

Committees: Port Health and Environmental Services	Date: 19 September 2023
Subject: Air Quality Annual Status Report for 2022	Public
Which outcomes in the City Corporation's Corporate Plan does this proposal aim to impact directly?	2 and 11
Does this proposal require extra revenue and/or capital spending?	N
Report of: Bob Roberts, Executive Director (Interim), Environment	For information
Report author: Ruth Calderwood, Air Quality Manager	

Summary

As part of its statutory duties for London Local Air Quality Management, the City of London Corporation is required to produce an Annual Status Report and submit the report to the Greater London Authority and the government. The report is designed to demonstrate progress with actions contained within the current Air Quality Strategy and to present air quality monitoring data. A copy of the full report, which is produced using a prescribed template, is available on the City Corporation web site. A summary of the monitoring data is attached to this report as Appendix 1.

The City Corporation runs what is probably the densest and most comprehensive network of air quality monitoring equipment in the country. Air quality data was collected in 2022 using three nitrogen dioxide (NO₂) continuous monitors, three particulate PM₁₀ monitors, two particulate PM_{2.5} monitors and one ozone monitor. Nitrogen dioxide data was also collected at 101 sites in the Square Mile using low-cost diffusion tubes.

Since 2019 there has been a significant drop in annual average concentrations of NO₂. In 2022, 90% of the locations measured were below the annual objective of 40µg/m³ with overall concentrations being slightly higher in 2022 than 2021 as workers came back to the City.

Particulate matter is presented as PM₁₀ or PM_{2.5} and is made up of many sources. Some of these travel very long distances and stay in the air for a long time. Concentrations of PM₁₀ have reduced since 2019. There was a slight increase in 2022 when compared to 2021 but concentrations did not go back to pre-pandemic levels. The concentration of PM_{2.5} in Farringdon Street and the Aldgate School continue to be just above the new national limit of 10µg/m³.

The Square Mile has experienced significant improvements in air quality over the last few years. This is set to continue as further measures in the City Corporation's Air Quality Strategy are implemented. Action to improve air quality is strongly supported

across the organisation by a wide range of policies and strategies. The most notable being planning policy, the Transport Strategy, and the Climate Action Strategy.

The existing Air Quality Strategy runs to the end of 2024. Work has commenced to develop a new Air Quality Strategy, which will incorporate new statutory responsibilities for managing local emissions of PM_{2.5}.

Recommendation

Members are asked to:

- Note the contents of the Air Quality Annual Status Report for 2022

Main Report

Background

1. The City of London Corporation has a statutory duty to assist the Mayor of London and the UK government in taking action to reduce levels of air pollution so that concentrations of pollutants meet health-based limits as soon as possible. The City Corporation also has a responsibility to protect public health.
2. The City Corporation's current Air Quality Strategy 2019 – 2024 was adopted in September 2019. It outlines actions that will be taken to fulfil the City Corporation's statutory responsibility for Local Air Quality Management, and for reducing the health impact of air pollution on residents, workers, and visitors to the Square Mile.
3. The City Corporation has a statutory obligation to submit an Annual Status Report to the Mayor of London and the government. The report must outline progress towards actions within the existing Air Quality Strategy and provide the results of air quality monitoring undertaken. A copy of the full report, which is produced using a prescribed template, is available on the City Corporation web site [Air Quality reports - City of London \(www.cityoflondon.gov.uk\)](http://www.cityoflondon.gov.uk). A summary report containing the air quality data is attached as Appendix 1.

Air Quality Data

4. The amount of air quality monitoring taking place in the Square Mile has increased in recent years. In 2022, data was collected using long-term continuous monitors at three nitrogen dioxide (NO₂) sites, three particulate PM₁₀ sites, two particulate PM_{2.5} sites and one ozone site. These monitors provide hourly readings with up-to-date data being available on the web site [Air quality in England \(airqualityengland.co.uk\)](http://airqualityengland.co.uk). Data collected over the past three years for these sites is presented in Table 1.

5. A new ozone (O₃) analyser was installed in the Guildhall in January 2022. Ozone concentrations in the Square Mile haven't been an issue in the past as urban areas tend to have lower ozone pollution than rural areas, due to the presence of other pollutants. However, with lower levels of oxides of nitrogen being emitted, combined with more warm sunny days, a decision was made to install equipment that measures this pollutant. Ozone is what is known as a regional pollutant over which we have no direct control. However, by measuring it, we can issue health warning alerts if concentrations are forecast to be high.

6. Concentrations of air pollution are compared to health-based limits. Limits for nitrogen dioxide and fine particles are taken from those set by the European Union. These limits were based on 2005 World Health Organisation (WHO) Air Quality Guidelines. The Guidelines were updated in 2021 and, in most cases, tightened. The new guidelines have not been incorporated into domestic legislation but are presented in Table 1 for information. The UK government has recently adopted a new annual average limit for PM_{2.5} of 10µg/m³ to be achieved by 2040.

Location	Pollutant as annual average unless specified	UK legal limit (µg/m ³)	WHO Guideline (µg/m ³)		2020 (µg/m ³)	2021 (µg/m ³)	2022 (µg/m ³)
			2005	2021			
The Aldgate School (background)	NO ₂	40	40	10	22	23	23
	PM ₁₀	40	20	15	16	16	17
	PM _{2.5}	10	10	5	12	11	12
Upper Thames Street (roadside)	NO ₂	40	40	10	45	46	52
	PM ₁₀	40	20	15	24	19	19
Beech Street (roadside)	NO ₂	40	40	10	29	31	41
	PM ₁₀	40	20	15	18	15	17
Farringdon Street (roadside)	PM _{2.5}	10	10	5	12	12	12
Guildhall	O ₃ (maximum 8-hour average) *	120	100	100	-	-	153

* the target for ozone is 100 µg/m³ as an 8 hour mean, not to be exceeded more than 10 times a year. It was exceeded on 24 occasions in 2022.

Table 1

7. There was a large drop in levels of nitrogen dioxide across the City in 2020, largely due to the impact of the COVID 19 pandemic. In 2022, as workers returned to the City, levels increased but were well below pre pandemic levels. In 2022 nitrogen dioxide was measured at 101 sites using low-cost diffusion tubes. 10% of these were at or above the $40\mu\text{g}/\text{m}^3$ limit. The data for all sites is presented in both the full report and the summary report, which is attached as Appendix 1
8. One of the main aims of the current Air Quality Strategy is for over 90% of the Square Mile to meet the target for nitrogen dioxide by 2025. An area compliance assessment for 2022 is underway. The area of the Square Mile to comply with the nitrogen dioxide limit value in 2021 was 94%, this is a significant increase from 2019 when it was 67% and just 33% in 2018.
9. PM_{10} concentrations have declined since before the pandemic, though levels in 2022 were slightly higher than 2020 and 2021. The concentration of $\text{PM}_{2.5}$ tends to be fairly static, with levels just above the new UK limit of $10\mu\text{g}/\text{m}^3$.
10. The national target for ozone is $100\mu\text{g}/\text{m}^3$ as an 8 hour mean, not to be exceeded more than 10 times a year. It was exceeded on 24 occasions in 2022.

Progress with Actions

11. The City Corporation published its latest Air Quality Strategy in 2019. The strategy details actions that are being taken to improve air quality. The Air Quality Annual Status Report includes progress with each action. Examples are given below:
 - Installed an ozone analyser at Guildhall.
 - Used the contents of the Emissions Reduction (Local Authorities in London) Private Members Bill to influence discussions with Defra about options for new powers for local authorities.
 - Reviewed air quality action plans five City schools and four nurseries.
 - Hosted and chaired four meetings of the London Air Quality Steering group.
 - Responded to complaints of unnecessary engine idling. All were dealt with informally; no Penalty Charge Notices or Fixed Penalty Notices were issued during 2022.
 - Undertook 17 audits of construction sites to ensure compliance with emission requirements for on-site equipment.
 - Inspected all shops likely to sell solid fuel to check for compliance with new Solid Fuel Regulations
 - Partnered with Clean City Award Scheme to provide an 'Air Quality and Climate Change' award.
 - Created a factsheet for health professionals summarising the health impacts of air pollution and delivered webinars for health practitioners.

- Hosted an early evening lecture in December 2022 to mark the 70th anniversary of the Great Smog.
- Provided advice through a monthly air quality e-newsletter, Twitter and LinkedIn

Corporate & Strategic Implications

Strategic implications

12. Air quality policy and action at the City Corporation is framed in the Air Quality Strategy 2019 – 2024. It is supported by the Climate Action Strategy, Transport Strategy, Responsible Business Strategy, Procurement Strategy, and draft City Plan.

13. The work on air quality directly supports two Corporate Plan outcomes:

‘People enjoy good health and wellbeing’.
‘We have clean air, land and water’.

Financial implications

14. None.

Resource implications

15. None

Legal implications

16. None

Risk implications

17. Air quality is listed as a Corporate risk. The most recent Deep Dive into the risk was presented to Audit and Risk Management Committee in January 2021.

Equalities implications

18. Action to improve air quality has a positive impact on all sections of the population. The benefit is greatest for children and the elderly as they are more susceptible to the health impacts of air pollution. There is also a positive impact on individuals whose lives are affected by asthma and other respiratory and cardiovascular conditions.

Security implications

19. None

Conclusion

20. The City Corporation has completed its 2022 Air Quality Annual Status Report. This fulfils part of the City Corporation's statutory obligations for Local Air Quality Management.

21. The Square Mile has experienced improvements in air quality over the past few years, particularly for nitrogen dioxide. This is set to continue as further measures in the City Corporation's Air Quality Strategy are implemented. Action to improve air quality is strongly supported across the organisation by a wide range of policies and strategies. This is most notable in planning policy, the Transport Strategy, and the Climate Action Strategy.

22. Work has commenced to develop a new Air Quality Strategy which will incorporate new statutory responsibilities for managing local emissions of PM_{2.5}. The draft strategy will be available for consultation in Spring 2024.

Appendices

- Appendix 1 – Air Quality Annual Status Summary Report for 2022

Ruth Calderwood,
Air Quality Manager
T: 020 7332 1162
E: ruth.calderwood@cityoflondon.gov.uk