

Committees: Port Health and Environmental Services	Date: 10 October 2022
Subject: Air Quality Annual Status Report for 2021	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: Juliemma McLoughlin, Executive Director, Environment	For information
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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 latest Air Quality Strategy and to present air quality monitoring data. A copy of the full report, which is produced using a prescribed template, will be made available on the Corporation web site and is available on request. A summary report containing the monitoring data, is attached to this report as Appendix 1.

Despite the ongoing disruption due to the impact of the COVID-19 pandemic during 2021, good progress was made with a wide range of actions and air quality monitoring continued throughout the year.

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 2021 using three nitrogen dioxide (NO₂) continuous analysers, three particulate PM₁₀ analysers and two particulate PM_{2.5} analysers. Nitrogen dioxide data was also collected at 105 sites using low-cost diffusion tubes.

The impact of the COVID 19 pandemic on levels of air pollution in the Square Mile was still apparent in 2021. Since 2019 there has been a significant drop in annual average concentrations of NO₂. In both 2020 and 2021, nearly all locations met the annual objective of 40µg/m³ with overall concentrations being very slightly higher in 2021 than 2020.

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. Roadside sites did however see a reduction in annual mean PM₁₀

concentrations in 2021, when compared to 2020, with background levels remaining the same. PM_{2.5} remained the same at roadside with background levels being slightly reduced.

The Square Mile has experienced significant improvements in air quality. 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.

Recommendation

Members are asked to:

- Note the contents of the Air Quality Annual Status Report for 2021

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 latest 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, will be made available on the Corporation web site. It is also available on request. 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 2021, data was collected using long-term continuous monitors at three nitrogen dioxide (NO₂) sites, three particulate PM₁₀ sites and two particulate PM_{2.5} sites. Data collected over the past three years for these sites is presented in Table 1.

5. Concentrations of air pollution are compared to health-based limits. Limits in the UK are taken from those set by the European Union, which were based on 2005 World Health Organisation 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 government has recently consulted on adopting a new annual average limit for PM_{2.5} of 10µg/m³.
6. In 2021, nitrogen dioxide data was also collected at 105 sites using low-cost diffusion tubes. Data from diffusion tubes is less accurate than from the continuous analysers. It is, however, very useful to show long term trends and highlight hot-spot locations. The data for all sites is presented in both the full report and the summary report, which is attached as Appendix 1.

Location	Pollutant	UK legal limit	WHO Guideline		Annual average 2019 (µg/m ³)	Annual average 2020 (µg/m ³)	Annual average 2021 (µg/m ³)
			2005	2021			
The Aldgate School (background)	NO ₂	40	40	10	33	22	23
	PM ₁₀	40	20	15	19	16	16
	PM _{2.5}	25	10	5	12	12	11
Upper Thames Street (roadside)	NO ₂	40	40	10	73	45	46
	PM ₁₀	40	20	15	27	24	19
Beech Street (roadside)	NO ₂	40	40	10	62	29	31
	PM ₁₀	40	20	15	22	18	15
Farringdon Street (roadside)	PM _{2.5}	25	10	5	14	12	12

Table 1

7. Levels of nitrogen dioxide are reducing across the Square Mile. In both 2020 and 2021 there was a significant drop in annual average concentrations of nitrogen dioxide measured at roadside when compared to 2019. This was principally due to the impact of the COVID-19 pandemic. In 2021 nearly all locations met the annual objective of 40µg/m³.
8. Background concentrations of nitrogen dioxide also reduced dramatically, with the analyser at the Aldgate School measuring an annual average of 23µg/m³. This was slightly higher than in 2020 when it was 22µg/m³ but down from 33µg/m³ in 2019.
9. PM₁₀ concentrations have also declined, though not by the same magnitude as nitrogen dioxide. 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.

10. The concentration of PM_{2.5} in Farringdon Street and the Aldgate School continue to be well below the annual average limit value, but above the current World Health Organisation guideline and just above the government's proposed new UK limit of 10µg/m³.

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. Despite the impact of the COVID-19 pandemic on working practices during 2021, good progress was made with a wide range of actions. Examples are given below:

- Continued to use the content of the Emission Reduction (Local Authorities in London) Private Members Bill to influence discussions with Defra about options for new powers for local authorities.
- Hosted a London Borough's 'Sharing Best Practice in Air Quality' event, with over 50 attendees.
- Hosted and chaired four meetings of the London Air Quality Steering group
- Jointly lead the Pan London Vehicle Idling Action Project with the London Borough of Camden and delivered a very successful London wide advertising campaign.
- Undertook research into the sources of PM_{2.5} in the Square Mile
- Responded to complaints of unnecessary engine idling. All were dealt with informally; no Penalty Charge Notices or Fixed Penalty Notices were issued during 2021
- Undertook 40 audits of construction sites to ensure compliance with emission requirements for on-site equipment
- Inspected all shops likely to sell solid fuels to check for compliance with new Solid Fuel Regulations
- Worked with the Port of London Authority on a Clean Air Thames project to trial engine emission retrofit on river vessels.
- Partnered with Clean City Award Scheme to provide a '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.
- Reviewed air quality action plans for five City schools and four nurseries
- Undertook a year-long Citizen Science air quality monitoring project on the Barbican and Golden Lane Estates with over 50 participants
- Continued to promote air quality 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 2021 Air Quality Annual Status Report. This fulfils part of the City Corporation’s statutory obligations for London Local Air Quality Management.

21. Despite the impact of the COVID-19 pandemic on activity in the Square Mile, good progress was made with a wide range of actions and air quality monitoring continued throughout the year.

22. The impact of the response to the COVID-19 pandemic led to a dramatic reduction in concentrations of nitrogen dioxide across the Square Mile. Levels of PM₁₀ also reduced but by a smaller amount. PM_{2.5} largely remained the same.
23. The Square Mile has experienced significant improvements in air quality, 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.

Appendices

- Appendix 1 – Air Quality Annual Status Summary Report for 2021

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