

REPORT TITLE: AIR QUALITY BRIEFING UPDATE

19 JANUARY 2022 (RESCHEDULED FROM 7 DECEMBER 2021)

REPORT OF PORTFOLIO HOLDER: Councillor Hannah Williams, Cabinet Member for Climate Emergency

Contact Officer: David Ingram Tel No: 01962 848479 Email dingram@winchester.gov.uk

WARD(S): ALL

PURPOSE

The purpose of this report is to brief the Committee members on the state of the air quality within the Air Quality Management Area and the wider district, the 'recent' impacts of the Covid pandemic on air quality and to provide some insight as to the potential future approach for Air Quality Management by the Council.

RECOMMENDATIONS:

1. That the Policy Committee note the current position regarding air quality in the air quality management area and wider district and provide any comments on the report including the possible future approach to air quality management by the council.

1 RESOURCE IMPLICATIONS

- 1.1 The delivery of the Council's air quality management responsibilities are delivered from existing officer resources and from within existing budgets. Should the council subsequently commit to more stringent local air quality targets (particulate matter and/or nitrogen dioxide – NO₂) or if national standards become more stringent, a separate resource assessment will be completed, which will be reflected in the subsequent Cabinet paper where the council's approach to air quality management will be formally agreed.

2 SUPPORTING INFORMATION:

Background

- 2.1 In delivering on its legal duties as set down by the Environment Act 1995, Winchester City Council declared an Air Quality Management Area (AQMA) in 2003 and adopted its first Air Quality Action Plan in 2006. This has subsequently been updated by a new AQAP in 2017, which remains the current plan and which will be subject to review in 2022.
- 2.2 The AQMA covers all of the City Centre and the 8 primary routes entering and leaving the City. A single AQMA was declared to cover the primary area of concern within the City, noting that not all areas inside it fail the statutory standards.



Fig 1 - Air Quality Management Area – declared in 2003

- 2.3 For much of the subsequent period, the City Council has monitored two air quality parameters, particulate (PM₁₀) and nitrogen dioxide (NO₂), using a

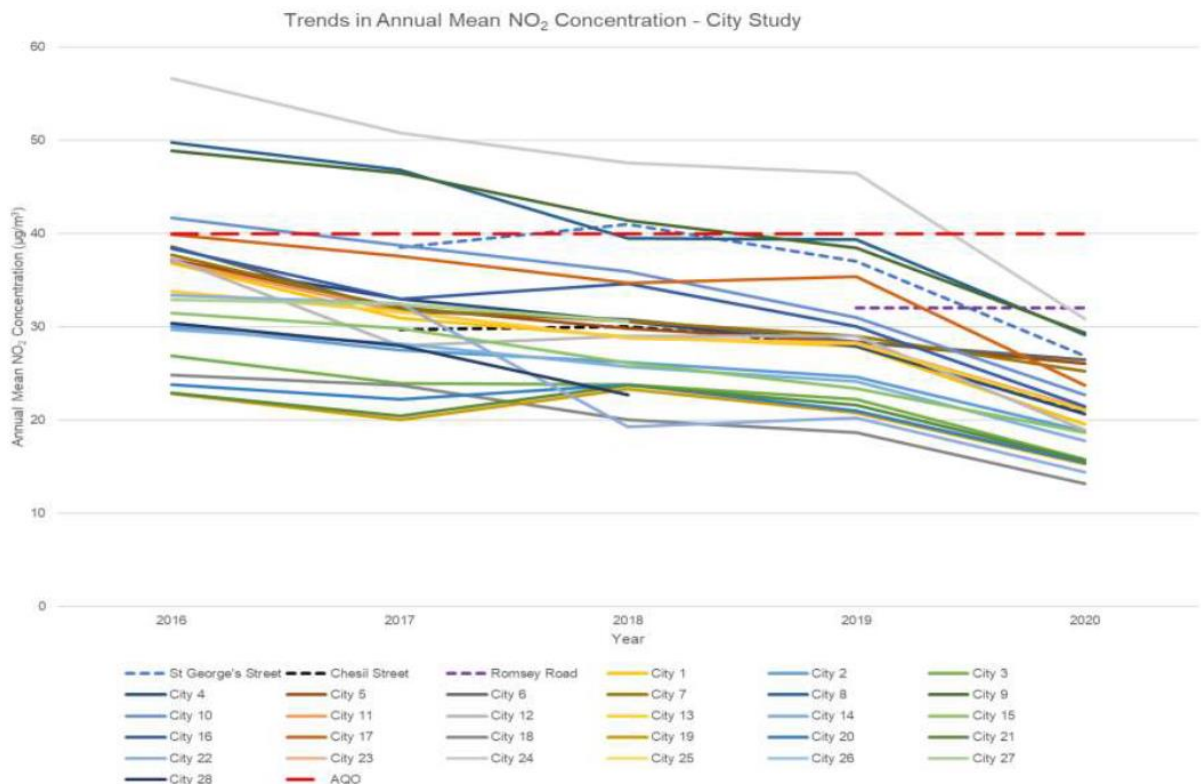
combination of static air quality monitoring stations (AQMS) and a network of NO_x diffusion tubes. However due to PM₁₀ levels consistency falling within statutory levels, in 2013 the Council 'un declared' on having to monitor PM₁₀ particulates and is currently not required to report on such levels to DEFRA in its Annual Status Report (ASR). Each ASR can be accessed via the City Council's web pages (<https://www.winchester.gov.uk/environment/air-quality/historical-air-quality-reports-for-government>) with the latest ASR appended to this report.

- 2.4 Currently, there are 2 static air quality monitoring stations located on Chesil Street and St Georges Street, which monitor 'live' NO₂ levels to MCERTS standards, supported by a network of 28 tubes located in the City and a further 8 tubes in the wider district, which monitor annual mean NO₂ trends over time.
- 2.5 The AQMA has consistently met the NO₂ hourly mean standard of no more than 18 incidences of exceeding 200 µg/m³ in any 12 month period, but it has struggled to demonstrate compliance with the annual mean NO₂ standard of 40µg/m³, in some areas, most notably Romsey Road.
- 2.6 In addition, back in 2019 officers installed an AQMesh NO₂ and particulates analyser on Romsey Road to provide additional data on that arterial route in support of the NO₂ tubes, which were showing a failing of the statutory NO₂ standard.
- 2.7 Lastly in early 2020, in response to growing concerns that particulate levels were again rising with the increase in diesel engines within the Winchester 'fleet', officers installed a FIDAS 200 particulates monitor into the St Georges Street AQMS. This FIDAS 200 monitors both PM₁₀, which is the current statutory particulate parameter, and PM_{2.5} the finer particulate over which there is growing public health concern. It is expected that there will be new statutory standards for PM_{2.5} through the long awaited Environment Bill, which is currently undergoing its final parliamentary stages prior to receiving Royal Assent.

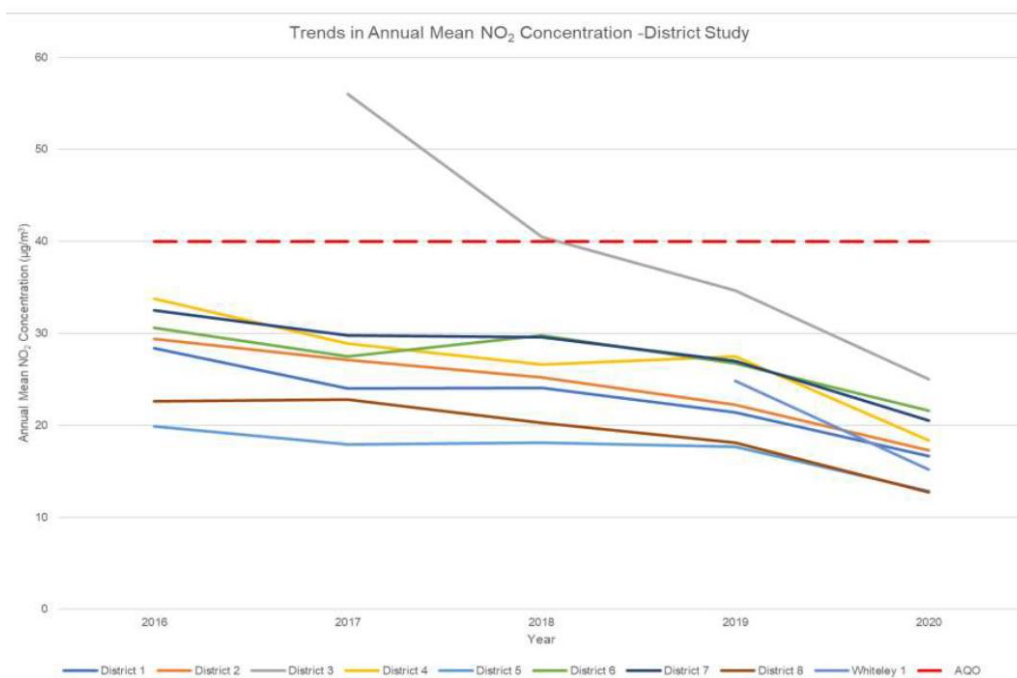
Current Air Quality in Winchester

- 2.8 Between the years 2016 and 2020 a decreasing trend in NO₂ concentrations have been observed at all monitoring locations. There are some year to year variations in concentrations, which are likely due to meteorological influences and there was a significant decrease in levels of NO₂ in 2020, largely due to the Covid 19 pandemic and the associated lockdowns which significantly reduced traffic in the AQMA.
- 2.9 Although all monitoring locations met the annual mean NO₂ standard of 40µg/m³ in 2020, the Romsey Road, West End Terrace exceeded that standard, but when distance corrected to the relevant exposure location, it was found to be compliant.

- 2.10 Although compliant during 2020 for the first time, there are 4 NO₂ diffusion tube locations on Romsey Road, which are still comparatively high, when compared to the rest of the AQMA. This indicates a remaining risk of exceedance of the statutory annual mean standard, so these sites will continue to be closely monitored.
- 2.11 Levels of NO₂ annual mean concentrations were significantly lower at all monitoring locations in the city and across the district, which is considered mainly due to the Covid 19 lockdowns and consequential changes in working and other behaviours which reduced traffic levels. However there has already been a notable increase in traffic accessing the City throughout 2021 and as a national trend traffic levels are increasing again towards pre pandemic levels. It is therefore premature to expect the corresponding NO₂ annual mean levels to remain as per 2020 and, as such, officers will require the 2021 data before any meaningful clarity of overall air quality position can be obtained.
- 2.12 Below is a graph showing the annual mean NO₂ concentrations in the City monitoring locations. Note 'City 24' is the Romsey Road (Clifton Hill) location, which in 2019 showed an exceedance of the annual mean standard.



- 2.13 The following graph, shows the annual mean NO₂ trends for the district locations and from which it can be seen that all locations are compliant with the annual mean standard. Note 'District 3' is Kings Worthy (Martyr Worthy Road) which was an additional location introduced in 2017, and which was subsequently found to be in compliance with the standard.



- 2.14 There is a high degree of confidence that there are no locations outside the AQMA, but within the wider Winchester district, that currently exceed the $40\mu\text{g}/\text{m}^3$ NO₂ annual mean standard.
- 2.15 The current 2017 AQAP committed to the delivery of 9 core and 9 complimentary measures, a number of which have now been delivered, but equally some, such as the introduction of a north Park and Ride facility, are contingent on the delivery of the Movement Strategy, work for which continues. Notable measures that have been implemented include:
- Differential parking tariffs to discourage parking inside the AQMA, completed and in place;
 - Investigation of the feasibility of a 'Clean Air Zone' for HGVs. This was conducted and discounted due to costs and the relatively short period of efficacy due to a national freight transition to Euro V and Euro VI engines;
 - Adoption of an Air Quality Supplementary Planning Document by Cabinet in October 2021;
 - Monitor performance of AQAP and reassess whether additional measures will be required to meet objectives. A review of AQAP will be conducted in 2022.
 - Delivery of the Electric Vehicle Charging Strategy with 34 fast chargers and one rapid charger on Council owned car parks across the district;
 - Adoption of a Sustainable Procurement Strategy to underpin the Council's carbon reduction and air quality aspirations.

- Review of taxi policy to incentive the uptake of 'plug in' taxis;

Next Steps

2.16 In 2020 there was some discussion as to whether the size of the AQMA could be reduced, in view of many of the NO₂ diffusion tubes inside the AQMA, demonstrating compliance with the statutory NO₂ annual mean standard. Based on the historical and NO₂ data the size of the current AQMA could substantially be reduced to a linear length of highway along Romsey Road, High Street and St Georges Street.

2.17 A presentation was made to the HEP Committee held on 13th January 2020 posing one of two recommendations, that:

Officers submit an application to DEFRA in March 2020 to reduce the AQMA in 2020 then, if supported by subsequent data; submit a second application in the spring of 2021 to achieve further reductions in the size of the AQMA.

Or

Option 2 - Officers await the clarity of position from the ratified 2020 data set and submit a single application to the spring of 2021 which is expected to support a significant reduction in the size of the AQMA.

2.18 These two options were subsequently presented to Cabinet on 22nd January 2020, when it was resolved that:

Cabinet note the positive progress made in the delivery of the Air Quality Action Plan; and

That the ratified 2020 data set is reviewed in due course and if appropriate an application is submitted to DEFRA in the spring of 2021 to revoke the current Air Quality Management Area and to submit a new declaration for a significantly reduced Air Quality Management Area.

2.19 Shortly afterwards in March 2020, Winchester was affected by the start of the Covid 19 pandemic and the national lockdowns which radically affected community behaviour and with it, air quality within the AQMA. It was subsequently decided that the 2020 data set was so atypical that it could not be relied upon on to make a decision to revoke the current AQMA and declare a new significantly reduced AQMA.

Statutory duty to Review AQAP

2.20 Local Authorities that have an AQAP are statutorily required to review and update that plan at least once every 5 years. As the council's current AQAP was adopted in 2017, this means that it must now be updated in 2022. Given the 2020 data set is atypical, officers will await the full 2021 air quality data set, which is expected at the end of January 2022, after which they can commence a properly informed review of the AQAP. This will necessitate a

corresponding review of the AQMA and whether it can be reduced to those areas that remain a concern i.e. Romsey Road. Such a review will be conducted using the current statutory air quality standards set down the Air Quality Standards Regulations 2010.

- 2.21 As part of this work, officers will engage the services of a specialist air quality consultant to undertake a study to identify the sources of NO₂ that are affecting the remaining areas of poor air quality. This study is also expected to identify additional actions that can be delivered to further improve levels of NO₂ and these will form part of revised AQAP. The initial draft of the revised AQAP is expected by the autumn of 2022, when it will be considered by Cabinet for its agreement to go to public consultation prior to final adoption in early 2023.

New impending air quality standards

- 2.22 The Environment Act 2021 was enacted on 10th November which requires central government to set, by regulation, new statutory standards for fine particulates PM_{2.5}, by the end of October 2022. Given effective measures to control PM_{2.5} emissions at a local level are limited, it has been suggested that the new regulations may require all local authorities, regardless of whether they have a current AQMA, to adopt certain measures to control PM_{2.5} emissions, in order to reduce emissions across the country. Depending on the standards and or control measures set by central government, this may necessitate a further review of how this affects Winchester's situation and any amendments that may be needed to the existing AQMA and associated AQAP.
- 2.23 Until recently it was expected that the UK would either adopt the European Union PM_{2.5} annual mean standard of 25µg/m³ or the WHO standard of 10µg/m³. However in September of 2021, the World Health Organisation issued a suite of Global Air Quality Guidelines, which set new much more stringent guideline standards for various pollutants including PM₁₀, PM_{2.5} and NO₂, as follows:

Pollutant µg/m ³	Averaging Time	Interim Target*				Air Quality Guideline level (AQG)
		1	2	3	4	
PM _{2.5}	Annual	35	25	15	10	5
	24 hr	75	50	37.5	25	15
PM ₁₀	Annual	70	50	30	20	15
	24 hr	150	100	75	50	45
NO ₂	Annual	40	30	20	-	10
	24 hr	120	50	-	-	25

*The WHO Air Quality Guidelines document cites the 'Interim Targets' as being targets that were 'introduced in 'Global update 2005' as additional integral elements of guidance, designed to complement the WHO air quality guidelines and can be defined as **air pollutant concentrations associated with a specific decrease in health risk that serve as "incremental steps in progressive reduction of air pollution [...] intended for use in areas where pollution is high"** (WHO Regional Office for Europe, 2006). As stated in Global update 2005, "countries may find

these interim targets helpful in gauging progress over time in the difficult process of steadily reducing population exposures [to air pollution]”.

- 2.24 It is worth noting that the WHO Air Quality Guidelines, as highlighted above, would represent a significant tightening on existing UK statutory standards.
- 2.25 Although it is noted that these are WHO guidelines are not UK statutory standards, they are nevertheless based on a broad position in public health research, that there is no ‘safe’ level of pollutants. It therefore remains to be seen what new statutory standards the government will adopt through regulation from 2022 onwards.

Aspirational local air quality targets

- 2.26 It is not currently known what new standards the Government are likely to adopt, or exactly when this will happen. Nevertheless the council is considering the possibility of moving toward more stringent local air quality targets in support for the broader public health position that there is no ‘safe’ level of pollutants. Officers have therefore been tasked with investigating what new local air quality targets might be adopted beyond the current national standards, to further mitigate public health impacts. It is considered that these will need to be realistically deliverable within the next few years.
- 2.27 As part of this work officers have engaged with Oxford City Council which in 2021 adopted an NO₂ annual mean standard of 30µg/m³ which is 10µg/m³ below the current national standard. This standard was set subsequent to a detailed independent source apportionment study, which determined the main sources of air pollution in Oxford city, from which there were several recommended ‘actions’, which were then incorporated into the City’s updated 2021 Air Quality Action Plan.
- 2.28 In broad terms, trying to achieve more stringent air quality targets which go beyond the current statutory standards will almost inevitably require more radical steps to reduce pollutants at source including how the road networks inside the AQMA are managed to reduce the local traffic levels. This would be implemented in concert with other actions which might include measures like the development of sustainable transport options, zero emission last mile freight delivery and a public education campaign to encourage walking and cycling.
- 2.29 Should the council chose to adopt new more stringent air quality targets than any current and/or future statutory standards, then this would need to be reflected within a separate albeit parallel plan to the Council’s latest AQAP. Although as of yet undecided, this may be separately be referred to as an Air Quality Improvement Plan and would be a policy of intent, but without statutory backing.
- 2.30 In order to progress the adoption of local air quality targets, officers will need to commission an air quality consultant to conduct a broader study to identify the sources of both NO₂ and PM_{2.5} within the City and the wider district and

identify actions that would be deemed necessary to achieve more stringent NO₂ and PM_{2.5} targets. The time scale to achieve these targets will also need to be considered and agreed.

- 2.31 This work is expected to be conducted in addition to the review of the existing AQMA, albeit the work can be conducted concurrently and will form part of the same commission. The commissioning process is expected to commence before Christmas 2021, the consultant engaged in early February with the ensuing report received late spring 2022.
- 2.32 Once received it is expected that this report will inform the City Council's new approach to managing and improving air quality and would form the basis for a separate Air Quality Improvement Plan (AQIP) that would be in support of and aligned to any new AQAP.
- 2.33 Any proposed AQIP will need to be agreed in draft by Cabinet, before going out to public consultation, and a second hearing by Cabinet before adoption, the time line for which may or may not align with the review of the current AQAP. Whilst the primary focus of air quality has been on Winchester's City Centre, the adoption of a new AQIP may, depending on the local targets adopted, bring into scope other areas of the district hitherto complying with the statutory standards.

Conclusions

- 2.34 Whilst air quality within the current AQMA has been steadily improving, and for the most part levels in 2020 demonstrate compliance with current statutory air quality standards, the Covid 19 pandemic has affected community behaviours. Therefore the 2020 results are so atypical that they cannot be relied upon to make an informed decision as to whether the AQMA should be reduced in size. Consequently officers will wait to receive the fully ratified 2021 air quality data set, before reviewing the size of the current AQMA and development of any new or revised AQAP, prior to formal adoption by Cabinet.
- 2.35 In addition, new PM_{2.5} standards are expected to be brought in by the government following its enactment of the Environment Act 2021 on 10th November, which will require that Local Authorities take steps to improve levels of finer particulate levels beyond current standards and which may have implications for the existing AQMA.
- 2.36 Furthermore, officers have been tasked with investigating the potential to adopt, by local policy, new more stringent local air quality targets intended to further mitigate public health impacts. This will necessitate an independent study to be commissioned in spring of next year and which will inform a way forward.

3 OTHER OPTIONS CONSIDERED AND REJECTED

- 3.1 The reduction of the current AQMA based on existing statutory standards was considered and discounted at this time, due to atypical 2020 data and pending new national and potentially new local air quality standards being adopted. The council is required to review its AQAP every five years and so need to complete this work in 2022.

BACKGROUND DOCUMENTS:-

Previous Committee Reports:-

- [Agenda Item 8](#) Health and Environment Policy Committee 13th January 2020
- [CAB3217](#) Air Quality Action Plan Update 22 January 2020

Other Background Documents:-

- [2021 Air Quality Annual Status Report](#)

Appendices:

None