

<b>Committees:</b> Port Health and Environmental Services – for information Planning and Transportation – for information	<b>Date:</b> 13 July 2021 20 July 2021
<b>Subject:</b> Air Quality Annual Status Report for 2020	<b>Public</b>
<b>Which outcomes in the City Corporation’s Corporate Plan does this proposal aim to impact directly?</b>	2 and 11
<b>Does this proposal require extra revenue and/or capital spending?</b>	<b>N</b>
<b>Report of:</b> Jon Averbs, Director of Markets and Consumer Protection	<b>For information</b>
<b>Report author:</b> 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 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 impact of the COVID-19 pandemic on activity in the Square Mile during 2020, 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 2020 using three nitrogen dioxide continuous analysers, three PM<sub>10</sub> analysers and two PM<sub>2.5</sub> analysers. Nitrogen dioxide data was also collected at numerous sites using low cost diffusion tubes. Data from diffusion tubes is less accurate than the continuous analysers but is very useful to show long term trends and highlight hot-spot locations. The data for all sites, with a map of monitoring locations, is presented in the summary report attached as Appendix 1.

In 2020 there was a significant drop in annual average concentrations of nitrogen dioxide at roadside when compared to 2019. This was principally due to the impact of the COVID-19 pandemic. In 2020 nearly all locations met the annual objective of 40µg/m<sup>3</sup>, many of the roadside locations did so for the first time since monitoring began. Some sites had a reduction of nitrogen dioxide levels of over 45% when

compared to 2019. Of note is Beech Street, where annual average NO<sub>2</sub> reduced by 53% from 2019 to 2020 and levels fell below the annual mean objective of 40µg/m<sup>3</sup> for the first time. This was due to the combined impact of the COVID-19 pandemic and the Zero Emissions Street pilot.

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. All three continuously monitored sites did however see a reduction in annual mean PM<sub>10</sub> concentrations of around 3µg/m<sup>3</sup> in 2020, when compared to 2019. PM<sub>2.5</sub> remained the same at background sites and slightly reduced at roadside

As activity returns to the Square Mile, the amount of air pollution is expected to increase. However, it is not anticipated to return to pre-2019 levels due to the wide range of action being taken to improve air quality by the City Corporation, which is supported by action taken more widely across London. This activity is being reflected in the year on year reduction in air pollution that is being measured. Action to improve air quality is contained within the City Corporation's Air Quality Strategy, which 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 new Climate Action Strategy.

## **Recommendation**

Members are asked to:

- Note the contents of the Air Quality Annual Status Report for 2020

## **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 once all data has been fully ratified. 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 City has increased in recent years. In 2020, data was collected using long-term continuous monitors at three nitrogen dioxide (NO<sub>2</sub>) sites, three particulate PM<sub>10</sub> sites and two particulate PM<sub>2.5</sub> sites. Data collected over the past three years for these sites is presented in Table One.
5. Nitrogen dioxide data was also collected at numerous sites using low cost diffusion tubes. Data from diffusion tubes is less accurate than from the continuous analysers but is 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.
6. Air quality monitoring locations are reviewed annually. As part of the ongoing maintenance and management, and to ensure resilience, one PM<sub>10</sub> analyser and two NO<sub>2</sub> analysers were replaced during 2020. There are five long-term diffusion tube locations which are retained each year. Other diffusion tube sites are added or removed according to the needs of research projects, planned programmes and local investigations or concerns. The summary report in Appendix 1 contains a map of monitoring locations during 2020.
7. At the time of writing this report, all data has been fully ratified except for the PM<sub>2.5</sub> data for Farringdon Street and the PM<sub>10</sub> data for Beech Street. The data presented for these sites is therefore provisional and the final data set for these locations may change slightly.

Location	Pollutant	EU Limit value	WHO Guideline	Annual average 2018 ( $\mu\text{g}/\text{m}^3$ )	Annual average 2019 ( $\mu\text{g}/\text{m}^3$ )	Annual average 2020 ( $\mu\text{g}/\text{m}^3$ )
The Aldgate School (formerly Sir John Cass's Foundation Primary School) [background]	Nitrogen dioxide	40	40	32	33	22
	PM <sub>10</sub>	40	20	21	19	16
	PM <sub>2.5</sub>	25	10	12	12	12
Upper Thames Street (roadside)	Nitrogen dioxide	40	40	87	73	45
	PM <sub>10</sub>	40	20	32	27	24
Beech Street (roadside)	Nitrogen dioxide	40	40	69	62	29
	PM <sub>10</sub>	40	20	25	22	18*
Farringdon Street (roadside)	PM <sub>2.5</sub>	25	10	16	14	12*

Table One

\*Data is provisional

8. Levels of nitrogen dioxide are reducing across the City. In 2020 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 2020 nearly all locations met the annual objective of  $40\mu\text{g}/\text{m}^3$ , many of which did so for the first time since monitoring began. Some sites had a reduction of  $\text{NO}_2$  levels of over 45% when compared to 2019.
9. Data collected at Beech Street and Walbrook Wharf show that large reductions in  $\text{NO}_2$  were seen towards the end of March 2020. This coincided with the first national lockdown. The relatively low levels remained all summer, gradually increasing later in the year when traffic volumes started to increase. There were no recordings of 1-hour periods experiencing concentrations of greater than  $200\mu\text{g}/\text{m}^3$  during 2020. Levels above this are considered to be hazardous to health. This compared to 7 hours at Beech Street and 15 hours at Walbrook Wharf during 2019.
10. The annual average nitrogen dioxide concentration at Beech Street reduced by 53% from 2019 to 2020 and levels fell below the annual mean objective of  $40\mu\text{g}/\text{m}^3$  for the first time since monitoring began. This was due to the combined impact of the COVID-19 pandemic and the Zero Emissions Street pilot.
11. Background concentrations of nitrogen dioxide also reduced dramatically, with the analyser at the Aldgate School measuring an annual average of  $22\mu\text{g}/\text{m}^3$ . This was

down from 33 $\mu\text{g}/\text{m}^3$  in 2019. This reflected a reduction in activity across the whole of London during 2020.

12. All three continuously monitored sites measured a reduction in annual mean PM<sub>10</sub> concentrations in 2020, though it was not as significant as for 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. The reduction, when compared to 2019 values, was 3 $\mu\text{g}/\text{m}^3$  at the Aldgate School, 4 $\mu\text{g}/\text{m}^3$  at Beech Street and 3 $\mu\text{g}/\text{m}^3$  at Walbrook Wharf. All sites meet the annual average air quality objective (40 $\mu\text{g}/\text{m}^3$ ) and the short-term objective of not exceeding 50 $\mu\text{g}/\text{m}^3$  on more than 35 days in the year. However, Upper Thames Street continues to breach the current World Health Organisation Guideline for PM<sub>10</sub>.
13. The concentration of PM<sub>2.5</sub> 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. There was a reduction of 2 $\mu\text{g}/\text{m}^3$  of PM<sub>2.5</sub> in Farringdon Street during 2020, however the concentration at the Aldgate School remained the same.

### **Progress with Actions**

14. The City Corporation published a new 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 2020, good progress was made with a wide range of actions. Examples are outlined below:
  - Continued to use the content of the Emission Reduction (Local Authorities in London) Private Members Bill to influence the Environment Bill
  - Jointly lead the Pan London Idling Action Project with the London Borough of Camden and delivered a very successful London wide advertising campaign comprising 4 campaign images for billboards, petrol stations and social media, a radio advert and a short video.
  - Introduced a new Penalty Charge Notice (PCN) offence for unnecessary vehicle engine idling. No PCNs were issued during 2020 due to the lack of activity in the City and requirement for social distancing
  - Undertook 40 audits of construction sites in the Square Mile to ensure compliance with emission requirements for on-site equipment
  - Worked with the Port of London Authority on a Clean Air Thames project to trial engine emission retrofit on river vessels.
  - Worked with Cross River Partnership on a Clean Air Village programme, focusing on Monument to Houndsditch. Developed an 'Air Quality Ambassador' scheme to train individuals to run air quality sessions and events within their own community

- Partnered with Clean City Award Scheme to provide a new 'Air Quality and Climate Change' award with 20 large companies submitting applications
- Completed extensive engagement with local cargo bike companies and put together resources to encourage uptake of cargo bike services in a business supply chain
- The Beech Street zero emission street pilot went live in March 2020. Annual average nitrogen dioxide levels in Beech Street reduced from 62µg/m<sup>3</sup> in 2019 to 29µg/m<sup>3</sup> in 2020
- Delivered a webinar with Heart of the City, New London Architecture and Cheapside Business Alliance on 'Home Working – impact on air quality and climate emissions' with a 'Top 10 tips to reduce emissions at home'.
- Held an event at the start of 2020: *Improving Air Quality through Procurement in the Public Sector* with over 100 attendees
- Developed guidance on best practice for combustion plant and hosted two webinars to disseminate the guidance for local authorities and Facilities Managers
- Produced local air quality action plans for five City schools and four nurseries,
- Five all electric Refuse Collection Vehicles are now in use for the refuse collection contract.
- The new Corporate Courier Contract requires the use of zero emission transport for deliveries under five miles.
- Issued an environmental permit to Barts Health NHS Trust to operate the on-site energy centre
- Commenced Air Quality Citizen Science programme in the Barbican and Golden Lane areas
- Continued to promote air quality through a monthly air quality e-newsletter, Twitter and set up a new LinkedIn account to disseminate information to a wider audience

## **Corporate & Strategic Implications**

### **Strategic implications**

15. 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.
16. 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**

17. None.

### **Resource implications**

18. None

### **Legal implications**

19. None

### **Risk implications**

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

### **Equalities implications**

21. 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**

22. None

## **Conclusion**

23. The City Corporation has prepared its 2020 Air Quality Annual Status Report to submit the Mayor of London and government. This fulfils the City Corporation's statutory obligations for London Local Air Quality Management.

24. 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.

25. 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 PM<sub>10</sub> also reduced but by a smaller amount. PM<sub>2.5</sub> reduced at roadside but remained the same at background.

26. As activity returns to the Square Mile, levels of air pollution are expected to increase. However, they are not anticipated to return to pre-2019 levels due to the wide range of action being taken to improve air quality by the City Corporation and more widely across London. This activity is being reflected in the year on year reduction in air pollution that is being measured. The City Corporation's Air Quality Strategy is strongly supported across the organisation by a wide range of policies and strategies, most notably planning policy, the Transport Strategy and the new Climate Action Strategy.

## **Appendices**

- Appendix 1 – Air Quality Annual Status Summary Report for 2020

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