

**Committee:** Licensing and Environmental Health Committee

**Date:**  
Wednesday, 2  
March 2022

**Title:** Air Quality Update

**Report Author:** Marcus Watts, Environmental Health Manager  
- Protection

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## Summary

1. Although there is no safe level of air pollution, the air quality in Uttlesford is not considered to be poor. The latest Annual Status concludes that there have been no measured exceedances of the national Air Quality Objectives for four years in a row. This gives the council grounds to examine whether the Air Quality Management Area (AQMA) designated in Saffron Walden in 2012 can be revoked.
2. With the introduction of the Environment Act 2021 the Environmental Health (Protection) service is waiting on new regulations and guidance before it introduces changes to its current air quality monitoring programme. New legally binding national targets are expected to be set for PM<sub>2.5</sub> in 2022. Further, the responsibility for air quality improvements will now be shared across tier 1 and tier 2 authorities. This is intended to strengthen the council's approach to tackling air quality issues, should this be needed.
3. This report provides the Committee with an overview of status of air quality in Uttlesford. It also highlights changes in guidelines introduced by the World Health Organisation and outlines the implications of the Environment Act 2021.

## Recommendations

4. None – for information only

## Financial Implications

5. None

## Background Papers

6. The following papers were referred to by the author in the preparation of this report and are available for inspection from the author of the report.
  - 2021 Air Quality Annual Status Report (ASR)
  - WHO global air quality guidelines 2021
  - Environment Act 2021

- Environment Act 2021: Frequently Asked Questions (Local Authorities) Feb 2022

## Impact

7.

Communication/Consultation	None
Community Safety	There are no direct community safety implications associated with this report
Equalities	There are no Equalities Act implications
Health and Safety	No impact on employee health and safety
Human Rights/Legal Implications	All work in measuring and reporting on air quality conditions within the council will be carried out in accordance with existing legislative framework
Sustainability	The work connected with local air quality management is directly linked to sustainability and measures in keeping with the council's climate change goals
Ward-specific impacts	No specific impact on wards
Workforce/Workplace	Environmental Health (Protection) Service – from existing resources

## Situation

8. Local authorities have a statutory duty for managing local air quality under Part IV of the Environment Act 1995. As part of these duties, District Councils have been required to review and assess air quality within their areas since 1997.
9. The council aims to ensure that the national Air Quality Objectives prescribed in Air Quality Regulations will not be exceeded. These objectives have historically been based on World Health Organisation Air Quality Guidelines and exist to protect people's health and the environment.
10. Most people are fully aware that air pollution can have damaging impacts on human health, productivity, amenity, and the health of the environment. Poor air quality is considered by the government to be the largest environmental risk to public health in the UK.

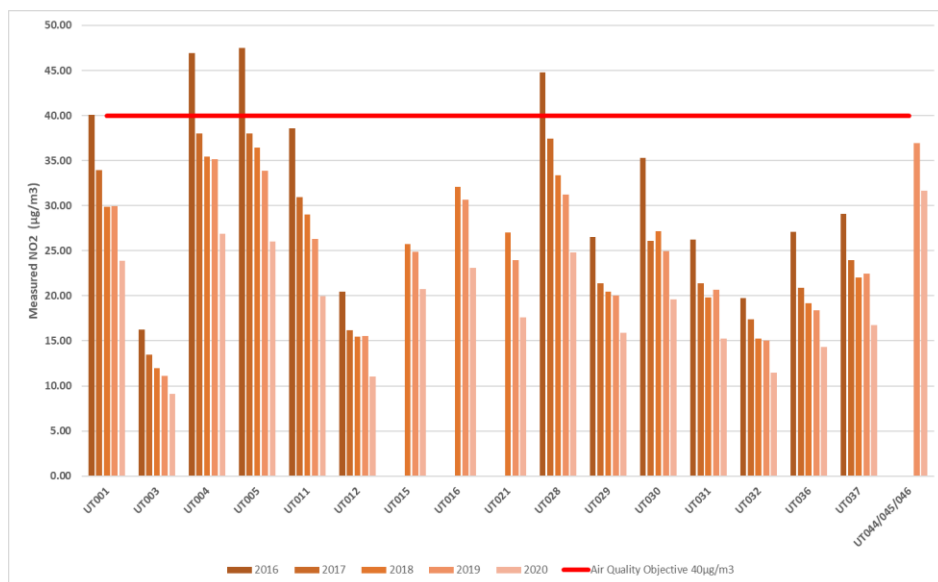
11. Epidemiological studies have shown that long-term exposure to air pollution (over years or lifetimes) reduces life expectancy, mainly due to cardiovascular and respiratory diseases and lung cancer. Short-term exposure (over hours or days) to elevated levels of air pollution can also cause a range of health impacts, including effects on lung function, exacerbation of asthma, increases in respiratory and cardiovascular hospital admissions and mortality. It is estimated that long term exposure to man-made air pollution has an annual effect equivalent to 28,000- 36,000 deaths.

12. In 2018, Public Health England modelled the cost of air pollution where there was robust evidence of an association. It concluded that between 2017 and 2025, the total cost of air pollutants, was £1.69 billion for PM<sub>2.5</sub> and NO<sub>2</sub> combined (£1.54 billion for PM<sub>2.5</sub> and £60.81 million for NO<sub>2</sub>). Of the working age population, DEFRA estimated that in 2012, poor AQ cost the economy 2.7 billion through its impact on productivity.

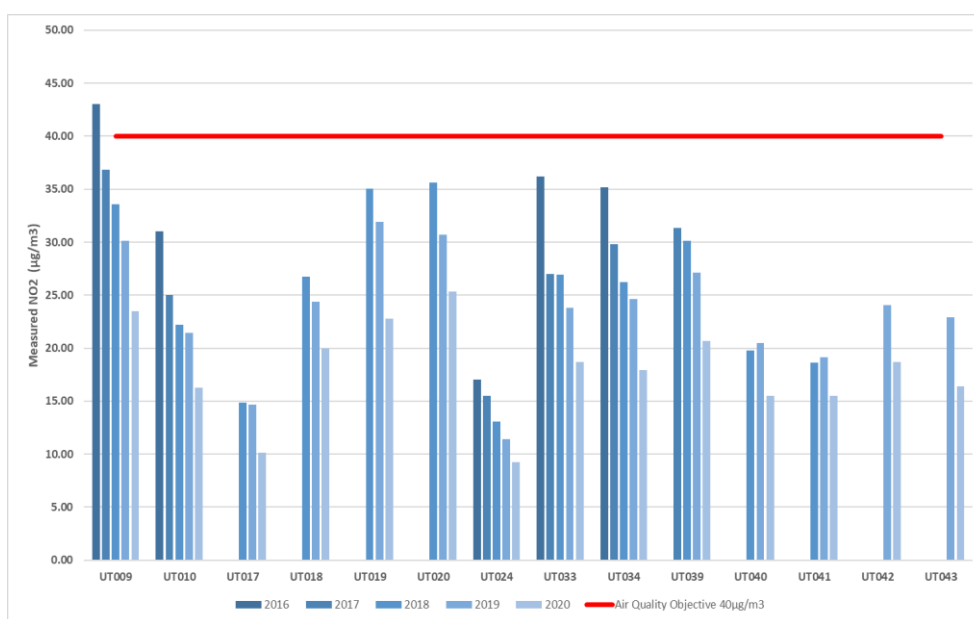
### **13. Air Quality Annual Status (ASR) Report 2021**

14. In September 2021, the council published its ASR in accordance with its statutory obligations. This reported on air quality concentrations collected in 2020 using two nitrogen dioxide continuous analysers, two Particulate Matter (PM<sub>10</sub>) analysers and two PM<sub>2.5</sub> analysers. The service also deploys 2 mobile Osiris particle monitors and two Aeroqual AQY sensors, each collecting further data on particulates and nitrogen dioxide. Nitrogen dioxide data was also collected across 31 other locations using diffusion tubes. These tubes are low cost and data from them is less accurate than the continuous analysers but is very useful to show long term trends and highlight hot-spot locations.

15. In 2020 there was a significant drop in annual average concentrations of nitrogen dioxide at roadside locations when compared to 2019. This was principally due to the impact of the COVID-19 pandemic. In 2020 all locations met the annual objective of 40µg/m<sup>3</sup>. Despite the unusual year, it is considered that the long-term trend for monitored concentrations is downwards. Chart A shows the trend in annual mean nitrogen dioxide concentrations within Saffron Walden. Chart B shows the trend in other locations within the district.

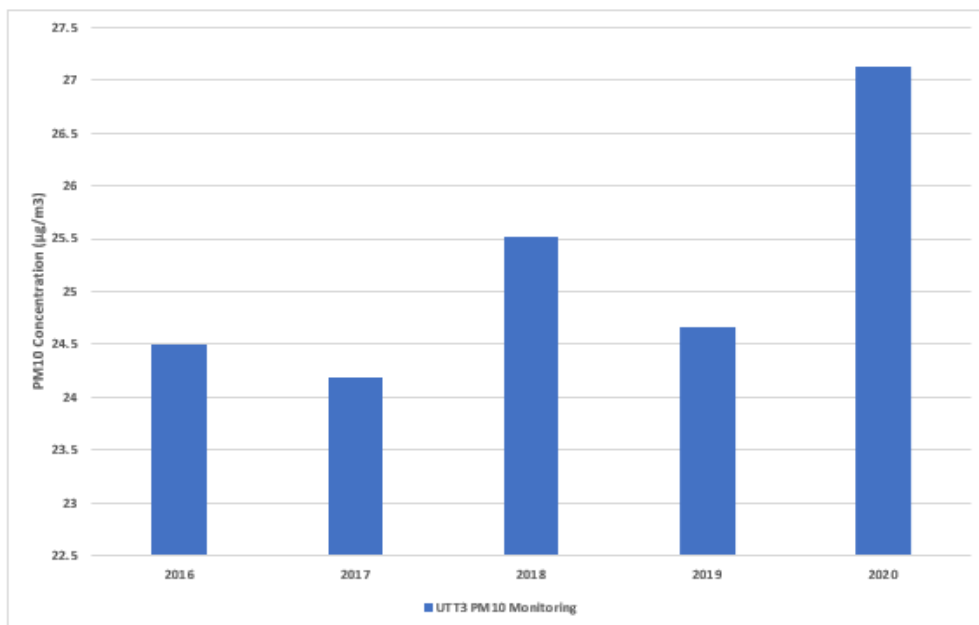


**Chart A. Trends in Diffusion Tube Annual Mean NO<sub>2</sub> Concentrations in Saffron Walden (AQMA)**



**Chart B. Trends in Diffusion Tube Annual Mean NO<sub>2</sub> Concentrations District Wide (Non AQMA)**

16. The impact of the COVID-19 pandemic on the level of particulate matter was less significant. This is because particulate matter is made up of many sources, some of which travel very long distances and stay in the air for a long time. Levels of particulate matter in the air at any given time are also strongly influenced by weather conditions. Surprisingly, annual mean PM<sub>10</sub> and PM<sub>2.5</sub> concentrations were higher in 2020 than previous years. At no time in the past five years have PM<sub>10</sub> concentrations exceeded the objective levels (See Chart C). There are currently no set objective levels for PM<sub>2.5</sub>.



**Chart C. Trends in Annual Mean PM<sub>10</sub> Concentrations**

17. Based on the findings of the ASR, the council has grounds to examine whether their AQMA can be revoked. However, considering forthcoming changes proposed by regulations proposed under the Environment Act 2021, a review will be made alongside the Air Quality Action Plan in 2022/23. A copy of the full report can be found here: [Uttlesford 2021 ASR](#)

## **18. World Health Organisation – global air quality guidelines 2021**

19. In September 2021 the WHO published a revised set of guidelines for PM<sub>2.5</sub>, PM<sub>10</sub>, ozone (O<sub>3</sub>), nitrogen dioxide (NO<sub>2</sub>), sulphur dioxide (SO<sub>2</sub>) and carbon monoxide (CO). They update the previous guidelines issued in 2005 and are based on a review of evidence on the effects of air pollution on health, drawn from the last 16 years and more, by some of the world's leading experts in the field.

20. It is important to note that these guidelines are not legally binding but they “provide WHO Member States with an evidence-informed tool that they can use to inform legislation and policy”.

21. Most significantly, these guidelines have been made more stringent, reflecting developments in health effects evidence. There has also been an alignment of the guidelines, with 24-hour values given for each of the pollutants (other than ozone), along with a series of interim targets for each.

22. The WHO Guidelines are aimed at providing guidance on the air pollution concentration required to avoid significant health effects in the general population. They do not specify how they are to be assessed, e.g. locations

where they apply, how they should be monitored, nor do they specify dates by when they should be attained. WHO states that the guidelines should apply to both indoor and outdoor settings. However, they should not be applied to occupational settings. To illustrate proposed changes in nitrogen dioxide and particulates, table 1 below outlines existing objective levels and table 2 details the changes that have been introduced.

Pollutant	Air Quality Objective: Measured as	Air Quality Objective: Concentration
Nitrogen Dioxide (NO <sub>2</sub> )	1-hour mean	200 µg/m <sup>3</sup> not to be exceeded more than 18 times a year
Nitrogen Dioxide (NO <sub>2</sub> )	Annual mean	40µg/m <sup>3</sup>
Particulate Matter (PM <sub>10</sub> )	24-hour mean	50µg/m <sup>3</sup> , not to be exceeded more than 35 times a year
Particulate Matter (PM <sub>10</sub> )	Annual mean	40µg/m <sup>3</sup>

**Table 1. Existing AQ Objective Concentrations**

Pollutant	Averaging time µg/m <sup>3</sup>	Interim Target				2021 Guideline
		1	2	3	4	
Nitrogen Dioxide (NO <sub>2</sub> )	Annual	40	30	20	-	10
Nitrogen Dioxide (NO <sub>2</sub> )	24- hours	120	50	-	-	25
Particulate Matter (PM <sub>10</sub> )	Annual	70	50	30	20	15
Particulate Matter (PM <sub>10</sub> )	24- hours	150	100	75	50	45
Particulate Matter (PM <sub>2.5</sub> )	Annual	35	25	15	10	5
Particulate Matter (PM <sub>2.5</sub> )	24- hours	75	50	37.5	25	15

**Table 2. WHO 2021 Guideline Levels**

23. Currently, the UK Air Quality Objectives remain unchanged. While the values for the 2005 Guidelines and the UK Objectives were similar, they were not a direct transposition and the WHO does not intend that governments and policy makers simply cut and paste the guidelines into legislation. However, the Environment Act will require the Government to set a new target for PM<sub>2.5</sub> and

to have regard to the WHO Air Quality Guidelines while doing so. Currently no numerical standard has been set. It should be noted that the guideline values for PM<sub>2.5</sub> are 5 µg/m<sup>3</sup> annual mean. In 2020 the annual mean for PM<sub>2.5</sub> at London Road (UTT3) was 15 µg/m<sup>3</sup>. Reported levels using non-referenced sensors at Hill House and Thaxted were 9.5 and 11 µg/m<sup>3</sup> respectively.

24. In terms of how the new guidelines impact at a district level, planning applications are typically determined against the objectives set in legislation and not the WHO guidelines. Thus, until such time as the values for the Objectives change, there is likely to be no practical consequence for determining planning decisions.

## **25. The Environment Act 2021**

26. The long-awaited Environment Act 2021 received royal assent in November 2021, three years after a bill was first proposed. It is intended to set the scene on how environmental matters will be governed now the UK has left the EU.
27. The act sets out five environmental principles which are intended to underpin future government policy, contributing to the improvement of environmental protection and sustainable development. In addition, it sets up the Office of Environmental Protection (OEP). The OEP is new public body designed to hold government and other public authorities into account and may issue notices and legal proceedings. For district councils, the OEP can take action should an authority fail to take proper account of environmental law when carrying out its activities, for example, not properly regulating environmentally harmful activities it is responsible for permitting. This provides an additional layer of scrutiny on the work of the service, particularly relating to work concerning air quality, waste and contaminated land.
28. The Act gives the Secretary of State the power to set legally binding, longer-term environmental targets lasting at least 15 years across a variety of areas relating to the environment, namely, air quality, biodiversity, water, resource efficiency, and waste reduction. In doing so, it proposes to improve the environment, halt species decline and increase biodiversity.
29. In terms of air quality, the Act establishes a legally binding duty on government to bring forward at least two new air quality targets in secondary legislation by 31 October 2022. These are thought to be targets to reduce the annual mean level of PM<sub>2.5</sub> in ambient air, and a long-term target (set a minimum of 15 years in the future). The government says that the “principle of a population exposure reduction target is to prioritise action that is most beneficial for public health and drive continuous improvement”.
30. Independent expert groups have been formed to advise the Government on the development of each of the targets and although consideration will be given to the latest WHO guidelines, it is not thought that these will be adopted in secondary legislation.

31. The Government is expected to run a consultation in February 2022 on the legally binding targets. With the adoption of these targets new statutory cycle of monitoring, planning, and reporting will be necessary. This will link in with the Government's Environmental Improvement Plan (EIP). The government must report annually on the implementation of the EIP and review it at least every five years.
32. The Act also amends the Environment Act 1995 to "strengthen the local air quality management (LAQM) framework to enable greater cooperation at local level and broaden the range of organisations that play a role in improving local air quality". Responsibilities for tackling local air pollution no longer rest with the district council but are shared with designated relevant public authorities, all tiers of local government and neighbouring authorities. It also introduced Section 83A to the Environment Act 1995, strengthening requirements of local Air Quality Action Plans. Councils must now demonstrate how they are proposing to secure that air quality standards and objectives are achieved rather than only 'working towards' achievement.
33. Finally, the Act also amends the Clean Air Act 1993 by replacing the criminal offence of emitting smoke from a chimney in smoke control areas (SCA) with a civil penalty. It also tightens up offences relating to sale of certain fuels. This will have no impact as there are no SCAs located in Uttlesford.

#### **34. Proposed AQ delivery plan for 2022/23**

35. A summary of proposed actions that the Environmental Health Protection Service is seeking to pursue in 2022/23 are given below:
- I. **Increased AQ monitoring.** The service monitors AQ throughout the district using 31 diffusion tubes. For 2022, 36 additional tubes will be deployed to assess NO<sub>2</sub> concentrations in proximity to schools.
  - II. **Clean Air Day (CAD)** – CAD is the UK's largest air pollution campaign, engaging in thousands of events, reaching millions of people. The service will plan a number of initiatives and will work with partners to raise awareness.
  - III. **Air Quality Management Area (AQMA) / Air Quality Action Plan (AQAP)– Review** – The service will review the implications of new AQ objectives and consider options for on-going AQ monitoring within the district. Furthermore, The AQAP sets out a range of challenging cross-cutting actions, many now link in with the Councils Climate Change plan. The current five year AQAP, approved in 2018 and should now be reviewed in 2022. The service will wait to see the outcome of the latest ASR and should this continue to show air quality concentrations below the objective levels, the service will seek consent to apply to revoke the AQMA.

#### **Risk Analysis**

36.



Risk	Likelihood	Impact	Mitigating actions
There is a risk of reputational damage and action by the OEP is the council does not fulfil its statutory functions in accordance with the Environment Acts 2005 and 2021	The Council has good an robust AQ monitoring provision in place	There is little to no impact providing that the council continues to monitor and report on AQ concentrations	Ensure that sufficient budget is maintained for AQ monitoring services.

1 = Little or no risk or impact

2 = Some risk or impact – action may be necessary.

3 = Significant risk or impact – action required

4 = Near certainty of risk occurring, catastrophic effect or failure of project.