



## **BRIEFING NOTE ON AIR QUALITY IN THE BOROUGH**

### **Cllr Hayley Eachus, Cabinet Member for Regulatory Services and the Environment**

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<b>Report to</b>	<b>Community, Environment and Partnerships Committee on 17 January 2018</b>
<b>Ward(s):</b>	All
<b>Key Decision:</b>	No
<b>Appendix 1:</b>	Council Motion to be heard at Full Council 14 December 2017
<b>Appendix 2:</b>	Locations where the National Air Quality Standards apply
<b>Appendix 3:</b>	Map of Air Quality Monitoring Locations in the Borough
<b>Appendix 4:</b>	Basingstoke Transition Network report entitled Air Pollution in Basingstoke – Let us Breathe, dated 1 September 2017 <ul style="list-style-type: none"><li>• <a href="#">DEFRA Local Air Quality Policy Guidance (PG16), 2016</a></li><li>• <a href="#">DEFRA Local Air Quality Technical Guidance (TG16), 2016</a></li></ul>
<b>Papers relied on:</b>	<ul style="list-style-type: none"><li>• <a href="#">Basingstoke and Deane Borough Council Air Quality Reports</a></li><li>• <a href="#">DEFRA &amp; DOT UK plan for tackling roadside nitrogen dioxide concentrations, June 2017</a></li></ul>

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#### **Foreword - Cllr Hayley Eachus, Cabinet Member for Regulatory Services and the Environment**

*This paper responds to a recent council Motion on air quality. The council recognises that good air quality is important to ensuring the wellbeing of the public and we take our duties to monitor local air quality seriously.*

*The paper sets out the council's approach to monitoring and reporting on air quality in the Borough. None of the monitoring carried out by BDBC has indicated that any of the national standards are not being met.*

*The paper also responds to the points raised by the Basingstoke Transition Network (BTN) in their air quality report. The BTN report is in our view not reliable in terms of the assessment undertaken or the conclusions subsequently drawn. We therefore cannot find agreement with the analysis and findings which misrepresent the state of air quality in the borough, leading to unnecessary cause for public concern.*

*This paper also sets out some of the positive actions the council is taking to further improve local air quality.*

**Recommendation to Committee:**

- **This paper is presented for information, and its contents for noting and discussion**

## Background, corporate objectives and priorities

The purpose of this paper is to provide a summary of the work we undertake to fulfil our statutory duties in relation to local air quality meets national standards. The contents of the paper are strongly linked to the [Council Plan](#) priority of improving residents' quality of life.

## Glossary of terms

Term	Definition
LAQM	Local Air Quality Management
AQMA	Air Quality Management Area
AQAP	Air Quality Action Plan
DEFRA	Department for Environment, Food and Rural Affairs
BTN	Basingstoke Transition Network.

## Main considerations

### 1 Executive Summary

- 1.1 This paper sets out the council's duties in respect of managing local air quality and summarises the work carried out by the council to monitor and improve air quality.
- 1.2 The concerns raised by the Basingstoke Transition Network (BTN) Air Quality Report are the subject of a Full Council Motion which is set out in Appendix 1.
- 1.3 This paper responds to recent council motion and the concerns raised in the BTN report.

### 2 Local Authorities Duties to Review and Assess Local Air Quality

- 2.1 The Environment Act 1995 gives local authorities duties and responsibilities that are designed to secure improvements in air quality, particularly at the local level. These include an annual review and assessment of key pollutants in their area.
- 2.2 Health-based air quality objectives (prescribed in the Air Quality Standards Regulations 2010) have been set for seven key pollutants: benzene, 1,3-butadiene, carbon monoxide, lead, sulphur dioxide, nitrogen dioxide and particulate matter. The main pollutant of concern both locally and nationally is nitrogen dioxide, the primary source of which is emissions from road traffic.
- 2.3 If it appears that any of the air quality objectives are not likely to be achieved resulting in members of the public being exposed to the pollution, the local authority must designate any part of its area so affected, as an Air Quality Management Area (AQMA).

2.4 They must then prepare and implement a remedial Action Plan of measures to reduce air pollution levels in that AQMA. Where an AQMA is designated local authorities are required to produce an Air Quality Action Plan (AQAP) which comprises the measures to be put in place to address air quality issues.

## 2.5 **Annual Status Report**

2.6 Local authorities are required to submit an Annual Status Report (ASR) to DEFRA for consideration. DEFRA will provide comments to which local authorities should have due regard.

2.7 The four core requirements of the ASR are;

- 1) To report AQAP progress and other measures which impact on reducing concentrations of relevant pollutants below AQ objectives
- 2) To summarise monitoring and modelling data utilised to assess air quality in the local authorities' area, show the likelihood of breaches and the evidence base for the impact of Air Quality improvement measures.
- 3) To report new developments which may affect local air quality
- 4) To provide a public-facing executive summary for the lay reader to enable better local engagement on air quality issues and proposed improvement measures.

2.8 Where a local authority demonstrates through an ASR that an air quality objective is or will be exceeded at a relevant location an AQMA should be designated leading to the declaration of an Air Quality Action Plan (AQAP) within 12 months.

2.9 All the council's annual air quality reports published since 2010 are available on the council website: [www.basingstoke.gov.uk/rte.aspx?id=80](http://www.basingstoke.gov.uk/rte.aspx?id=80).

2.10 All the council's air quality reports have demonstrated that the national air quality standards are being met in the Borough.

## 3 **Air quality monitoring**

3.1 The council's Environmental Health team have been reviewing and assessing air quality within the borough for over 18 years. All our reports are submitted to DEFRA where they are appraised by an independent air quality consultant. DEFRA can then choose to either accept or reject the findings of the council's air quality report. To date all our air quality reports have been approved by DEFRA.

3.2 The main pollutant of concern in the Borough is nitrogen dioxide which is monitored by the use of diffusion tubes. Strict quality assurance and control procedures are followed throughout the monitoring process. The diffusion tubes are sent to an UKAS accredited laboratory for analysis. Officers follow the detailed procedures in the DEFRA Technical Guidance in respect of diffusion tube monitoring. The guidance includes requirements regarding

where tubes should be sited, quality assurance and quality control procedures, exposure times, storage of tubes, etc.

- 3.3 The council monitoring sites are targeted to those locations where there is a significant source of pollution and there is relevant public exposure at these locations. In the majority of cases we are measuring traffic pollution, however, we also monitor near industrial sites where there are air quality concerns. An example being the biomass plant that was located at Armstrong Road.
- 3.4 When deciding where to monitor air pollution we follow the guidance contained within DEFRA's Technical Guidance Note (TG16). This guidance includes a number of detailed screening tools and methodologies to assist local authorities in identifying potential pollution "hot spots".
- 3.5 We currently monitor in 6 locations (37 diffusion tubes in total in 2016) across the Borough, however these locations do change on a regular basis. For instance, we have recently undertaken monitoring for 12 months in Whitchurch and Tadley. In the past we have monitored along the A339, A30, M3, Kingsclere, Newtown Common and Houndmills. The map in Appendix 3 shows the locations where we have carried out air quality monitoring and the areas that we are currently monitoring.

#### **4 Comments on Basingstoke Transition Network report - Air Pollution in Basingstoke – Let us Breathe**

- 4.1 The Basingstoke Transition Network is a local environmental group who wish to encourage the transition from a fossil fuelled economy to a low carbon society.
- 4.2 The BTN took part in a National Air Quality Campaign being run by the Friends of the Earth (FOE) and located 14 nitrogen dioxide tubes at various locations in the Borough for a period of one month between February and March 2017. As such the results only provide a snapshot of air pollution levels at these locations and for the reasons given below should not be used to form any conclusion concerning the quality of air at these locations or the wider Borough.
- 4.3 Prior to BTN publishing their findings, officers met with the group to discuss the report and work undertaken. Our views regarding this work were conveyed to them at a meeting on 5 September.
- 4.4 A copy of the BTN air quality report is presented in Appendix 4.
- 4.5 The BTN report relates to levels of nitrogen dioxide, a pollutant linked to traffic emissions and being the dominant source of pollution in the Borough. The air quality objective for nitrogen dioxide is a 1 hour mean of  $200\mu\text{g}/\text{m}^3$  (not to be exceeded more than 18 times a year) and an annual mean of  $40\mu\text{g}/\text{m}^3$ . Therefore, the objectives cover both short and long term exposure to nitrogen dioxide. So when determining what is "relevant public exposure" for nitrogen dioxide we are concerned with locations where members of the public would be present for a period of time appropriate to the averaging period of the air

quality objective. This is explained further in Appendix 2. So, for nitrogen dioxide this is either the 1 hour or annual mean period.

4.6 Officers comments in relation to the monitoring undertaken by the BTN are as follows:-

4.6.1 The monitoring tubes were located at roadside locations where there is no relevant public exposure;

4.6.2 Data collection was only for a 1 month period. The DEFRA technical guidance states that diffusion tube monitoring should be carried out for at least 6 months (3 winter and 3 summer months) before the data can be deemed to be representative and reliable;

4.6.3 The data quoted in the report is “raw” data this has not been “biased” corrected. Diffusion tubes are affected by several sources of interference which can cause substantial under or overestimation (often referred to as “bias”). Clearly, any such “bias” is a problem in any situation where diffusion tube results are to be compared with air quality objectives. As a result it is necessary to quantify the “bias” of diffusion tube measurements and apply an appropriate bias adjustment factor to the annual mean. This is done by using the [national bias adjustment factors](#) issued by DEFRA.

4.6.4 The data also needs to be “distance corrected” to calculate the concentration at the nearest relevant exposure point using the DEFRA NO<sub>2</sub> fall-off with distance calculator before comparing against the objective. Levels of nitrogen dioxide drop off significantly with distance as can be seen from the table below. The distance correction calculator is not suitable for sites where the receptor is located at a distance of 50m or more from the monitoring location. Of the 5 BTN monitoring sites with levels above 40µg/m<sup>3</sup> only 2 have a receptor within 50m of the monitoring location. See Table 1 below:-

Table 1

<b>Location</b>	<b>Nitrogen dioxide concentration 2m from roadside</b>	<b>Distance to nearest receptor</b>	<b>Predicted Nitrogen dioxide concentration at nearest receptor</b>
RG24 9FB	42.3 µg/m <sup>3</sup>	45m	26.8 µg/m <sup>3</sup>
RG24 9JR	55.1 µg/m <sup>3</sup>	35m	28.9 µg/m <sup>3</sup>

4.6.5 Table 2 shows the approximate distance between the monitoring site at nearest receptor for the remaining three sites with levels above 40µg/m<sup>3</sup>.

Table 2

<b>Location</b>	<b>Nitrogen dioxide concentration 2m from roadside</b>	<b>Distance to nearest receptor</b>
RG24 8ZF	56.2 µg/m <sup>3</sup>	92m
RG21 4DZ	48.5 µg/m <sup>3</sup>	114m
RG21 6AA	41.4 µg/m <sup>3</sup>	220m

- 4.6.6 Whilst the distance correction formula cannot be applied (as they are more than 50 metres away from the nearest receptor) you can see from the previous table that the levels would be well below the annual mean objective of 40µg/m<sup>3</sup>.
- 4.6.7 Sections 7 and 7.1. quotes a level of 32µg/m<sup>3</sup> of nitrogen dioxide as being indicative of a breach of the hourly mean objective for nitrogen dioxide. This is incorrect. Exceedances of the NO<sub>2</sub> 1-hour mean are unlikely to occur where the annual mean is below 60µg/m<sup>3</sup>. None of the monitoring carried out by the council or BTN indicate that the hourly mean objective for nitrogen dioxide is not being met.
- 4.6.8 Section 8 – Proposed Actions to Cut Pollution
- 4.6.9 The M3 and other major roads within our district have been screened and assessed during previous rounds of air quality reviews and assessments and were not identified as areas with likely exceedances of the air quality objectives.
- 4.6.10 Section 8.2 – The Local Plan in providing sites for homes and jobs attempts to reduce the need to travel, by ensuring that homes are available near jobs and vice versa. Alongside this, larger sites make provision for on-site schools / community facilities etc., all to ensure that the need to travel far is minimised and that you can walk / cycle / use public transport. However, in many ways, we can't actual 'control' behaviour about where people live / work / shop, so it's really about providing the opportunity. It's also made more difficult by things like parental choice about which schools children attend.
- 4.6.11 Section 8.2 – The report recognises that we have a Cycling Strategy in place and we're working with HCC as the Local Highway Authority (who has ultimate responsibility for the roads etc.) to improve facilities for cyclists. HCC and Basingstoke and Deane are currently leading on a town centre transport study to look at how access to the town centre can be maintained and improved, including making sure that places like Basing View are better connected to the town centre for non-car modes. This will include longer-term studies to consider the scope for significantly improved public transport from outlying areas to the town centre and railway station to really provide a shift in modes, which will ultimately be needed given predicted traffic flows in the future. Part of this wider work will look at the issue of car parking in the town centre.

4.6.12 We have also set out proposals to introduce a maximum age limit for licenced taxi's and private hire vehicles as part of a new Taxi and Private Hire Licensing Policy.

#### 4.6.13 Section 9

- Point 1 - We are in favour of raising public awareness of air pollution and are happy to work in partnership with the group to achieve this.
- Point 2 - We review our air quality monitoring sites annually and have taken the views of BTN on board in identifying some new monitoring locations. The monitoring sites will be at locations where traffic flows are high and there is a relevant public exposure. The new sites are as follows:-
  - A340 – near The Chapel/Sunnyside Cottages, Aldermaston Road, Sherborne St John;
  - New housing development near hospital -Wadham Gardens area;
  - Roman Road Close to Portway Place;
  - Plus 2 others along Roman Road;
  - Adjacent to Skyline Plaza;
  - Winchester Road A30 – near Basingstoke Golf Club/Hounsme Fields Developments;
  - Adjacent to 1-9 Winston House, Sinclair Drive off Churchill Way West;
  - Nr. 416 Worting Road;
  - Adjacent to the fountain in Eastrop Way;
  - Nr. level crossing at Bramley.
- Point 3 – we currently have an electric Nissan Leaf pool car, and have installed a rapid charge point in Central Car Park, with a further two charge points owned by HCC in another council car park, and are considering options as to how we could improve both usage of these and also to provide additional charge-points in the future.
- Point 6 - the air quality impact of proposed developments are taken into consideration at the planning stage and where necessary the applicant is required to submit an Air Quality Impact assessment. We are in the process of reviewing the parking standards that we apply to new development (i.e. the number of spaces to be provided for each home / office) and are considering the scope to include a passive requirement for the future installation of charge points, although this is yet to be confirmed.
- Point 7 – The council's Economic Development Manager, has been working on a SMART Basingstoke project to look at the options to make better use of technology to share information, make journeys more seamless, working with partners etc.

## 5 **'My Journey Hampshire' Schools Initiative**

5.1 HCCs Travel Planning team are currently working with 24 Basingstoke schools to promote active and sustainable travel through the nationally accredited school travel planning 'STARS' scheme. Modeshift STARS (Sustainable Travel Accreditation and Recognition for Schools) is a national

schools awards scheme that has been established to recognise schools that have demonstrated excellence in supporting cycling, walking and other forms of sustainable travel.

- 5.2 The team has been raising awareness about air quality issues associated with transport through the My Journey Hampshire website and digital newsletter for schools. In addition, October is International Walk to School month. This year's 'Walktober' theme was 'Walk away from pollution' and promotional events were run to encourage families and pupils to walk, scoot or cycle to school along quieter routes with lower levels of air pollution. In Basingstoke Walktober events were held at North Waltham Primary, Hatch Warren Infants and Juniors and Castle Hill Primary School. Four Lanes and Manor Field Infant Schools also took part in the 'Walk away from pollution' photo competition from.
- 5.3 In addition, in response to concerns raised by some local residents, HCC in partnership with the walking charity Living Streets, is about to start to work with these schools to raise awareness of the pollution caused by parents leaving their engines idling when waiting to collect their children.

## **6 UK plan for tackling roadside nitrogen dioxide concentrations**

- 6.1 The UK plan for tackling roadside nitrogen dioxide concentrations, published in July 2017, sets out how the Government will improve air quality to meet EU air quality targets, in the shortest possible time. This includes the intention that conventional car and van sales would end by 2040, and for almost every car and van on the road to be a zero emission vehicle by 2050 as well as other policy measures aimed at reducing pollution.

## **7 Summary of current and future Basingstoke and Deane actions**

- 7.1 The council takes air quality issues and relevant statutory responsibilities very seriously and fully complied with our duties under the Environment Act 1995.
- 7.2 Officers with specific training and experience in local air quality management carry out regular reviews of local air quality and have been monitoring air quality in the Borough for over 16 years. The level of air quality monitoring carried out by BDBC is consistent with other local authorities. The council reviews the locations where air quality monitoring is carried out annually. This review is informed by any recommendations arising from the annual air quality assessment report.
- 7.3 All of the annual reports are compiled by a specialist consultancy and submitted to DEFRA for their approval. DEFRA use a specialist consultancy to review these air quality reports to ensure these assessments have followed the procedures and methodologies set out in the technical guidance and that the conclusions are scientifically robust.
- 7.4 All the previous reports show that air quality in the Borough is generally very good and that the national air quality standards are being met in the Borough. The council is not therefore required to take any further steps to address any air quality problems.

- 7.5 There are a small number of locations where the combination of traffic, road layout and geography has resulted in elevated levels of nitrogen dioxide. However we are actively working with HCC to ensure any actions that can be taken to reduce congestion are explored as part of the emerging transport strategy.
- 7.6 Officers have met with representatives of the BTN to discuss their report. Officers have taken the BTN's views into account in establishing some new air quality monitoring locations. The BTN report has also been shared with HCC's Travel Planning and Strategic Transport teams.
- 7.7 The council will continue to monitor and review air quality in line with the duties outlined in the Environment Act 1995.

**Date: 17 January 2018**

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<b>Status</b>	<i>Open</i>
<b>Confidentiality</b>	It is considered that information contained within <i>this report (and appendices)</i> do not contain exempt information under the meaning of Schedule 12A of the Local Government Act 1972, as amended, and therefore can be made public.

## Appendix 1

### Council Motion - Air Quality in Basingstoke & Deane

Mover – Cllr Paul Harvey

Seconder – Cllr Andrew McCormick

#### **Council Notes**

- The report published by the Basingstoke Transition Network (BTN) which details concerns about the quality of air in Basingstoke.
- That poor air quality can directly affect the health of residents now and in the future, and that this issue is a matter of concern to people and communities across the Borough.
- The survey conducted by BTN which highlights areas of the town that by the measure of the devices used give cause for concern:

Monitor Location	Postcode	NO <sub>x</sub> µg/m <sup>3</sup>	Above below limit? or legal
Thornhill Traffic Lights, Chineham	RG24 8ZF	56.2	above
Roman Road	RG24 9JR	55.1	above
Eastrop Roundabout	RG21 4DZ	48.5	above
Hospital	RG24 9FB	42.3	above
Thornycroft Roundabout	RG21 6AA	41.4	above
New Road	RG21 7PH	39.1	below
Winchester Road Roundabout	RG21 8YR	39.0	below
Kempshott Pedestrian Crossing	RG22 4EU	38.1	below
Oakridge Road	RG21 5RS	32.3	below
Pack Lane	RG22 5HW	29.9	below
Black Dam Roundabout	RG21 4PA	28.1	below
West Ham Roundabout	RG22 6PD	27.5	below
Viables Roundabout	RG21 7BL	26.9	below
Popley Way Crossing	RG24 9PX	26.2	below

Table 1: Results of air NO<sub>x</sub> monitoring by BTN/Friends of the Earth, analysed by King's College, London.

#### **Council Resolves**

- That this council will take the issue of air quality seriously and investigate thoroughly the issues raised by the BTN report and survey.
- To thank the Chair of CEP for agreeing to take the issue of air quality and the BTN report and survey as an item in this municipal years work programme.
- That the cabinet will authorise the undertaking of work/research to establish facts and evidence for the CEP Committee to review that offers an impartial

and scientifically robust analysis of air quality in Basingstoke & Deane to support the work begun by BTN.

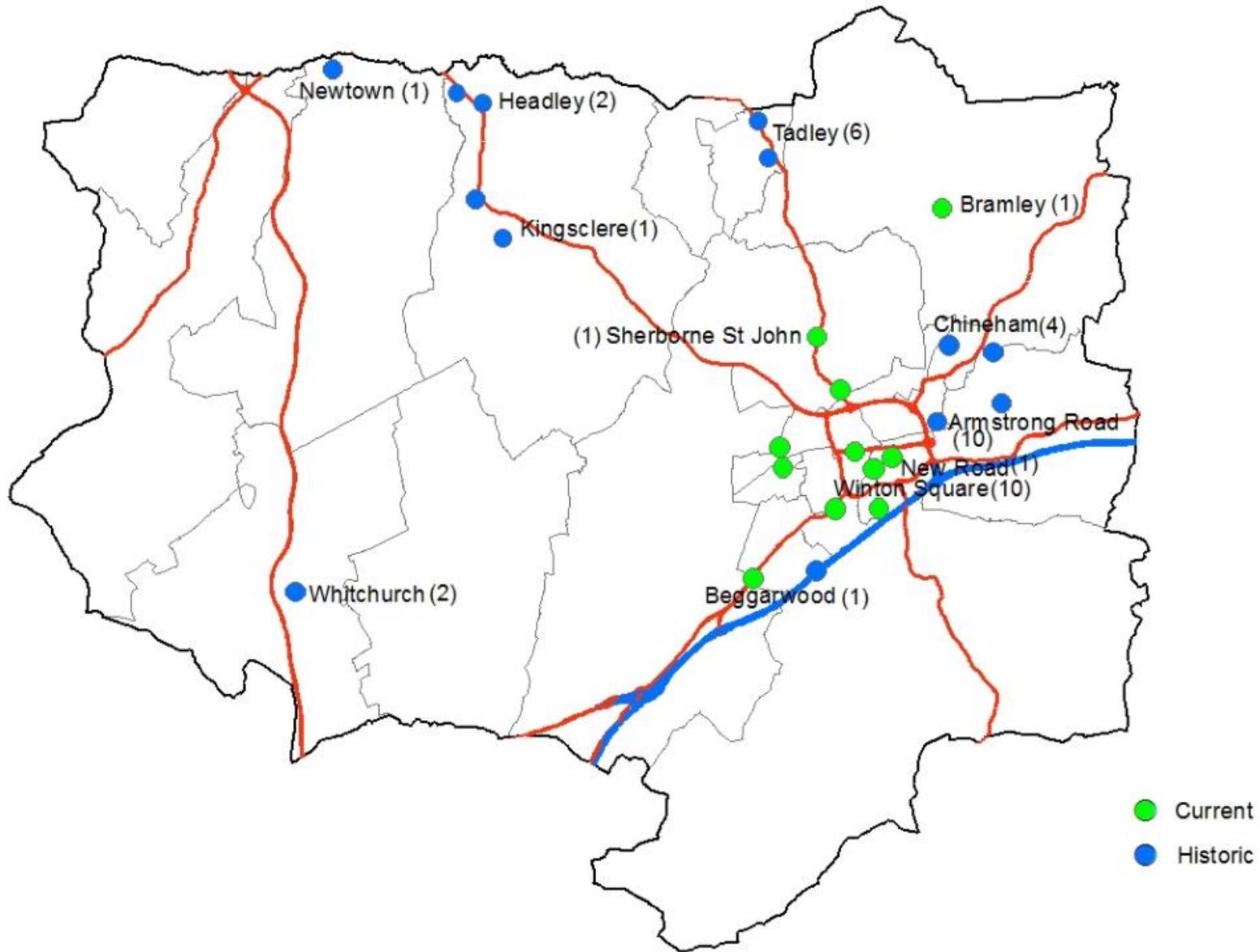
- For the CEP Committee to consider the evidence gathered and working with the Cabinet draw up an action plan and a series of policy recommendations to begin to address the issues and concerns identified.
- That this Council commits itself to implement a much better and more comprehensive system for the ongoing monitoring of air quality in the Borough, gathering evidence on which to develop future policy and action plans.

**Appendix 2 – Locations where the National Air Quality Standards apply**

Averaging Period	Objectives should apply at:	Objectives should generally not apply at:
Annual mean	All locations where members of the public might be regularly exposed. Building façades of residential properties, schools, hospitals, care homes etc.	<p>Building façades of offices or other places of work where members of the public do not have regular access.</p> <p>Hotels, unless people live there as their permanent residence.</p> <p>Gardens of residential properties*.</p> <p>Kerbside sites (as opposed to locations at the building façade), or any other location where public exposure is expected to be short term.</p>
1-hour mean	<p>All locations where the annual mean and 24 and 8-hour mean objectives apply.</p> <p>Kerbside sites (for example, pavements of busy shopping streets).</p> <p>Those parts of car parks, bus stations and railway stations etc. which are not fully enclosed, where members of the public might reasonably be expected to spend one hour or more.</p> <p>Any outdoor locations where members of the public might reasonably be expected to spend one hour or longer.</p>	Kerbside sites where the public would not be expected to have regular access.

\* Such locations should represent parts of the garden where relevant public exposure to pollutants is likely, for example where there is seating or play areas. It is unlikely that relevant public exposure to pollutants would occur at the extremities of the garden boundary, or in front gardens, although local judgement should always be applied.

**Appendix 3 – Air Quality Monitoring Locations in BDBC (number in brackets = number of diffusion tubes at each location)**



**Appendix 4: Basingstoke Transition Network report entitled Air Pollution in Basingstoke – Let us Breathe, dated 1 September 2017**