
Air Quality Status Reports 2021

Committee considering report:	Joint Public Protection Committee
Date of Committee:	5 October 2022
Chair of Committee:	Councillor Thomas Marino
Date JMB agreed report:	26 September 2022
Report Author:	Suzanne McLaughlin
Forward Plan Ref:	JPPC4064

1. Purpose of the Report

- 1.1 To inform the Joint Public Protection Committee (JPPC) of the submission and results of the annual air quality reports for Bracknell Forest (BFC) and West Berkshire Councils (WBC). These reports are for the monitoring data and action plan progress for the calendar year 2021.
- 1.2 To inform the JPPC that the annual air quality report for Wokingham Borough Council, written by the Public Protection Partnership (PPP), has also been submitted and the results received and passed on to Wokingham Borough Council in accordance with the revised arrangements following their departure from the partnership.

2. Recommendations

The Committee:

- 2.1 **NOTES** the contents of the two Air Quality Annual Status Reports as set out in Appendix A (BFC) and Appendix C (WBC).
- 2.2 **NOTES** the feedback from the Department of Environment, Food and Rural Affairs (DEFRA) on the reports as set out in Appendix B (BFC) and Appendix D (WBC).
- 2.3 **NOTES** the progress on the measures to improve air quality set out in each report.
- 2.4 **APPROVES** the ongoing and planned future measures to improve air quality set in each report.
- 2.5 **NOTES** that the Air Quality Status Report produced by the Public Protection Partnership (PPP) on behalf of Wokingham Borough Council has been submitted to DEFRA, the results received and both have been passed on to the authority for processing under their governance arrangements.

3. Implications and Impact Assessment

Implication	Commentary
Financial:	<p>Work relating to Air Quality monitoring and reporting is funded from the general revenue budget allocated to the JPPC. A number of proposals in the action plans continue to require additional funding to implement whilst others are relatively low cost and are covered from the PPP revenue budget. Grant funding from Defra has been available and applied for annually by the PPP.</p> <p>In addition, in March 2021, West Berkshire Council (on behalf of the Partnership) was awarded £259,406 from DEFRA to fund a project focused on behavioural change for the residents who drive in the three boroughs by launching an anti-idling campaign as well as PM2.5 monitoring in / near the Air Quality Management Areas (AQMAs).</p>
Human Resource:	<p>Staff who conduct this work are a shared resource under the Inter Authority Agreement (IAA). The Team also undertake Air Quality work for Wokingham BC under the revised contractual agreement.</p> <p>One benefit of the shared service is the ability to have staff that specialise in areas such as this and the service is fortunate to have a number of officers with significant expertise on environmental matters generally and air quality specifically.</p> <p>The Grant from DEFRA has meant that the authority has been able to appoint an Air Quality Officer on a fixed term contract until September 2023 to support the anti-idling campaign.</p>
Legal:	<p>Under the Local Air Quality Management (LAQM) system local authorities are legally required to assess air quality in their area and designate Air Quality Management Areas (AQMAs) if improvements are necessary.</p> <p>Where an AQMA is designated, local authorities are required to produce an Air Quality Action Plan (AQAP) describing the pollution reduction measures it will put in place. There are two AQMAs in West Berkshire and two in Bracknell Forest.</p>
Risk Management:	<p>This is a legal requirement under the Environment Act 2005. Failure to comply with our statutory obligations could present the risk of challenge to the PPP partner authorities</p>
Property:	<p>There are no direct property implications arising from this report.</p>
Policy:	<p>The Inter-Authority Agreement (IAA) identified Environmental Protection as one of the five Strategic Priorities for the Joint Public Protection Committee.</p> <p>Under this heading the Committee in turn identified air quality as a priority for 2021/22. West Berkshire has declared a climate emergency. They have embedded Air Quality improvements into their Environment Strategy and Climate Emergency Action Plans.</p>

	Bracknell Forest Council's Climate Change strategy was completed and published in January 2021 and have a target of net carbon zero by 2050.			
	Positive	Neutral	Negative	Commentary
Equalities Impact:				
A Are there any aspects of the proposed decision, including how it is delivered or accessed, that could impact on inequality?		x		No specific groups are affected by the contents of the proposals as there are no decisions being made. Air quality can be particularly harmful to the young, elderly, pregnant and those suffering ill health. Consideration to all these matters are given in this report and appendices and / or the national clean air strategy.
B Will the proposed decision have an impact upon the lives of people with protected characteristics, including employees and service users?		x		No specific groups are affected by the contents of the proposals as there are no decisions being made. Air quality can be particularly harmful to the young, elderly, pregnant and those suffering ill health. Consideration to all these matters are given in this report and appendices and / or the national clean air strategy.
Environmental Impact:	x			Under the Local Air Quality Management (LAQM) system local authorities are legally required to assess air quality in their area and designate Air Quality Management Areas (AQMAs) if improvements are necessary. Where an AQMA is designated, local authorities are required to produce an Air Quality Action Plan (AQAP) describing the pollution reduction measures it will put in place. These reports are therefore designed to have a positive impact on the environment
Health Impact:	x			Although there has been a reduction in air pollution since the 1970s, poor air quality is still the largest environmental risk to public health in the UK. It shortens lives and reduces quality of life, particularly amongst the most vulnerable, the young and old, and those living with health conditions.

			Ongoing monitoring and where appropriate the creation of action plans is designed to improve the quality of lives of our residents.
ICT or Digital Services Impact:		x	None The Air Quality Status Reports will be published on the PPP website.
PPP Priorities :	x		The Inter-Authority Agreement (IAA) identified Environmental Protection as one of the five Strategic Priorities for the Joint Public Protection Committee. Under this heading the Committee in turn identified air quality as a priority for 2021/22.
Data Impact:		X	None
Consultation and Engagement:	Local authorities are required to submit an Annual Status Report (ASR) to the Department for Environment, Food and Rural Affairs (DEFRA) each year and a template is provide.		
Other Options Considered:	None – The production of the reports is a statutory requirement.		

4. Executive Summary

- 4.1 Local authorities are required to submit an Annual Status Report (ASR) to the Department for Environment, Food and Rural Affairs (DEFRA) each year and a template is provided. The overall aim of this document is to report on progress in achieving reductions in concentrations of emissions relating to relevant pollutants below air quality objective levels. It is also where local authorities identify new or changing sources of emissions.
- 4.2 On completion, local authorities should submit their report to the Secretary of State (DEFRA) for consideration, who will provide comments back in a timely manner and to which the local authorities are expected to have regard.
- 4.3 Core requirements of the ASR:
- To report progress on the implementation of measures in the local air quality action plan and other measures and their impact in reducing concentrations below air quality objectives.
 - To provide a summary of monitoring/modelling data (either locally retrieved and/or from the national network) in order to assess the air quality situation in the area and the likelihood of air quality breaches, and to provide the necessary evidence base for the impact of air quality measures.
 - To report on significant new developments that might affect local air quality.
 - To present information in a public-facing executive summary for the lay reader so that the local public can more easily engage with local air quality issues and measures taken to improve it.

- 4.4 Annually DEFRA set a deadline for submission and there are implications of late submission in respect of whether air quality grant bids will be favourably received. The Service has again completed and submitted the reports for all three authorities within the appropriate timescales.
- 4.5 The PPP understands the importance of DEFRA approving the reports as the data is used by third parties in planning applications, as well as in-house decisions by Highways and Transport Planning colleagues. In addition the increased significance is recognised as identified actions are now intrinsically linked with Climate Emergency Plans and Environmental Strategies.

5. Report Submission

- 5.1 Air quality monitoring and improvement contributes to a number of principal priorities of the PPP, and continues to be identified as such in 2022-23 with synergies directly with climate change and environmental protection. In Summer 2019 all PPP local authorities made commitments with respect to climate change, and air quality continues to be regularly in the news, alongside, the cross cutting climate change theme.
- 5.2 Although Wokingham Borough Council has opted to withdraw from the Partnership the PPP continues to undertake air quality work for the local authority under a revised contractual arrangement. The three Annual Status Reports were completed in-house by the deadline of the 30 June 2022. The reports were submitted as follows;
- Bracknell Forest 27th June 2022
 - West Berkshire 27th June 2022
 - Wokingham 27th June 2022

6. Impact of Covid Lockdowns on Air Quality

- 6.1 Members were previously informed that , as was to be expected, the onset of the Covid pandemic did have an impact on air quality due to reduced traffic movement. A decision was taken during the various lockdowns and restrictions in 2020 and 2021 to continue monitoring air quality.
- 6.2 The 2021 levels of nitrogen dioxide generally increased compared to 2020. This is due to the increase in traffic levels.
- 6.3 During 2020 and 2021 there was a greater reduction in Nitrogen Dioxide (NO₂) levels during the year when compared to 2019, and there was an even greater reduction during the periods of the national lockdowns.
- 6.4 At the time of submission of the ASR reports the traffic flows for 2021 were still lower than 2019. By the end of 2021 the traffic levels were still below the comparable 2019 time period. Comparing 2019 and 2021 monthly trends in traffic, the pattern is broadly the same. Of the three years 2019 to 2021, as expected, the pollution and traffic levels are the lowest in 2020. In 2020 the NO₂ and traffic levels dropped significantly in April – June during lockdown 1, and then increased from July to October. Levels dropped again with lockdown 2 (October to December).

- 6.5 A summary for each area can be found in the Executive Summary at the beginning of each report.

7. Bracknell Forest Council

- 7.1 There are two Air Quality Management Areas (AQMAs) declared across Bracknell Forest Borough Council: AQMA “Area 1: The Bagshot Road (A322) Horse and Groom Roundabout Downshire Way AQMA” (Bracknell AQMA) and AQMA “Area 2: The Bracknell Road (B3348) and Crowthorne High Street, Crowthorne AQMA”.
- 7.2 The major source of air quality pollutants in Bracknell Forest is emissions from road transport. In particular the contribution from the A322 in Bracknell, the B3348/High Street and Sandhurst Road Crowthorne have been identified as significant. The main pollutant of concern is NO₂ and to a lesser extent the increased levels of particulate matter.
- 7.3 The levels of NO₂ in 2021 have shown a decreasing trend since 2017. The annualised continuous monitored NO₂ Annual Mean in 2021, of 29.9 µg/m³ at Downshire Way did not exceed the Air Quality Objective level of 40µg/m³ and there were no exceedances of the 1-hour objective of 200 µg/m³ at Downshire Way. The 2020 report states that in 2020 the annualised annual mean was 26.9 µg/m³.
- 7.4 There have been no exceedances of the Objectives since before 2017.
- 7.5 There were no exceedances of the ratified, bias corrected, annualised and distance corrected diffusion tubes within the Bracknell and Crowthorne AQMAs. There were no locations greater than 60µg/m³ which further indicates that there are unlikely to be any exceedance of the 1-hour Objective. All of the 2021 sites showed decreased levels compared with 2019, due to the pandemic lockdowns. However, the levels have been reducing over the last five years since 2017 in any event.
- 7.6 The Particular Matter (PM₁₀), which is monitored in the Bracknell AQMA (when annualised) measured 17.1µg/m³ and did not exceed the Annual Mean Objective of 40µg/m³. The results also showed no exceedances of the 24 hour Annual Mean of 50µg/m³, which is not to be exceeded more than 35 times a year. In 2020 the annual mean concentration was 18.35 µg/m³. The PM₁₀ level also demonstrates a decreasing trend since 2017.
- 7.7 Bracknell Forest produced an Air Quality Action Plan in 2014 which was updated in 2016. The Plan outlines local measures to improve pollution levels within the AQMAs and more widely across the borough. The action plan is integrated with the delivery of the adopted Local Transport Plan (LTP) to improve local air quality and climate change, through joint working with the Council’s Environmental Health, Transport Planning and Planning Divisions.

Actions to Improve Air Quality

- 7.8 Smoothing the traffic flow and reducing journey times and major highway improvements along the A329/A322 corridor have resulted in a 59.2% reduction in NO₂ levels when compared to 2011. Works to reduce the bottleneck on Downshire Way have now been completed and the effect of that work will be evidenced in the 2022 report.

- 7.9 The speed humps along the High Street in Crowthorne have been upgraded and replaced with speed cushions to reduce stop start driving. As a result the NO₂ levels have dropped from 41.7µg/m³ in 2011 to 31.1 µg/m³ in 2021.

Commentary from DEFRA

- 7.10 DEFRA have confirmed that the report 'is detailed and provides suitable information on measures to tackle air quality and the information specified in the Guidance' and 'Overall, the council have presented a detailed review of the existing air quality within Bracknell Forest.' They also noted that the comments from last year's ASR have been addressed. They welcomed the robust and accurate Quality Assurance (QA)/Quality Control (QC) procedures which were applied for the automatic station.
- 7.11 DEFRA identified a small number of formatting and presentational issues and inconsistencies with the data within the report. These will be rectified.
- 7.12 DEFRA noted that current Air Quality Action Plan was published in 2014 and reviewed in 2016 and that it was now in need of a further review. They accepted that pending the completion of certain highways measures there was potential to revoke the AQMAs.
- 7.13 The ASR confirms that Gradko has been used as the laboratory for diffusion tube analysis. The ASR does not present the analysis methodology used and that this should be included in future iterations of the report. The next version should also clarify that the monitoring was undertaken in accordance with the Defra Diffusion Tube Calendar. It should be noted that the PPP does follow the calendar as set out by DEFRA albeit that this was not specifically articulated in the report.
- 7.14 No justification is provided for the choice to use the local bias adjustment factor. The national factor was used in the previous ASR and the national factor is higher than the calculated local factor of 0.72. Justification behind the choice of a national or local factor should be provided in future ASR's.
- 7.15 DEFRA noted that there is a high level of detail on the measures currently implemented or completed and their potential impact on Air Quality across the council. This level of detailed is encouraged for future ASR's. They also welcomed the inclusion of the additional section on "The Pandemic and NO₂". They were also pleased to note that the ASR has been sent to the Director of Public Health and had been signed off by the Public Protection Partnership Manager.
- 7.16 DEFRA concluded that the 'report is a good source for members of the Public to find out about air quality in their area. The Council should continue their hard work. '

8. West Berkshire

- 8.1 There are two Air Quality Management Areas (AQMAs) declared across West Berkshire Council: One in Thatcham (along the A4) and one in Newbury (on the A339/Greenham Road/St Johns roundabout)

- 8.2 The major source of air quality pollutants in West Berkshire are road transport and in particular the contribution from the A339 and A4. The main pollutant is nitrogen dioxide (NO₂) in Newbury and Thatcham and as a consequence, two Air Quality Management Areas (AQMAs) have been declared. The Newbury AQMA was declared for exceedances of both the one-hour and Annual Mean NO₂ Objectives. The Thatcham AQMA was declared for the Annual Mean NO₂ Objective.
- 8.3 The NO₂ levels in 2021 have showed a decrease on the pre pandemic levels of 2019 and only 15 of the 36 diffusion tube sites have increased since 2020, and none of the monitoring locations within West Berkshire exceeded the Annual Objective of 40µg/m³. The 1 Hourly objective NO₂ was not exceeded in 2021 (permitted level of 18 exceedances of 200µg/m³ per year).
- 8.4 The NO₂ levels within the two AQMA's have also shown a reduction over the past five years, and if this trend continues then the Council may be asking DEFRA to revoke them. The continuous monitor located in the Newbury AQMA showed that the Annual Mean Objective was met, measuring 27.5 µg/m³ of NO₂ in 2021, which has decreased from 29.2 µg/m³ in 2020. The decrease may be due to the change in people's behaviour since the lockdowns including the change in work location and also the decrease in vehicle usage.
- 8.5 Over the past five years there has been a general decrease of NO₂, at a number of sites both within, close to and away from the existing AQMA's. No extensions or amendments to the AQMAs are required and no new AQMAs need to be declared. Overall the levels in West Berkshire have been reducing over the five years up to 2021.
- 8.6 As a unitary authority Environmental Health has continued to work in conjunction with the Transport Policy Team with the implementation of Local Transport Plan 3 (2011 – 2026). The Plan includes a Transport Vision setting out the long-term transport strategy for each of the four main geographical areas of the District, as identified in the Local Development Framework Core Strategy. These Visions have been prepared taking into account a "Mixed Strategy" approach of looking to provide people in the District with more sustainable travel choices. The Plan acknowledges the link with the existing AQAP and any future AQAP's and there is a specific Policy on Air Quality (Policy LTP K6).

Actions to Improve Air Quality

- 8.7 The Service continues to work with the Development Control Team to review the air quality impact of planning applications.
- 8.8 West Berkshire Council has completed all Pollution Prevention and Control inspections as required for the control of emission to air from industrial processes.
- 8.9 In 2019 the Bear Lane, A339 (Sainsbury's roundabout) improvements works to enable improved traffic flow were completed. However the true impact of these works will not be seen until 2023 when the effect of the pandemic is no longer a contributory factor.
- 8.10 Looking ahead there are a considerable number of road initiatives to be carried out, electric vehicle charging points to be installed (in 2021 there were 36) , further

developments to be made to cycle routes, improvements to the cycle lesson and bike storage facilities at schools.

Commentary from DEFRA

- 8.11 DEFRA commented that the 'report is well structured, detailed, and provides the information specified in the Guidance.' Both the annual mean and 1-hour mean Air Quality Objectives for NO₂ were complied with at all monitoring locations within 2021. They also noted that the comments from last year's ASR have been addressed.
- 8.12 DEFRA identified a small number of errors within the tables and map labelling in the report and in the reference to the Particular Matter (PM_{2.5}) Defra Background Maps. These will be rectified.
- 8.13 DEFRA noted that two additional passive monitoring of NO₂ sites were introduced in 2021 and some diffusion tube sites appear to have been relocated since 2020. Although the changes were welcomed the reasons for these changes has not been articulated in the report and that this should be addressed in future iterations of the ASR.
- 8.14 They queried if the two diffusion tube sites ('17 Chapel Street Thatcham 1' and '17 Chapel Street Thatcham 2') were duplicates with the same co-ordinates. If this was the case then the data for these sites should be processed correctly, by deriving the average annual mean in line with the guidance in LAQM.TG(16), for presentation within next year's ASR. Officers noted that these two sites are where the diffusion tubes are co-located.
- 8.15 The report includes detailed discussion of the measures the Council are taking to address PM_{2.5} which they welcomed. They encouraged the Council to include comparisons to the regional and national average in future reports.
- 8.16 DEFRA stated that 'sufficient detail is included in the QA/QC procedures for both the automatic analyser and the NO₂ diffusion tubes. Calculations for local bias adjustment and annualisation are outlined in detail. Distance correction was not required. 'However 'derivation of and a direct comparison against the national factor has not been demonstrated. It would be beneficial to include this in future reports. A figure showing the national bias adjustment factor determination would be welcomed.'
- 8.17 Information about the laboratory and analysis method for the 2021 diffusion tubes is not specified in the report and should be included in future iterations. In addition the Council should confirm whether or not the diffusion tubes were deployed in line with the Defra calendar dates during 2021. As previously stated the PPP does follow the DEFRA calendar. In future years, they recommended that the Council also include graphs to present trends at the monitoring locations outside of the AQMAs.
- 8.18 DEFRA noted that the Council has considered the total revocation of both its AQMAs but it has been decided to keep them in place for now in order to fully understand any changes that may have resulted from the Covid pandemic. DEFRA commented that the full revocation of both AQMAs should be considered. They did however suggest that Air Quality Action Plan (AQAP) which was published in 2011 be reviewed.

- 8.19 DEFRA commended the Council on the progress that had been made and welcomed the collaborative approach that West Berkshire Council is taking with the Public Protection Partnership.

9. Other air quality related matters of note

- 9.1 As mentioned previously the Public Protection Partnership (PPP) have been awarded £259,000 from DEFRA for an air quality project which aims to change the behaviour of those 448,000 residents who drive in the three boroughs by launching an anti-idling campaign. More information about activity associated with this project is set out in Appendix E.

10. Concluding Observations

- 10.1 Air Quality continues to be high profile area of work and the links with the sources of pollutants and health impacts becoming more apparent during and after the Covid pandemic. The authorities must continue to not only monitor the levels of pollutants affecting its residents but ensure that we continue to progress actions set out within the action plan.
- 10.2 The evaluations provided by DEFRA are positive and the JPPC is asked to both note the reports and the DEFRA evaluation and endorse the proposals set out in the action plan.
- 10.3 The duty on local authorities to both monitor and improve air quality is not just a legal requirement but a public demand. The effects on health of poor air quality are indisputable and Councils have been given a range of tools to tackle the causes.
- 10.4 In simple terms the causes are known but the solutions are wide ranging. The proposals set out in the plans seek to address several approaches ranging from raising awareness, changing human behaviour and matters of infrastructure.

11. Appendices

- 11.1 Appendix A – Bracknell ASR Report
- 11.2 Appendix B - Bracknell Response from DEFRA
- 11.3 Appendix C – West Berkshire ASR Report
- 11.4 Appendix D – West Berkshire Response from DEFRA
- 11.5 Appendix E – Quarterly Update to DEFRA regarding grant

12. Background Papers:

- 12.1 Bracknell Forest Council's LTP3 and supporting documents which can be accessed via the Council's website, at: <https://www.bracknell-forest.gov.uk/planning-and-building-control/planning/planningpolicy/transport-policy>
- 12.2 West Berkshire Council's LTP3 and supporting documents which can be accessed via the Council's website, at: <https://www.westberks.gov.uk/ltp>
- 12.3 Defra: National Clean Air Strategy 2019
<https://www.gov.uk/government/publications/clean-air-strategy-2019>

Subject to Call-In:

Yes: No:

- The item is due to be referred to Council for final approval
- Delays in implementation could have serious financial implications for the Council
- Delays in implementation could compromise the Council's position
- Considered or reviewed by Overview and Scrutiny Management Committee or associated Task Groups within preceding six months
- Item is Urgent Key Decision
- Report is to note only

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