station Road as well as large flows on the new link roads”¹⁴.

Based on the comments about Station Road earlier in this document, a “large increase” in traffic is likely to create a large increase in the levels of dangerous pollutants near the railway station. Furthermore, the “large flows” shown by the models on the new link roads could create another air pollution problem for Baldock, but this issue does not seem to have been addressed in any of the published documents. Once again, the signs of trouble are all around us, but the council seems unwilling to face up to the full consequences of what they are proposing.

Based on Government guidelines, the Baldock North development will raise air quality concerns that must be addressed.

The Environment Act 1995 places a statutory duty on local authorities to review the quality of the air within their area. Where it is predicted that the UK Air Quality Objectives are unlikely to be met, the local authority must declare an Air Quality Management Area (AQMA) and develop an action plan to improve air quality in that area.

NHDC’s Air Quality Planning Guidance Document¹⁵ states that

¹³ T16: Baldock Air Quality Paper, Paragraphs 4.22 – 4.23.

¹⁴ T15: Baldock Link Road Testing, p1.

¹⁵ NHDC Air Quality Planning Guidance Document, September 2016.

“The need for housing growth in the South East of England, with the anticipated need for North Hertfordshire to accommodate thousands of homes, has the potential to be the most significant cause of increased pollution.”

Importantly, this document recognises that planning applications should be refused if it becomes apparent that the application is unsustainable for air pollution reasons.

The government has provided guidelines for handling air quality issues in relation to planning¹⁶:

“Local Plans can affect air quality in a number of ways”

“In plan making, it is important to take into account air quality management areas and other areas where there could be specific requirements or limitations on new development because of air quality.”

“Considerations could include whether the development would significantly affect traffic in the immediate vicinity of the proposed development site or further afield. This could be by generating or increasing traffic congestion; significantly changing traffic volumes, vehicle speed or both; or significantly altering the traffic composition on local roads.”

“Concerns could arise if the development is likely to generate air quality impact in an area where air quality is known to be poor.”

Based on these guidelines, the Baldock North development will definitely raise air quality concerns.

The government has also published a flowchart¹⁷ to be followed for planning applications that raise air quality concerns. This flowchart requires the following information to be provided:

- Assess the existing air quality in the study area (“Existing Baseline”).
- Predict the future air quality without the development in place (“Future Baseline”).
- Predict the future air quality with the development in place (“With Mitigation”).

The complete lack of information about air quality in Station Road means that there is no Existing Baseline for the proposed Baldock North development. NHDC will therefore have to assemble a set of readings for Station Road that properly reflects the full range of seasonal variations that are seen in readings from other parts of Baldock, and will then have to come up with a convincing Future Baseline that is based on realistic mitigations and not just wishful thinking.

Conclusions

Some key messages from this paper are listed below:

- NHDC’s Local Plan is proposing to increase the population of Baldock by 80%, so it is reasonable to assume that the number of cars in the expanded Baldock will also grow by at least 80%. This incremental traffic will bring with it a corresponding increase in nitrogen dioxide, particulates and other health-threatening forms of air pollution.
- A significant proportion of this traffic will use Station Road because it is the shortest route from Baldock North to the station and the town centre.

¹⁶ <https://www.gov.uk/guidance/air-quality--3>

¹⁷ https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/572684/air-quality.pdf.

- The northern link road as currently proposed will draw traffic off the trunk network into built-up areas of Baldock because it is half the distance of the alternative route via the A1 / Baldock bypass. The modelling of the link roads shows that they will generate *“large increases in trips along Clothall Road and Station Road”*.
- The measurements that have been carried out so far have identified some areas of Baldock where the levels of air pollution already exceed safety limits. However, no measurements have been carried out in Station Road where the most serious air pollution is likely to be found.
- The measurements have only looked at nitrogen dioxide, and have ignored other dangerous forms of pollution such as PM2.5, Sulphur Dioxide (SO₂), Carbon Monoxide (CO), Ozone (O₃), Lead (Pb) and 1,3-Butadiene.
- Nitrogen Dioxide, Sulphur Dioxide and Ozone irritate the airways of the lungs and increase the symptoms of people suffering from lung diseases. Fine particulate matter can travel deep into the lungs where they can cause inflammation and a worsening of heart and lung diseases, with long-term exposure being linked to cancer. Carbon Monoxide prevents the uptake of oxygen by the blood, leading to a significant reduction in the supply of oxygen to the heart - particularly in people suffering from heart disease. The government has stated that air pollution is expected to reduce the life expectancy of everyone in the UK by an average of 6 months.
- NHDC’s Air Quality Planning Guidance Document recognises that planning applications should be refused if it becomes apparent that the application is unsustainable as a result of air pollution.
- The proposals in NHDC’s Local Plan could create dangerous levels of air pollution in some parts of Baldock, but the planners have very little information about current levels of air pollution, and appear to be intent on pressing ahead without establishing a proper Existing Baseline. To comply with government guidelines, NHDC and/or HCC will have to assemble a set of readings (for Station Road in particular) that properly reflect the full range of seasonal variations, and will then have to come up with a convincing Future Baseline that is based on realistic mitigations and not just wishful thinking.