



Watlington Parish Council

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Appeal by Archstone Projects Ltd and Bloor Homes Ltd

Reference: APP/Q3115/W/19/3222822

Application reference: P17/S3231/O: Land at Britwell Road, Watlington



Proof of Evidence – Watlington Parish Council Second Main Issue: The effect of the development on air quality

Document reference: 3222822 WPC PoE2

Witness and advocate for Watlington Parish Council: Councillor Andrew McAuley

September 2019



I am Andrew McAuley. I am a member of Watlington Parish Council and chair the Council's Planning Committee. I am also a member of the Watlington Neighbourhood Development Plan Advisory Board which the Parish Council formed to give advice on the delivery of the WNDP. I will act as a witness and advocate on behalf of Watlington Parish Council.

I am supported at the Inquiry, as a witness and an advocate, by Gill Bindoff who is chair of the Advisory Board and has led the development of the WNDP since 2015.

The Parish Council has no technical expertise on air pollution but is giving evidence on air quality because it is a major issue for the Watlington community and evidence is not being presented by South Oxfordshire District Council (SODC). The SODC Planning Committee on 10th April 2019 supported the planning officer's recommendation that, if the planning application at Britwell Road (P17/S3231/O) had been determined, it would have been refused. One of the grounds for refusal was that the development would have a severe adverse impact on the AQMA in the centre of Watlington¹. The SODC Statement of Case for the Inquiry, also produced in April 2019, gave the adverse impact on the AQMA as the second reason for refusal. The Parish Council was informed by email on 24 July 2019² that, as a result of further traffic modelling reported in the document 'Assessment of the impact of the proposed Edge Road on the Watlington AQMA' [15], the SODC Environmental Protection Team had withdrawn their objection to the development proposal.

The Parish Council's evidence is presented under the following headings:

1. Context and Summary
2. Impact of air pollution on human health

¹ SODC email to WPC, Officer's report Item 8 Planning Committee 10.04.19 paragraphs 6.26 to 6.34

² Appendix A: SODC email to WPC 24.07.19...



3. Assessment of proposals to mitigate the impact of the development on air quality in Watlington
4. The mitigation offered by the construction and use of the Watlington Edge Road.

The appendices to this document are referenced by footnotes on each page and provide copies of or extracts from other documents. The reference documents included in the separate documents file are listed in section 5 with the reference number by which they will be referenced in the text in square brackets, for example [4] for the TPP Traffic Study 2014.



1. Context and Summary

1.1 The centre of Watlington has been designated as an Air Quality Management Area (AQMA) since 2009. The designation followed monitoring of air quality by South Oxfordshire District Council (SODC) from 2003. Annual mean concentrations of nitrogen dioxide (NO²) are regularly above national objectives which are 40 micrograms in each cubic metre of air (40µg / m³) [9], [10], [11]. The table below shows the annual levels at the Town Hall from the nearest diffusion tube (SODC 32), and from the automatic monitor for day time hours (7am to 7pm) and for the full 24 hour day (see paragraph 2.5, page 8).

	2013	2014	2015	2016	2017	2018
24 hour day	38.9	37.4	34.3	37.1	32.4	31.4
7 am - 7 pm	54.3	57.6	49.5	52.0	46.5	43.7
Diffusion tube 32	51.7	49.3	38.7	44.2	51.6	35.1

1.2 The main source of NO² pollution in Watlington is traffic emissions. Emissions also contain small particulates PM10 and PM2.5. Braking, friction of tyres and dust on road surfaces can produce between 50% and 70% of the smallest particulates PM2.5 [12, page 16, para3.2.1] which are the most harmful to health.

1.3 The areas where recorded levels of NO² are highest is around the town centre and the Town Hall where traffic congestion is often greatest. This area is the main pinch point for traffic and has high buildings, including the Town Hall, which is a grade 2* listed building. These buildings create a street canyon effect. This is also an area busy with shoppers and families with children. In addition, people's homes and places of work are located where there are narrow pavements and very little space between buildings and passing traffic.



- 1.4 The Air Quality Assessment ¹ provided by the appellants for the development at Britwell Road concludes that 'Results show that operation of the proposed development will have *moderate adverse* impacts at some receptors located in the Watlington AQMA' (page 32 paragraph 5.12). 'Such impacts mean that the development overall is considered 'significant'' (page 35 paragraph 7.4). The updated assessment dated July 2019 reached different conclusions which were based on the 2018 local air quality conditions. The impact, without mitigation is now considered 'not significant' (page 31 paragraph 6.4). The Parish Council has concerns about the reliability of the 2018 air quality monitoring results which are detailed in paragraph 2.9.
- 1.5 No assessment has been made by the appellants of the cumulative impact on air quality in Watlington of the development in combination with other development sites in the local area. This is contrary to NPPF 180 and 181 and the NPPG on Air Quality. It is also contrary to Policy P2 in the Watlington Neighbourhood Development Plan [1] which was made by SODC in August 2018.
- 1.6 The Air Quality Assessment puts forward measures to mitigate the impact of the development which would be ineffective in reducing air pollution. It acknowledges that the construction of the Watlington Edge Road would be expected to improve air quality in the town centre by reducing congestion and the number of vehicles passing through the town.
- 1.7 Watlington Parish Council (WPC) wants to ensure that development does not contribute to air pollution in the town ([1], Policy 2). It is an unseen, avoidable, threat to the health of our community and has been polluting the air we breathe for at least ten years. The

¹ Air Quality Assessment: Land at Britwell Road, Air Quality Consultants, July 2018



Parish Council's aim is to reduce air pollution through the delivery of the integrated scheme for development in the WNDP which combines housing development (including the development at Britwell Road) with essential highway infrastructure. There needs to be confidence on the timing and delivery of the Edge Road in order to ensure that the development, in combination with other development in the local area, does not have a detrimental impact on air quality in Watlington. Both the construction period and the completion of the development need to be taken into account.



2. Impact of air pollution on human health

- 2.1 The Department for the Environment, Food and Rural Affairs published a Clean Air Strategy in January 2019 which sets out the Government's approach to improving air quality in the country. It identifies air pollution as the top environmental risk to human health in the UK, and the fourth greatest threat to public health after cancer, heart disease and obesity ¹. The Government also published Health Matters: air pollution in November 2018 ² which gives full details of the scale of the problem.
- 2.2 Public Health England (PHE) published a 'Review of the interventions to improve outdoor air quality and public health' in 2019 ³. The review is focussed on the need to take action at all levels to address air pollution which it says is an unacceptable, serious and avoidable source of harm to our health.
- 2.3 PHE also publishes estimates of deaths and life years lost caused by particulates in air pollution. In South Oxfordshire for the year of 2010 deaths attributable to this element of pollution was 59 with a total of 608 associated life years lost. SODC does not measure particulates but, as Watlington is one of only three towns with a designated AQMA in the district, some of these preventable deaths will have occurred in the local community.
- 2.4 Publication of emerging research is widely available and frequently appears in the national press ⁴. Public awareness of the damaging impact of air pollution is growing and evidence is coming forward of a close association with cardiovascular and respiratory disease, of the impact on other organs and the brain and a link with dementia.

¹ Appendix B: DEFRA Clean Air Strategy.

² Appendix C: Health Matters: Air Pollution Nov 2018

³ Appendix D: Public Health England - Review

⁴ Appendix E: Extracts from Air Quality News 06.09.19



The impact on children's health and physical development is becoming much better understood and, for the smallest particulates, there are no safe levels of pollution ¹.

2.5 In Watlington, levels of NO² are measured by SODC by an automatic analyser at the Town Hall and diffusion tubes located along Shirburn Street, Couching Street and Brook Street ([9], [10], and [11]). Levels of particulates are not measured.

2.6 Measurement of pollutants in the air is not an exact science. Diffusion tubes provide an indicative level of pollution with a relatively high level of uncertainty ². The variation can be as much as +/-25% . The tubes are usually in place for four weeks and are then sent to a laboratory for analysis. The process only provides one value for the whole of the time the tube was in place and there is also a delay in producing the measurements. The automatic monitoring apparatus is more reliable but results can vary by +/-15%. (Comparable figures quoted in the Air Quality Assessment ³ document are: Diffusion tubes +/-20% and automatic apparatus +/-10%). Raw data from the laboratory results are corrected for bias by comparing them to the automatic analyser results. The adjustment usually produces a slightly lower figure of NO² than the raw data from the tubes.

2.7 Other uncertainties are caused by varying weather patterns which can include short term fluctuations such as a change in wind direction. Meteorological conditions can also account for significant variations in pollutant concentrations from one year to another.

¹ Appendix FG: World Health Organisation, Ambient (outdoor) air quality and health

² Appendix HI: AEA Energy and Environment Diffusion Tubes for Ambient NO² Monitoring (Extract)

³ Air Quality Assessment: Land at Britwell Road, Air Quality Consultants, July 2019



- 2.8 Even the height at which diffusion tubes are located can affect the accuracy of monitoring. Concentrations of NO² decrease with height above street level. Ideally tubes should be set at an average breathing level but, in Watlington, they are fixed at 2.5m. There is no monitoring of NO² levels at the source of vehicle emissions which is closer to where children and babies in pushchairs are breathing in polluted air.
- 2.9 The SODC 2019 Annual Status Report [11] shows a greater variation than normal in the bias adjusted NO² figures for Watlington. The raw data for diffusion tubes has been reduced by 13% whereas the more usual bias factor is around 3%. This could be explained by the use of a local rather than the usual national bias adjustment factor. This large reduction has resulted in all the results being below the national objective which is exceptional. The 13% reduction could be explained by the use of a local rather than the usual national bias adjustment factor. Air Quality Consultants (July 2019) ¹ note that the data from diffusion tube monitoring in 2017 should be treated with caution because concentrations of NO² appear unusually high. Watlington Parish considers that the 2018 figures should be treated with similar caution because the concentrations are unusually low.
- 2.10 Despite all the uncertainties and variations which affect the monitoring of concentrations of NO² in the air, recorded pollution levels in the centre of Watlington have remained relatively constant and above national objectives with the exception of the 2018 results ([9], [10], and [11]). All the indications are that air pollution in Watlington is a constant and ongoing threat to the health of the community.

¹ Air Quality Consultants, Addendum July 2019



3. Assessment of proposals to mitigate the impact of the development on air pollution in Watlington

3.1 The Appellant has not assessed the impact of the development in combination with other development in the local area, which does not comply with the NPPF paragraphs 180 and 181. The proposals for mitigation only relate to the development itself ¹. The proposals are addressed below but it is important to note that it is very difficult to quantify the effects of mitigation measures. However, the recent Court of Appeal judgement on 12th September 2019 makes clear that specific evidence is required to show how effective proposed measures for mitigation are likely to be in reducing the use of private petrol and diesel vehicles in reducing forecast NO² emissions ².

3.2 Electric charging points in all garages and rapid electric vehicle charging points in communal carparks:

- i) The proportion of electric powered vehicles in the UK is still very low at around 2-3% of total vehicles numbers. No evidence has been provided about the expected take up of electric vehicles by residents of the development or of expected reduction in emissions in Watlington as a result of providing the charging points.
- ii) An increase in electric powered cars will not eliminate traffic related air pollution. While they do not emit exhaust fumes they still produce large amounts of tiny pollution particulates and there is no safe limit for these ³.

¹ Air Quality Assessment: Land at Britwell Road (page33, paragraph 3.1), Air Quality Consultants, July 2019

² Appendix JK: Court of Appeal decision 12.09.19 and Council for the Protection of Rural England press release

³ Appendix L: The Guardian, Electric cars are not the answer to air pollution DO YOU HAVE A DATE?



- iii) Sales of electric vehicles are increasing but there is no certainty that this will continue. High numbers of vehicles with diesel engines (which are the most polluting) are still being registered ¹.
- iv) The Department for Transport's vehicle licencing data indicates that there were almost 12.4 million diesels being driven in Britain at the end of 2017, this represents approximately 2 in every 5 vehicles on the roads ¹.
- v) The SODC Air Quality Action Plan 2014 [8] calculated that 44% of traffic emissions in Watlington was contributed by cars, 44% by HGVs and buses and 12% by vans and Light Goods Vehicles. Diesel emissions will make a significant contribution to these figures as diesel now represents 65% of total road fuel sales ¹.
- vi) In view of the evidence quoted above, it is unlikely that the take up of electric vehicles will increase significantly as a result of the provision of electric charging points for homes in the development. In addition, the number of vehicles with diesel engines are not likely to reduce in the short or medium term. Therefore, the installation of electric vehicle charging points in mitigation of the impact of the development on air quality in Watlington is unlikely to be effective.

3.3 Proposals to encourage sustainable means of transport:

- i) Public transport is very limited in Watlington and has been affected by the loss of subsidies for rural buses. Opportunities for improving public transport links would be welcomed by the Parish Council but are not likely to be able to replace or reduce

¹ Appendix.M: This is Money Report 12.04.2018



substantially the use of the private car for access to employment, services and facilities which are not available in Watlington.

- ii) The draft SODC Local Plan 2011 to 2034 recognises that within a rural district such as South Oxfordshire the car will continue to play a role in providing transport accessibility for many residents (paragraph 7.19).
- iii) The WNDP aims to improve safe, attractive, networks of walking and cycling routes in Watlington to contribute to health in the community. A pedestrian and cycling route through the development has been identified which is away from through traffic and leads to Cuxham Road via the existing spur to the Industrial Estate. This will give the opportunity to link up with new routes through Willow Close and new development on the allocated housing sites B and C, as well as to existing routes to the town centre, schools and recreational facilities.
- iv) It is not clear how the encouragement of sustainable means of transport will mitigate the impact of the development on air quality in Watlington. No evidence has been provided.

3.4 Proposals to contribute to the scheme to remove on-street parking in Couching Street and Shirburn Street.

- i) The scheme was proposed by SODC in the Air Quality Action Plan in 2014 [8] and was pursued in documents relating to the SODC Low Emissions Strategy (LES) in September 2014 [12] and September 2015 [13]. It has been strongly objected to by the Parish Council, local residents and businesses because it is flawed. The scheme used a desk based analysis and made no reference to the actual street patterns and physical obstructions in the town.



- ii) The LES proposed the removal of on-street parking in order to create a freight clearway through the town centre enabling traffic to flow at the limit of 30mph. This bears no relation to the narrow streets and pavements through this historic part of Watlington and, importantly, takes no account of the pinch point at the central crossroads by the Town Hall, where the carriageway is 4m wide, nor the other pinch point by 46 Couching Street where the carriageway narrows to 4.3m.
- iii) No modelling of traffic flows was undertaken, and no specific evidence was included in the LES to support the conclusion that the removal of the parking spaces and creation of the freight clearway would reduce air pollution.
- iv) The Parish Council made its objections clear to SODC¹ and carried out its own study using a simple modelling process². The WPC model indicated that the removal of parking spaces would make a negligible difference in vehicle waiting time in the Town Hall zone and would make little difference to air quality in the town centre where recorded levels of pollutants are at the highest in the AQMA.
- v) The Watlington Parking Study [14] carried out by AECOM confirmed the WPC results². The summary of the AECOM report includes the finding that 'Queuing at the central pinch point will remain comparable with or without parking in the short term, although there will be a brief spike in the northbound direction with parking removed. By 2033 the removal of parking on Couching Street will result in major increases in queuing at the central pinch point in both directions.' The Air Quality Consultants Addendum in

¹ Appendix NO: WPC, A response to South Oxfordshire Low Emission Strategy Consultation, March 2016

² Appendix.PQ: WPC, Traffic Modelling, November 2016



July 2019 states that it is not possible at this stage to quantify improvements associated with this mitigation proposal.



4. The mitigation offered by the construction and use of the Watlington Edge Road

- 4.1 The Edge Road offers the only reliable solution to the air quality problem in the town. It is the infrastructure which enables the proposed level of development, both in Watlington and along the B4009 corridor, to proceed without having an adverse impact on air quality.
- i) The mitigation section of the appellant's Air Quality Assessment July 2018 (page 34 paragraph 6.3) notes that with the Edge Road in place 'there would be a significant decrease in traffic going through Couching Street and Shirburn Street, compared to current predictions'. The Conclusions (page 36) indicate that the Edge Road would be expected to improve air quality although it would not be possible to quantify the impact.
 - ii) The Summary in the Watlington Parking Study [14] page 14, the final bullet point makes clear that the provision of the Edge Road would result in less delay, shorter queues and improved journey times compared to the existing situation in 2016. 'The Edge Road would provide significant traffic congestion and air quality benefits.'
 - iii) SODC commissioned a further study by Ricardo Energy and Environment which is dated May 2019 and is an assessment of the impact of the proposed Edge Road on the Watlington AQMA [15]. The Introduction states that the assessment is based on a VISSIM microsimulation traffic modelling study. The Parish Council is not aware if this is the same study which was carried out by AECOM in 2016 and which formed the basis for the Watlington Parking Study [14].
 - iv) The executive summary ([15] page 1) of the Ricardo assessment of 2019 ends as follows: 'This study shows that without the proposed Edge Road, little or no



improvement in air quality will occur between now and 2024, and NO² concentrations will remain close to or exceeding the annual mean objective set for the protection of human health.’ The Summary and Conclusions section ([15] page 22 final paragraph) says: ‘With the proposed Edge Road in place, traffic flows in Watlington decrease sharply and as a result predicted NO² concentrations are also reduced. With the proposed Edge Road there is a clear decrease in NO² concentrations and there are no predicted concentrations, even at road centrelines, within 20% of the objective’.

- v) The Parish Council considers that, in view of all the evidence, the delivery of the full Edge Road is the only way to mitigate predicted increases in traffic as a result of the development, other development in Watlington and in the wider local area. Air pollution will not fall below the national objectives without the Edge Road and it follows that development without the Edge Road being fully constructed and in use will contribute to continuing air pollution in Watlington.



5. Reference documents

The reference documents included in this binder are listed below. The identifier by which they will be referenced is included in the text in square brackets, for example [4] for the TPP Traffic Study 2014.

Reference Number	Title
1	Watlington Neighbourhood Development Plan
2	Watlington Neighbourhood Development Plan Examiner's Report
3	Watlington Neighbourhood development Plan Sustainability Appraisal and Environmental Report
4	Transport Planning Practice Watlington Traffic Study 2014
5	Mode Transport Planning Watlington Traffic Management Plan 2017
6	Watlington Conservation Area Character Study 2011
7	Pyrton Neighbourhood Plan Examiner's Report
8	SODC Air Quality Action Plan 2014
9	SODC Air Quality Annual Status Report 2017
10	SODC Air Quality Annual Status Report 2018
11	SODC Air Quality Annual Status Report 2019
12	South Oxfordshire Low Emission Strategy Study 2014
13	A Low Emission Strategy for South Oxfordshire 2015
14	Watlington Parking Study AECOM 2017
15	Assessment of the impact of the proposed Edge Road on the Watlington AQMA
16	Oxfordshire Infrastructure Strategy 2017
17	Chalgrove Airfield Briefing Pack AECOM 2017 (Extract)



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L	The Guardian, Electric cars are not the answer to air pollution
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