7 November 2023	ITEM: 6
Cleaner, Greener and Safer Overview and Scrutiny	
Annual Status Report on Air Quality in Thurrock	
Wards and communities affected: All	**Key Decision:** N/A
Report of: Peter Bond, Air Quality Officer, Public Protection	
Accountable Assistant Director: Michael Dineen, Assistant Director for Counter Fraud, Enforcement, Public Protection and Community Safety	
Accountable Director: Claire Demmel, Interim Director for Public Realm	
This report is Public	

Executive Summary

As part of the Council's obligations under Part IV of the Environment Act (2021), Members are presented with a Status Report on Air Quality (ASR) – Appendix A.1. This document provides analysis of, and commentary on, the Council's air quality monitoring data for the 2022 calendar year as well as updates from the relevant internal departments on progress made against the Air Quality Action Plan (AQAP) over the same period.

The data shows that concentrations of nitrogen dioxide are below or well below the Air Quality Strategy (AQS) objectives for this pollutant at all monitoring stations. All but two monitoring sites are at least 10% below the AQS objectives for this pollutant. The two exceptions are the Purfleet monitoring station and the Lakeside Tesco diffusion tube. All AQS objectives are included in Appendix A.3. The five year "long-term" graphs presented in the ASR all show a slow but largely consistent downward trend in nitrogen dioxide concentrations. However, readings from 2022 break this trend with a slight increase compared with 2021. This is likely due to traffic returning after the pandemic. 2022 readings are still largely below the concentrations reported during the most recent pre-pandemic year (2019).

Particulate matter (PM_{10}) concentrations across the five-year period peaked in 2019 but, aided by the pandemic, have reduced since then. No exceedances of the AQS objectives for this pollutant were registered in 2022. Particulate matter ($PM_{2.5}$) concentrations have been stable across the five-year period with no exceedance of the AQS target for this pollutant.

In 2022, air quality within all of the Council's 18 Air Quality Management Areas (AQMAs) was compliant with all AQS objectives. While the increase in nitrogen dioxide concentrations between 2021 and 2022 is noted, the increase has been less

on average within Thurrock's AQMAs compared to monitoring sites outside them. A map of AQMAs can be found in Appendix A.2.

The findings of this year's ASR have been accepted by Defra and it is recommended that the Committee note these findings.

1. Recommendation(s)

1.1 That the report be noted.

2. Introduction and Background

2.1 The ASR has been included on the agenda because it is a statutory requirement under Part IV of the Environment Act (2021).

2.2 According to this legislation the Local Authority (LA) must declare an AQMA at locations with observed or expected exceedances of one or more AQS objectives. Subsequently the LA must create an Air Quality Action Plan (AQAP) to bring air quality within the declared AQMA into compliance with the AQS objectives. An ASR must be submitted to Defra each year until the AQMA is revoked. Revocation would be considered by the secretary of state in the case of continued compliance at a level of 10% below the AQS objective for which the AQMA was declared for at least three years, excluding outlier years such as 2020.

2.3 Previous ASRs are available via the Council's website.

3. Issues, Options and Analysis of Options

3.1 The Annual Status Report (ASR) on Air Quality is a statutory report which analyses and summarises air quality data from the Council's air quality monitoring network during the last calendar year. The report also discusses the actions taken by the Council to improve air quality in its designated AQMAs during the same period.

3.2 Air pollution is associated with a number of adverse health impacts. It is recognised as a contributing factor in the onset of heart disease and cancer. Additionally, air pollution particularly affects the most vulnerable in society: children, the elderly, and those with existing heart and lung conditions. There is also a strong correlation with equalities issues because areas with poor air quality are disproportionately less affluent.

3.3 The main air pollutants of concern in Thurrock are nitrogen dioxide (NO_2) and particulate matter (PM_{10} & $PM_{2.5}$); both pollutants arise predominantly from road traffic emissions. Thurrock only has AQMAs which are declared for road traffic-based emissions; there are no industrial based AQMAs in the borough. The AQMAs are all declared for exceedance of the long-term objective for NO_2 (40 micrograms per cubic metre – henceforth: $\mu g/m^3$). Out of the 18 AQMAs there are currently four that are also declared for exceedance of the

short-term objective (aka. 24-hour mean objective) for PM_{10} which is 35 permitted exceedances of >50 µg/m^3 in a given year.

3.4 Many of the roads around which Thurrock's AQMAs are declared are major commuter routes or used for logistical purposes. There is often a large amount of traffic during peak hours and in many of these areas there is relevant public exposure, principally in the form of residential dwellings which are in relatively close proximity to these roads. A full list of the AQMAs can be found in Table 2.1 of the ASR or on the Defra UK Air website.

3.5 Thurrock Council operates an extensive network of 69 diffusion tube monitors, monitoring nitrogen dioxide (NO_2) concentrations on a monthly basis. Additionally, we have four automatic monitoring stations which generate near-real-time, continuous data on a variety of different pollutants. All four monitor NO_2 concentrations. TK1 in Grays, TK3 in Stanford-le-Hope and TK8 in Purfleet also monitor PM_{10}. TK3 and TK9 in Tilbury monitor for $PM_{2.5}$. TK1 also monitors for ozone (O_3) and sulphur dioxide (SO_2).

3.6 During 2022, monitoring station TK8, located within AQMA 10, and the Lakeside Tesco diffusion tube site, saw the borough's only readings within 10% of the Air Quality Strategy (AQS) objective for NO_2 with readings of 39.3 and 36.7 µg/m^3 respectively.

3.7 Overall, NO_2 concentrations increased between 2021 and 2022. Across the NO_2 monitoring network, concentrations increased by an average of 1.7 µg/m^3. The greatest increase was observed at diffusion tube site "WT" on London Rd, West Thurrock, at +5.6 µg/m^3. Reported increases are likely a result of traffic returning after the COVID-19 pandemic.

3.8 The average increase in annual mean NO_2 concentrations across all monitoring sites within AQMAs was 1.7µg/m^3 when comparing annual mean concentrations between 2021 and 2022. The average increase in all sites outside AQMAs was 1.8 µg/m^3.

3.9 In relation to the 1-hour AQS objective for NO_2, there were no exceedances reported in 2022. Additionally, all diffusion tube sites in 2022 were below 60µg/m^3, which indicates that none were likely to exceed the 1-hour mean objective.

3.10 2022 monitoring data confirms that there are currently no areas breaching the annual mean air quality objective for PM_{10}. There were some exceedances of the 24-hour mean objective during 2022 at all three automatic sites, however these remained well below the number of permitted exceedances per year. The maximum number of exceedances of the PM_{10} 24-hour mean objective was jointly at TK 1 and TK 3 in 2022 with a total of 3 exceedances each out of the permitted 35 per year.

3.11 All monitored concentrations of $PM_{2.5}$ over the past five years have reported below the $PM_{2.5}$ AQS target of 25µg/m^3.

4. Reasons for Recommendation

4.1 To ensure that the Committee is fully informed on progress towards the Council's statutory obligations on air quality management.

5. Consultation (including Overview and Scrutiny, if applicable)

5.1 Not applicable. No consultation was required for this report.

6. Impact on corporate policies, priorities, performance and community impact

6.1 None. The ASR is a regular update report. Due to the nature of the recommendation of this report, this section is deemed not applicable.

7. Implications

7.1 Financial

Implications verified by: **Rosie Hurst**
Interim Senior Management Accountant

There are no direct finance implications arising from the report.

7.2 Legal

Implications verified by: **Jayne Middleton-Albooye**
Assistant Director - Legal

This report outlines the measures the Council has taken to comply with its duties under Part IV of the Environment Act 1995 as amended by schedule 11 of the Environment Act 2021.

In accordance with the remit of the Cleaner, Greener and Safer Overview and Scrutiny Committee, Members are asked to review and scrutinise the performance of the Council in relation to the analysis of, and commentary on, the Council's air quality monitoring data for the 2022 calendar year as well as updates from the relevant internal departments on progress made against the Air Quality Action Plan (AQAP) over the same period, as set out in this report.

7.3 Diversity and Equality

Implications verified by: **Natalie Smith**

Strategic Lead: Community Development and Equalities

Whilst the annual report highlights the potential health impacts and impacts on equality and diversity, there are no direct diversity and equality implications arising from the report.

7.4 **Other implications** (where significant) – i.e. Staff, Health Inequalities, Sustainability, Crime and Disorder, and Impact on Looked After Children

None

8. Background papers used in preparing the report (including their location on the Council's website or identification whether any are exempt or protected by copyright):

- NA

9. Appendices to the report

- A.1 2023 Annual Status Report on Air Quality
- A.2 Map of Thurrock AQMAs
- A.3 Air Quality Strategy

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