ITEM x

Health Improvement Board

16th November 2023

Air quality in Oxfordshire

Purpose / Recommendation

1. The Health Improvement Board is asked to note:
   - The impact poor air quality has on health
   - How Air Quality is monitored locally
   - Strategic action being taken through a partnership approach to improve air quality in Oxfordshire, including the launch of a new website

   and recommends that its members take opportunities to promote good air quality.

Background

2. Poor air quality is the largest environmental risk to public health in the UK. Long term exposure to air pollution in England is equivalent to between 26,000 and 38,000 deaths per year[1]. In Oxfordshire, it was estimated that air pollution's effect on mortality was equivalent to 320 early deaths at typical ages in 2021[2].

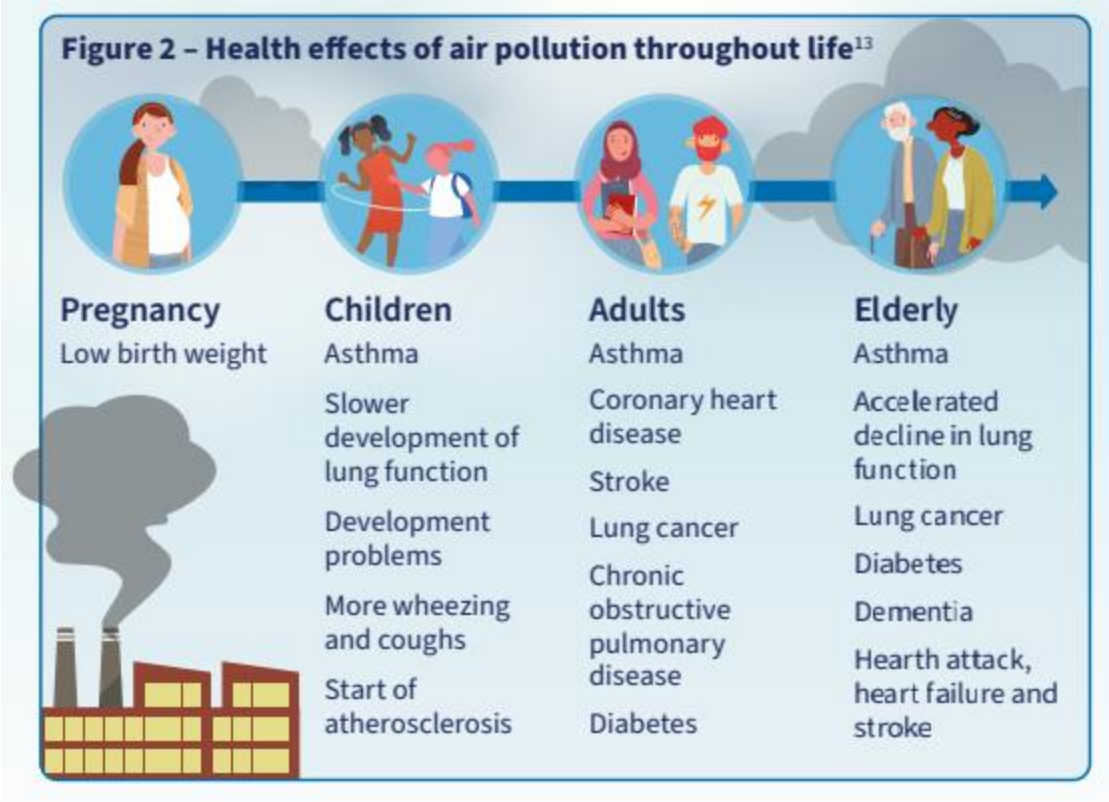
3. Crosscutting work in the County has already implemented many actions that will help to improve air quality, and more are due to be delivered in the coming years. However, air quality improvements are often a by-product of this work rather than being a priority or driver.

Key Issues

Health Impacts of poor air quality

4. Long-term exposure to air pollution can also cause chronic conditions and have negative effects on physical and mental health[3]. Those conditions linked to air pollution include low birth weight, asthma, diabetes, lung cancer, strokes and chronic obstructive pulmonary disease (COPD).

[1] https://www.gov.uk/government/publications/chief-medical-officers-annual-report-2022-air-pollution
[2] https://insight.oxfordshire.gov.uk/cms/system/files/documents/JSNA_Bitesize_AirQuality_Apr2023.pdf
[3] https://www.imperial.ac.uk/news/244355/review-highlights-lifelong-health-impacts-pollution/

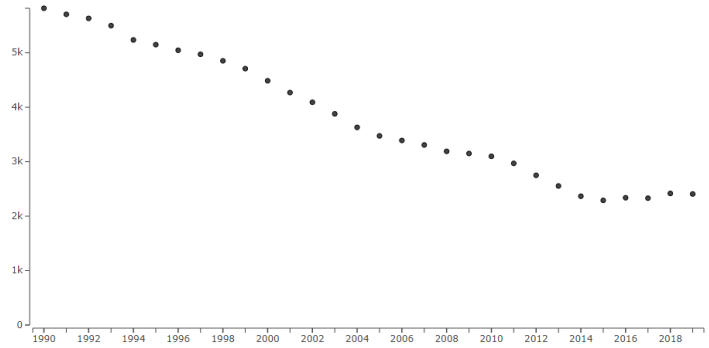


In Oxfordshire these conditions currently affect the population in the following way[4]:

- In 2021/22 there were 125 hospital admissions for asthma for under 19 year olds, 70 for 0-9 year olds, and 60 for 10 to 18 year olds.
- In 2021/22 there were over 46,000 people over 6 years old who have asthma
- In 2020 the recorded prevalence of Dementia for those over 65 was 5321
- Over three years between 2017 and 2019 there were 1210 lung cancer cases
- In 2021/22 there were just under 14,000 people with strokes.
- In 2021/22 there were just under 11,000 people with COPD. There were just under 1000 emergency hospital admissions for COPD for those over 35
- In 2021/22 there were just under 35,000 cases of diabetes of those over 17 years

5. Furthermore, over 2,300 years of healthy life (DALYs) were lost due to air pollution in 2019. These were mainly attributed to cardiovascular diseases and chronic respiratory diseases[5]. The graph below shows the trend in DALYs lost due to air pollution in Oxfordshire since 1990. As demonstrated by the graph, the health impacts of air pollution in Oxfordshire have decreased since 1990 but have stalled since 2014.

[4] https://insight.oxfordshire.gov.uk/cms/system/files/documents/JSNA2023_FINAL.pdf
[5] Oxfordshire Joint Strategic Needs Assessment 2023



Disability Adjusted Life Years lost to air pollution in Oxfordshire[6]

6. More detailed research was conducted in Oxford by King's College London in 2019. The research found that cutting air pollution in Oxford by one fifth would result in:
   - 83 fewer cases of coronary heart disease each year.
   - 28 fewer cases of lung cancer each year.
   - 77 fewer children with low lung function each year.
   - 38 fewer asthmatic children with bronchitic symptoms each year.
   - 31 fewer children with a chest infection (acute bronchitis) each year.
   - 1 less baby born underweight each year.
   - Increase in children's lung capacity by around 2.8%.

7. Similarly, research undertaken by the University of Birmingham and University of Oxford suggests that the reductions in nitrogen dioxide during COVID-19 lockdown could prevent 48 lost life years among those living in Oxford city, with economic benefits up to £2.5M[7].

8. This evidence highlights that there is a need to do more to tackle air pollution across the county, not just in Oxford city. Doing so would deliver significant health and economic benefits. Developing the collaborative approach and building a "bigger picture" narrative around the causes of poor air quality are critical.

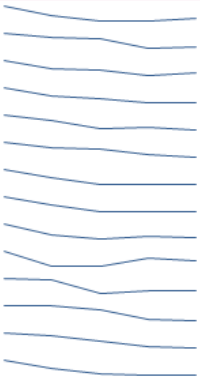
Measuring and monitoring air quality in Oxfordshire

9. Air quality in Oxfordshire is generally good[8], however there are currently 13 Air Quality Management Areas (AQMAs). AQMAs are where government standards have been exceeded in the past three years.

10. The table below provides trend lines for each of the 13 AQMAs, the level of Nitrogen Dioxide in the year the area was originally declared and the past three years of Nitrogen Dioxide levels.

11. Oxford City Councils AQMA is different to the other 12 as it covers the entire city of Oxford, whereas the other AQMAs are much smaller areas. Details of the AQMAs can be found in the Annual Status Review of each District and City council on the Oxonair website[9]

[6] IHME, Global Burden of Disease tool
[7] https://www.sciencedirect.com/science/article/pii/S0269749121021667?via%3Dihub
[8] https://www.oxonair.uk/
[9] https://www.oxonair.uk/policies-and-reports

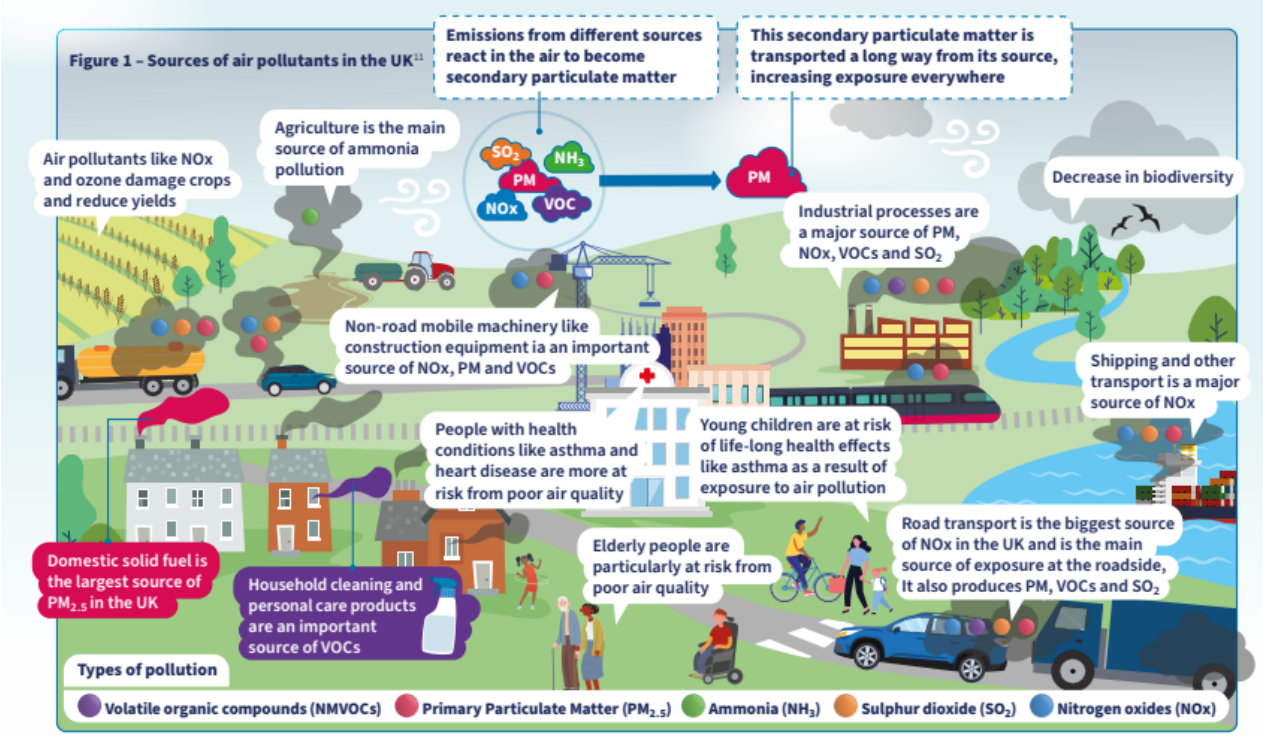
Trend	AQMA Name	Level of Exceedance: Declaration µg/m3	Level of Exceedance: Current Year 2019 µg/m3	Level of Exceedance: Current Year 2020 µg/m3	Level of Exceedance: Current Year 2021 µg/m3	Level of Exceedance: Current Year 2022 µg/m3
	City of Oxford	78	53	36	39	43
	AQMA No. 1 Cherwell	86.4	74.9	72.1	52.2	55
	AQMA No. 2 Cherwell	48.4	38.7	36.4	30.4	33.7
	AQMA No. 3 Cherwell	47.5	36.5	32.5	26.6	28.1
	AQMA No. 4 Cherwell	46.9	41.9	34.5	34.9	32.6
	Henley	45.1	39.6	38.7	34	30.5
	Wallingford	48.3	37.5	28.4	29.2	28.5
	Watlington	51.3	38.5	28.1	28.5	28.9
	Abingdon	63.2	36.3	27.6	35.3	31.1
	Botley	58.8	50.3	50.9	55.1	53.7
	Marcham	53.9	50.9	24.3	31.3	30.4
	Witney	48	48.2	44.8	36.8	35.8
	Chipping Norton	50	47.3	41.4	35.5	34.3
	Total mean	55.83	45.66	38.13	36.06	35.82

12. World Health Organisation standards if applied to Oxfordshire would mean most areas would fail for all pollutants of interest[10].

	UK Government Standard	WHO Standard
Nitrogen Dioxide	40µg/m^3	10µg/m^3
PM10	10µg/m^3	15µg/m^3
PM2.5	10µg/m^3	5µg/m^3

13. Air pollution comes mostly from the burning of fossil fuels, for transportation and heating, but also relevant for Oxfordshire, agricultural practices. Air pollution is made up of both very local, regional and international sources, from traffic congestion and bonfires to industry to forest fires and desert storms on the other side of the world.

[10] https://friendsoftheearth.uk/climate/air-pollution



14. The two key pollutants are nitrogen dioxide and tiny particles (known as PM2.5). Nitrogen dioxide levels are generally improving due to improvements in engines and are becoming less of a threat to health. However, there are no safe levels of air pollution[11]. The challenge with setting a limit or a level is the perception that it is "safe" once that level has been achieved. The alternative is a measure called an "exposure reduction target". Work is ongoing in how Oxfordshire can calculate this type of measurement and target.

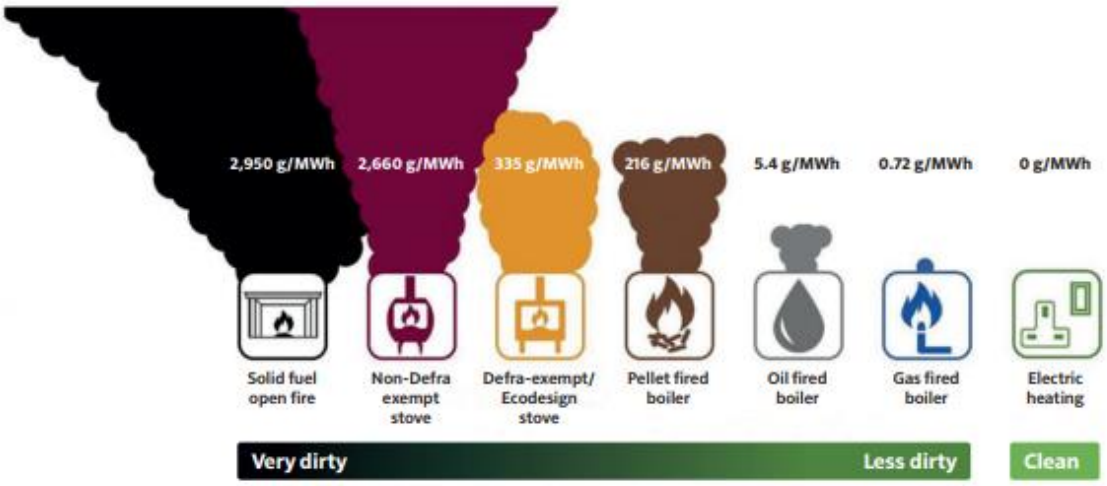
Climate and Air Quality

15. There are clear co-benefits in taking action to address climate change as many of the interventions will also address air quality. This includes action being led by local government and NHS initiatives as part of delivery of their Green Plans. Care must also be taken as there are also some climate interventions which may worsen air pollution such as the use of biomass for heating[12]. Putting action to reduce air pollution on a similar footing to climate action may improve the case that can be made for the changes to how we travel, design our neighbourhoods and heat our homes.

Indoor air pollution

16. There are also risks to health from indoor air pollution from sources such as mould[13], heating and cooking, especially in relation to wood burning stoves[14].

[11] https://theconversation.com/air-pollution-science-shows-theres-no-safe-limit-heres-how-laws-must-change-167223
[12] https://uk-air.defra.gov.uk/assets/documents/reports/cat11/1708081027_170807_AQEG_Biomass_report.pdf
[13] https://www.gov.uk/government/publications/damp-and-mould-understanding-and-addressing-the-health-risks-for-rented-housing-providers/understanding-and-addressing-the-health-risks-of-damp-and-mould-in-the-home--2
[14] https://www.cleanairhub.org.uk/clean-air-information/the-basic-information/wood-burners



17. Mould in rented properties is managed by the statutory housing and environmental health teams to enforce housing standards. Mould caused by cold homes can be prevented by improving energy efficiency and the Better Housing Better Health service can signpost or support residents to the variety of local grants now available. With respect to raising awareness of wood burning stoves Oxford City Council developed the campaign "Do you Fuel Good?" with Friends of the Earth. Oxfordshire Trading Standards are also taking action to educate local suppliers on the sale of Ready to Burn wood.

Action in Oxfordshire to reduce air pollution

18. City and District Councils have for over 20 years delivered their statutory duties to monitor and report on air quality through the Defra Annual Status Reviews. This is includes the co-ordination of the development and publication of Action Plans with statutory and other partners. The Action Plans list the initiatives and interventions which partners will be taking over a five year period.

19. More recently the Environment Act 2021 has highlighted the role anchor institutions, such as the County Council, has in contributing to those action plans[15]. Recognising, the need to do more and to work better with air quality partners, Public Health and Environment and Place directorates jointly developed the County Council Air Quality Strategy[16]. The strategy was approved by Cabinet on 23rd May 2023 and launched on Clean Air Day on 15th June 2023.

[15] https://www.local.gov.uk/publications/get-act-environment-act-2021
[16] https://news.oxfordshire.gov.uk/efforts-to-reduce-air-pollution-launched-on-clean-air-day/

The strategy sets out a vision, objectives and strategic approach to guide future work on air quality. The three pillars of the Strategy are to:

- Reduce emissions of indoor and outdoor air pollution
- Extend distance from pollution sources
- Protect those most at risk

The strategy is supported by a Route Map[17] for 2023-2026 which identifies 45 actions related to county council work on air quality. These include work that is already underway, existing work that can be expanded, and new work.

Strategic alignment

20. Work to improve air quality meets the objectives of the following local strategies:

- Oxfordshire Joint Health and Wellbeing Strategy[18] – identified the priority to address the wider determinants of health.
- BOB ICS Strategy[19] – includes the need to take action to address the factors that influence our health and wellbeing.

[17] https://news.oxfordshire.gov.uk/download/1f6c57d9-d16e-402a-9fb5-5b3fbfed6696/oxfordshirecountycouncilcleanairroutemap2023.pdf
[18] https://www.oxfordshire.gov.uk/sites/default/files/file/constitution/oxfordshirejointhwbstrategy.pdf
[19] https://mycouncil.oxfordshire.gov.uk/documents/s60442/JHO_MAY1022R07%20BOB%20Engagement%20Strategy.pdf

- District and City Council Air Quality Action Plans[20] – update on the progress of the measures that district and city councils and their air quality partners have formally committed to deliver.
- OCC Local Transport and Connectivity Plan[21] – includes the outcomes to improve health and wellbeing and to reduce health inequalities.
- OCC Climate Action Framework – many actions have both climate action and air quality benefits.

21. The strategy also supports objectives of local partner organisations and collaboration is ongoing. One example is the Community Action Group Network organising a webinar to inspire community groups to address air quality, including speakers from Mums for Lungs and Thame Green Living Group[22]. The City Council has worked with Friends of the Earth on a wood burning campaign, "Do you fuel good?"[23]. Citizen science projects are also being supported for example through the SAMHE[24] initiative which works with schools to explore indoor air pollution.

Oxfordshire air quality website

22. Besides ongoing work to reduce the number of journeys by private car or to switch to more sustainable modes of transport, and improvements to the energy efficiency of homes by better insulating them and using more energy efficient heating systems, a more recent development has been the new website on air quality in Oxfordshire.

23. In October 2020, Oxford City Council, together with all the District Councils in Oxfordshire and the County Council have been awarded £162,500 from DEFRA's Air Quality Grant after a successful bid for the development of a brand-new air quality website for Oxfordshire, in replacement of the old website.

24. The new website is seen as an important tool to inform, communicate and raise awareness of air pollution to visitors and residents across Oxfordshire. It will support those who suffer from regular exposure to air pollutant exceedances and vulnerable groups, allowing them to make conscious choices and adapt their day-to-day behaviour. One of the main objectives of the project was also to allow complete integration of all relevant air quality information from all district councils in Oxfordshire under one single platform.

25. The website (oxonair.uk) was launched in September 2023. It was designed taking into account significant input from members of the public with regards to what they considered to be the most valuable air quality information to be displayed, and includes specific features and interactive tools, such as: maps, forecasting, an air pollution alert system, air pollution footprint calculator (just to name a few). This regularly updated information is meant to promote constant interaction between visitors and the platform and to keep residents and visitors informed of air quality in their local areas.

[20] https://www.oxonair.uk/policies-and-reports
[21] https://www.oxfordshire.gov.uk/residents/roads-and-transport/connecting-oxfordshire/ltcp#:~:text=Our%20Local%20Transport%20and%20Connectivity,which%20was%20adopted%20in%202015.
[22] https://www.tickettailor.com/events/communityactiongroupsoxfordshire/1021175
[23] https://www.oxonair.uk/local-initiatives
[24] https://samhe.org.uk/

26. Initial google analytics data show a total of 3000 visits to the website, just during the week of the launch. This compares with a total amount of 8000 visitors per year in 2021 from the old website, which already gives an indication of the success and immediate impact of this project.

27. Other activities can be found on the "local initiatives https://www.oxonair.uk/local-initiatives" page of the website and new additions are welcomed.

Budgetary implications

28. Funding for the statutory work is provided by the District and City Councils. Much of the County work is funded through transport programmes but in addition Public Health has committed £180,000 of reserves across the next three years to progress the strategy and route map.

    Additional funding can be sourced from the government for example the Defra air quality grant or DNEZ for energy efficiency measures or DfT for transport schemes.

29. The inclusion of air quality improvements in business cases may improve the return on investment, in addition to the other benefits a particular scheme or project may be primarily commissioned for.

Equalities implications

30. Good air quality is good for everyone's health. The very young, old and those with certain health conditions; those in areas where lower income is more prevalent[25] are affected more by air pollution than the general population.

    Some measures which are introduced to improve air quality may have short term negative impacts, if those groups needs are not properly considered.

Communications

- The action plans are consulted on publicly by the District and City councils.
- The Strategy as an internal document, has been made publicly available.
- The website included a phase of consultation and is open to ongoing feedback and development. It has been publicised by targeted advertising on Facebook to those areas where COPD/Asthma are high and posters and bookmarks are available in libraries and on request.

Key Dates

- Annual reports on air quality are available for comment in the Spring of each year.
- Clean air day is on the 15th June, a new winter version is planned for January 2024 on the theme of wood burners and International Clean air day the 7th September.

[25] https://uk-air.defra.gov.uk/assets/documents/reports/cat09/0701110944_AQinequalitiesFNL_AEAT_0506.pdf

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