8th November 2022	ITEM: 7
Cleaner, Greener and Safer Overview and Scrutiny	
Annual Status Report on Air Quality in Thurrock	
Wards and communities affected: All	**Key Decision:** Non-key
Report of: Peter Bond - Air Quality Officer	
Accountable Assistant Director: Leigh Nicholson – Assistant Director, Planning, Transport & Public Protection	
Accountable Director: Julie Rogers – Director, 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 2021 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 across the borough are below or well below the Air Quality Strategy (AQS) objectives for this pollutant at all but one monitoring station on London Road, Purfleet. The Purfleet station has consistently exceeded the AQS objective for annual mean nitrogen dioxide concentration, although a steady downward trend is visible in the long-term trend analysis. All other monitoring sites are at least 10% below the AQS objectives for this pollutant. All AQS objective 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.

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 2021. Particulate matter ($PM_{2.5}$) concentrations have been stable across the five-year period with no exceedance of the AQS target for this pollutant.

Air quality within the Council's 18 Air Quality Management Areas (AQMAs) has been compliant in all but AQMA 10 which encompasses Jarrah Cottages on London Road, Purfleet. Since declaration, the average reduction in nitrogen dioxide concentration within Thurrock's AQMAs has been 49.3%. AQMAs 15 and 16, both declared for

individual properties along the east side of the M25, have seen nitrogen dioxide concentrations less than half of the AQS objective for which they were declared. Air quality at these AQMAs has been consistently observed to be >10% below the AQS objective with a steady downward trend over at least the previous five years. Consequently, this report finds that these two AQMAs must be revoked in accordance with Defra's Local Air Quality Management Framework. 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. This 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 Air Quality Management Areas (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 meter – henceforth: µg/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 2021, monitoring station TK8, located within AQMA 10, gave the borough's only exceedance of the Air Quality Strategy (AQS) objective for NO_2 with a reading of 41.9 µg/m^3. No other monitoring sites were within 10% of the AQS Objective.

3.7 Overall, NO_2 concentrations dropped between 2020 and 2021. Across the NO_2 monitoring network, concentrations reduced by 3.2 µg/m^3. However, three sites (LRSS on London Road in South Stifford, PIH at the Premier Inn West Thurrock and WCF on Watts Crescent in Purfleet) all showed increases, with PIH showing an increase of 7.8 µg/m^3. This is likely a result of traffic returning in the latter stages of the COVID-19 pandemic.

3.8 There was an average reduction in annual mean NO_2 concentrations of 3.6µg/m^3 recorded at the monitoring sites located within AQMAs when comparing annual mean concentrations between 2020 and 2021. This reduction has occurred despite the fact that traffic began to return to the borough's roads in 2021 as a result of the lessening of COVID-19 restrictions.

3.9 In relation to the 1-hour AQS objective, there were no exceedances reported in 2021. Additionally, all diffusion tube sites in 2021 were below 60µg/m^3, which indicates that none were likely to exceed the 1-hour mean objective.

3.10 2021 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 2021 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 at Thurrock 8 in 2021 with a total of 6 exceedances 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.

3.12 The findings presented above show that air quality has improved by an average of 49.3% in Thurrock's AQMA since their declaration. Over the past five years, nitrogen dioxide levels have steadily decreased. PM levels have remained largely stable with no exceedances of the AQS objectives or targets. This is likely to have led to significant benefits in health outcomes and quality of life for those who live and work in Thurrock.

3.13 The ASR finds that AQMAs 15 and 16 must be revoked in accordance with the framework laid out in Part IV of the Environment Act (2021). This recommendation has been welcomed by Defra in their feedback on the ASR and should it be taken forwards, the next steps would be to issue a revocation order to Defra and other statutory consultees listed in the Act. Following approval by Defra, the AQMAs must be revoked within four months.

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: **Laura Last**
Senior Management Accountant

There are no direct finance implications arising from the report.

7.2 Legal

Implications verified by: **Gina Clarke**

Corporate Governance Lawyer & Deputy Monitoring Officer

Part 4 of the Environment Act 2021 strengthens the local air quality management framework (LAQM). Schedule 11 contains amendments to Part 4 of the Environment Act 1995 (air quality) and Schedule 12 includes amendments to the Clean Air Act 1993 for local authorities to impose financial penalties in smoke control areas.
Part 4 and Schedules 11 and 12 include:

- Stronger requirements for local authorities under the Local Air Quality Management (LAQM) framework, including requirements for action plans where local air is in breach of air quality objectives
- New powers for local authorities to impose civil penalty notices for the emission of smoke in smoke control areas id. The provisions remove the current statutory defences and make enforcement easier. The provisions also remove the exemption in the Environmental Protection Act 1990 so that smoke emitted from a private dwelling in a smoke control area can be enforced as a statutory nuisance."

7.3 **Diversity and Equality**

Implications verified by: **Rebecca Lee**

Team Manager – Community Development and Equalities - Adults, Housing & Health Directorate

Section 3.2 sets out the negative health impacts from air pollution that can increase potential underlying inequalities for vulnerable groups including those with existing health conditions, children and older members of the community. The Thurrock Air Quality and Health Strategy (2016) sets out the council's overarching objectives for air quality and contains policies and actions that the council will take to improve air quality. 2021 monitoring confirms that there is only one area in Thurrock that is breaching the annual mean air quality objective for nitrogen dioxide. There are a wide range of opportunities for individuals to add support in managing down pollution and these are set out in further detail in Appendix 1.

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 2022 Annual Status Report on Air Quality
- A.2 Map of Thurrock AQMAs
- A.3 Air Quality Strategy

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