

Committee Audit and Risk Management Port Health and Environmental Services Planning and Transportation Health and Social Care Scrutiny	Dated: 28 January 2020 3 March 2020 6 March 2020 26 February 2020
Subject: Deep Dive: CR21 Air Quality	Public
Report of: Director of Markets and Consumer Protection	For Information
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Summary

Air quality is currently an amber corporate risk, with a risk score of 12. It was initially designated a red corporate risk; however, the risk has been reduced. This is due to ongoing improvements in air quality together with the wide range of action that has been, and continues to be, taken by the City Corporation to mitigate the risk. The risk reflects the potential impact on the health of residents, workers and visitors to the Square Mile. It also reflects the potential reputational and financial risk to the City of London Corporation. The target is to achieve a risk score of 6.

Extensive air quality monitoring across the Square Mile demonstrates that air quality is improving, although there is still some way to go before it meets health-based limits and guidelines at all locations. There was a marked improvement in roadside concentrations of nitrogen dioxide (a product of combustion) in 2019, when compared to the previous year. This was largely due to the roll out of the new electric taxi for London, electric single deck buses, and the introduction of the Mayor of London's ultra-low emission zone. The implementation of the City Corporation's new Transport Strategy will deliver further improvements in roadside air quality over the next few years.

The City Corporation published its third Air Quality Strategy in 2019 outlining the wide range of action being taken to improve air quality. The five-year strategy was very well received. The Greater London Authority, who oversees the City Corporation's statutory air quality function, consider it to be an *'excellent plan, with a very thorough and engaging narrative and a comprehensive range of detailed, specific and ambitious actions..... an excellent plan which once again demonstrates your leadership in this field'*. Clean Air London (CAL), a campaign organisation said *'CAL considers that the CoL is doing more than any Borough in Greater London to improve air quality'*

The City Corporation has developed proposals for an Emission Reduction (Local Authorities in London) Bill. The Bill, which has the support of London Councils, proposes adoptive powers for all London local authorities to reduce emissions of

pollutants from a wide range of combustion plant used for heating and electricity generation. The Bill was introduced to the House of Lords as a Private Member's Bill by Lord Tope on Monday 13th January 2020.

The Government has also published an Environment Bill which includes proposals for new air quality targets. This will eventually replace the current air quality targets which are based on European Union obligations. Proposals in the Bill also include passing more responsibility for improving air quality to local government. Depending on the targets to be achieved, this renewed responsibility could pose a challenge for the City Corporation due to its size and location. Much of the pollution within the Square Mile is not generated within its boundary.

Ongoing research into poor air quality has led to it being linked to an increasing range of diseases. Towards the end of 2020, there will be a new inquest into the death of a London child who died from acute respiratory failure and asthma. The inquest will take place to ascertain if exposure to outdoor air pollution was a causative factor in the child's death. If this is proven, it will be the first time that air pollution is explicitly linked to a named individual's death. This would have the potential to open the door for legal action against bodies deemed responsible.

The City Corporation is exceeding its current statutory duty to improve air quality and is widely regarded as demonstrating leadership in this area. With the forthcoming potential changes in air quality targets and statutory obligations, in addition to the ongoing research into the health impacts of air pollution and the new inquest cited above, the City Corporation needs to remain agile and proactive in its approach. The Corporation must continue to deliver a high-quality programme that will serve to minimise the risk of air pollution to public health.

Recommendation

Members are asked to note the report.

Main Report

Background

1. Being located at the heart of London, the Square Mile experiences some of the highest levels of air pollution in the country. Local air pollution is affected by emissions of pollutants from both within the Square Mile, and beyond its boundary. It is also affected by the size, shape and proximity of buildings, which can act to trap pollution, and the weather.
2. Air quality is currently an amber corporate risk with a risk score of 12, see Appendix 1. It was initially designated a red corporate risk, but the risk has been reduced due to ongoing improvements in air quality and the wide range of action being taken by the City Corporation to further mitigate the risk. The risk reflects the potential impact on the health of residents, workers and visitors to the Square

Mile. It also reflects the potential reputational and financial risk to the City of London Corporation as an organisation. The target is a risk score of 6.

3. The impact of air pollution on health is both acute and chronic. Research into the health impacts is ongoing and it is being linked to an increasingly wide range of diseases. The main health impact is cardiovascular and cardiopulmonary disease, lung cancer and respiratory disease. It also affects lung development in children. Short term pollution episodes can lead to an increase in hospital admissions for vulnerable people. Exposure to current levels of air pollution in central London over the long term has been shown to reduce life expectancy across the whole population.
4. Responsibility for improving air quality lies with local, regional and national government. To date, the statutory responsibility of local government in London has been to assist the Government and the Mayor of London with action to ensure that levels of air pollution are lower than limits set in European Union (EU) Directives. Air quality in the UK meets the EU air quality limits for all pollutants except nitrogen dioxide (NO₂). NO₂ is a colourless and odourless gas that is a product of combustion.
5. Fine particles (PM₁₀ and PM_{2.5}) are composed of a wide range of material. They are not visible to the naked eye. Levels of PM₁₀ and PM_{2.5} in the Square Mile meet current EU limits, though they are higher than World Health Organisation (WHO) Guidelines. Table 1 shows the difference between EU limits and WHO guidelines for nitrogen dioxide and fine particles. WHO air quality guidelines are currently being reviewed. The outcome of the review should be available in 2020/2021 and is likely to influence domestic air quality targets.
6. The current responsibility for controlling levels of PM_{2.5} lies with national, not local, government. This is because it is classed as a 'regional pollutant' over which local authorities have very little control. Particulate matter can stay in the air for a very long time and move around with the wind. Local authorities have a statutory obligation under the Health and Social Care Act 2012 to improve the health of their population. One of the indicators used to assess performance with obligations under this legislation is exposure of the population to PM_{2.5} particle pollution.
7. The United Kingdom is in the process of leaving the European Union. At the time of writing this report, it is likely that the UK's air quality obligations under EU law will continue until the end of December 2020.
8. In October 2019, the Government introduced an Environment Bill. The Bill, which fell as the previous parliament was dissolved, should be reintroduced to parliament in 2020. It sets out a requirement for a legally binding domestic target for air quality, with an additional specific target for PM_{2.5}. The new targets are likely to replace the existing targets set under EU law.
9. The Environment Bill outlines proposals to amend the Local Air Quality Management framework. The framework defines the statutory obligations of local authorities. The outcome would be to delegate more responsibility for improving

air quality down to a local level. Passing the duty to achieve the target for PM_{2.5} to local government could pose a challenge for the City Corporation due to the limited local control over this pollutant. The Bill also proposes to amend aspects of the Clean Air Act 1993 to enable quicker, simpler and more proportionate enforcement of Smoke Control Areas. It does not include proposals for additional powers for local authorities to deal with the full range of combustion plant found in urban areas that are used to generate heat or electricity. The City Corporation hopes to address this through the Emission Reduction (Local Authorities in London) Private Members Bill, see paragraph 28.

10. Towards the end of 2020, there will be a new inquest into the death of a London child, who died from acute respiratory failure and asthma. The inquest will take place to ascertain if exposure to outdoor air pollution was a causative factor in the child's death. If this is proven, it will be the first time that air pollution is explicitly linked to a named individual's death. This would have the potential to open the door for legal action against bodies deemed responsible.
11. The health impact of air pollution continues to receive very wide media coverage. This coverage has led to a greater understanding of the issues by the public, and an increase in the expectation of robust action by accountable bodies. There has also been an increased demand for data. This has been addressed by the City Corporation with additional resources. There is now a small air quality team delivering the City Corporation's air quality programme in the Department of Markets and Consumer Protection. Extensive air quality monitoring also takes place across the Square Mile to fulfil the demand for additional data.
12. Improving air quality is a key priority for the City Corporation and officers are called upon to provide expertise and leadership on air quality across London and on a national basis. The City Corporation is recognised as the lead local authority for air quality policy across London.

Risk mitigation

13. In order to reduce the risk associated with poor air quality in the Square Mile, the City Corporation needs to demonstrate that, at a minimum, it is fulfilling its statutory obligation and that it has taken, and will continue to take, a wide range of action to bring about improvements to air quality. The City Corporation must also ensure that it takes necessary steps to protect the health of residents, workers and visitors to the City through the provision of appropriate information and robust and reliable data.

Air Quality Strategy

14. As levels of pollution do not meet health-based limits in the Square Mile, the City Corporation has a statutory obligation to produce an Air Quality Action Plan. The Plan must outline action that will be taken to both improve air quality, and to help people reduce their exposure to the highest levels of air pollution.

15. The City Corporations Action Plan has been incorporated into an Air Quality Strategy. The latest Air Quality Strategy was published in September 2019. The aims of the strategy are to:
- a. fulfil statutory obligations for London Local Air Quality Management and improving public health
 - b. ensure that air quality in over 90% of the Square Mile meets the health-based Limit Values and World Health Organisation Guidelines for nitrogen dioxide by the beginning of 2025
 - c. support the Mayor of London to meet World Health Organisation Guidelines for particulate matter (PM₁₀ and PM_{2.5}) by 2030
16. The above aims will deliver three main outcomes:
- a. the Square Mile has clean air
 - b. people enjoy good health, through reduced exposure to poor air quality
 - c. the City Corporation is a leader for air quality policy and action and inspires collaboration across London
17. The outcomes will be achieved by action across 6 policy areas:
- a. air quality monitoring
 - b. leading by example
 - c. collaborating with others
 - d. reducing emissions from transport
 - e. reducing emissions from non-transport sources
 - f. raising awareness.
18. There are 65 actions associated with these policy areas, with detail on how they will be taken forward, timelines, departmental responsibility and relative costs.
19. The Greater London Authority, which oversees the Corporation's statutory air quality function, said that the Air Quality Strategy is an *'excellent plan, with a very thorough and engaging narrative and a comprehensive range of detailed, specific and ambitious actions..... Congratulations on an excellent plan which once again demonstrates your leadership in this field'*. Clean Air London (CAL), a campaign organisation said *'CAL considers that the CoL is doing more than any Borough in Greater London to improve air quality'*
20. Progress with actions, together with the most recent air quality data, is reported to the Mayor of London and government each year. These are statutory reports that are presented to the Port Health & Environmental Services Committee. The latest report was presented on 24th September 2019. A summary report, which includes seven years data, is attached to this report as Appendix 2.
21. The Air Quality Strategy 2019 demonstrates the strong cross departmental support for improving air quality and reducing the impact on public health. Air quality has been firmly embedded into the City Corporation Corporate Plan 2018 - 2023, Transport Strategy, Responsible Business Strategy, Responsible Procurement Strategy and draft City Plan.

22. Paragraphs 23 through to 37 outline some of the actions underway to improve air quality. Further detail can be found in the Air Quality Strategy 2019.

Air Quality Monitoring

23. The City Corporation runs an extensive network of air quality monitors. Monitoring takes place to:

- a. check compliance against air quality objectives, guidelines and limit values, and consequently the impact on health
- b. assess long term trends and the effectiveness of policies and interventions to improve air quality
- c. raise awareness and provide alerts to the public when air pollution levels are high

24. The amount of air pollution in the City of London at any given time is influenced by a range of factors. The main factor affecting day to day levels of air pollution is the weather. Traffic diversions and road closures can also have a significant impact on air pollution locally.

25. To see whether air quality is improving over time, annual average data taken from long-term monitoring stations is assessed. There has been a clear pattern of improvement over the past few years, with a notable reduction in concentrations in 2019 compared to the previous year, see Table 1.

26. In addition to the ongoing package of measures being implemented by the City Corporation through its Air Quality Strategy, this marked improvement in 2019 is due to vehicle emissions becoming cleaner, the introduction of the Mayor of London's ultra-low emission zone in April 2019 and the increasing number of electric buses and taxis that now drive around City streets. The higher than average rainfall during autumn 2019 contributed to the lower levels of PM₁₀ and PM_{2.5} at all sites.

Location	Pollutant	EU Limit value	WHO Guideline	Annual average 2018 (µg/m ³)	Annual average 2019* (µg/m ³)
Sir John Cass Foundation Primary School (background)	Nitrogen dioxide	40	40	32	32
	PM ₁₀	40	20	21	19
	PM _{2.5}	25	10	12	11
Upper Thames Street (roadside)	Nitrogen dioxide	40	40	87	71
	PM ₁₀	40	20	32	28
Beech Street (roadside)	Nitrogen dioxide	40	40	69	61
	PM ₁₀	40	20	25	22
Farringdon Street	PM _{2.5}	25	10	16	14

(roadside)					
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Table 1

*Data for 2019 is provisional

Leading by Example

27. Improving air quality is a political priority, for which there is very strong Member interest and support. The City Corporation is taking a wide range of steps to reduce emissions of air pollution from its own fleet, buildings and activities. This is largely undertaken through robust responsible procurement practices. Recent examples include electric refuse collection vehicles in the latest refuse collection contract and the three new electric vehicles purchased for the Lord Mayor in summer 2019.
28. The City Corporation has also demonstrated leadership in this area with proposals for an Emission Reduction (Local Authorities in London) Bill. The Bill includes new adoptive powers for London local authorities to control emissions from combustion plant: boilers, generators, combined heat and power plant and equipment used on construction sites. These powers are lacking at present. The Bill, which is supported by London Councils, was introduced to the House of Lords on Monday 13th January 2020 by Lord Tope, Co-President of London Councils.

Collaboration

29. The City Corporation collaborates with a very wide range of organisations on actions to improve air quality. Current activity includes:
- a. Hosting best practice events for all London Boroughs
 - b. Working with a range of partners to trial retrofit technology to reduce emissions of air pollutants from the Thames river vessels
 - c. Working with City businesses to encourage emission reduction from their activities
 - d. Jointly leading a London Borough wide idling engine programme with the London Borough of Camden, supported by the Mayor of London
 - e. Working with research bodies to assess the impact of urban form on air pollution
 - f. Working with City schools and nurseries to develop tailored action plans to improve local air quality. In 2018 the City Corporation won a national air quality award for collaborative action at Sir John Cass's Foundation Primary School which delivered a significant improvement in local air quality.

Reducing Emissions from Transport

30. The highest levels of air pollution in the Square Mile tend to be found along the busiest roads. This is particularly the case if the road is narrow with tall buildings either side as pollution can become trapped.

31. The City Corporation published its first Transport Strategy in 2019. It contains proposals to reduce emissions of pollutants from road transport as well as actions to reduce the exposure of pedestrians to existing levels of pollution. These measures have been incorporated into the Air Quality Strategy
32. Actions include ambitious targets for traffic reduction, zero emission zones by 2020, increased electric vehicle charging infrastructure and the increase in the number of pedestrianised and pedestrian priority streets. Approval has recently been given for a zero-emission transport scheme in Beech Street. As the street is covered, it will lead to significant improvements in air pollution and be of direct health benefit to the many pedestrians and cyclists that use the street.

Reducing Emissions from Non-Transport Sources

33. Non transport sources make a significant contribution to air pollution in the City of London. The main source is combustion plant used for generating electricity and for heating. It includes boilers, combined heat and power plant, mobile and static generators and machinery used on construction sites. Air pollution is also generated by cooking in restaurants.
34. The main mechanisms used by the City Corporation for controlling air pollution from non-traffic sources are planning policy, management of construction activity, chimney height approvals under the Clean Air Act 1993 and promoting best practice with City businesses and food premises.
35. Increased air quality monitoring has revealed localised high levels of air pollution in the Square Mile that are not associated with traffic. One example is high levels of nitrogen dioxide associated with energy plant at St Bartholomew's Hospital. Officers are working with Barts Health NHS Trust to reduce emissions of air pollution from the energy centre. The City Corporation's Bill would provide much needed powers to ensure that clean equipment and plant is used and installed in the Square Mile.

Raising Awareness

36. Although air quality is improving, it remains at a level that can have a detrimental impact on health. A wide range of action is therefore taken to increase public understanding about air pollution, its causes, effects and how concentrations vary both spatially and over time. Armed with the right information, people can take steps to avoid high levels of air pollution and reduce the impact on their health.
37. The City Corporation runs and attends air quality events, produces a bimonthly e-newsletter and has developed a free smart phone application (App), used by over 30,000 Londoners. The App provides high pollution alerts and helps users avoid areas of poor air quality.

Risks and challenges

38. There are some issues that make air quality improvements challenging in the Square Mile. Action is underway to try and address them, but some are outside of the control of the City Corporation.
- a. There are on-going uncertainties around emissions from diesel vehicles. Emissions from the newest (Euro VI) heavy goods vehicles are low, but emissions from vans and cars still don't meet the required limits. This is being dealt with at a European level. Currently, there are only a small number of alternatives to diesel vans available on the market. This makes it challenging to introduce policies to restrict these vehicles. However, over the next few years the availability of zero emission vans is expected to increase.
 - b. Due to its location, the Square Mile is heavily influenced by pollution generated across London. This is dealt with by the collaborative, London wide approach taken by officers in finding solutions.
 - c. The drive for decentralised energy is bringing electricity generation back into the centre of London, with the associated pollution. Combined heat and power plant are being installed in new developments. This plant emits much higher levels of oxides of nitrogen (NOx) than gas boilers and can result in very high localised levels of nitrogen dioxide. The City Corporation proposes to address this through the Emission Reduction (Local Authorities in London) Private Member's Bill
 - d. Organisations with large back-up generators are being asked to run them in times of peak energy demand in a process known as Short Term Operating Reserve (STOR). The generators are diesel fuelled and tend to be only designed for emergency use. The City Corporation proposes to address this through its Bill.

Corporate & Strategic Implications

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

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

40. Improving air quality is overseen by the Port Health and Environmental Services Committee and is a priority for the Health and Wellbeing Board. It is also of interest to the Planning and Transportation and Streets and Walkways Committees.
41. Since the 2018 deep dive report to the Audit and Risk Management Committee, improving air quality has been further embedded into key policy areas across the organisation. It has very strong cross departmental support in recognition of the issue being a corporate risk.

Conclusion

42. Air quality is currently an amber corporate risk with a risk score of 12. It was initially designated a red corporate risk; however, the risk has been reduced. This is due to ongoing improvements in air quality, together with the wide range of action that has been, and continues to be, taken by the City Corporation to further mitigate the risk. The target is a risk score of 6.
43. Although air quality in the City of London is improving, there is still some way to go before it meets health-based limits and guidelines at all locations. The ongoing improvement in air quality will continue over the next few years as a result of the wide range of action being taken by the City Corporation, supported by action taken by the Mayor of London and London Boroughs.
44. The City Corporation is exceeding its current statutory duty to improve air quality and is widely regarded as demonstrating leadership in this area. With the forthcoming potential changes in air quality targets and statutory obligations, in addition to the ongoing research into the health impacts of air pollution and the new inquest into the death of a child who died from acute respiratory failure, the City Corporation needs to remain agile and proactive in its approach. The City Corporation must continue to deliver a high-quality programme that will serve to minimise the risk of air pollution to public health.

Appendices

- Appendix 1 – Risk and Progress Summary for CR21: Air Quality
- Appendix 2 – Air Quality Annual Status Summary Report for 2018

Background Papers –

- Deep Dive Reports to Audit and Risk Management Committee on Air Quality 14 June 2016 and 6 November 2018
- City of London Air Quality Strategy 2019 – 2025
- City of London Annual Status Report 2019
- Emission Reduction (Local Authorities in London) Bill

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