Agenda Item No. 7

Meeting of the Climate Change and Environment Scrutiny Committee – 28th September 2022

Report of the Interim Director of Public Health and Wellbeing

Update on Air Quality Monitoring in the Borough

Purpose

1. This report outlines the current measures in place to monitor air quality in Dudley, and proposals to improve air quality in the future.

Recommendations

2. It is recommended: -

- That the Committee notes the contents of this report.
- That the Committee supports the proposals for further initiatives.
- That the Committee recognises the importance of air quality data and supports development of the use of that data in strategic planning of development of the borough.

Background

3. The UK Government has a responsibility to protect people's health against the harmful effects of air pollution. Air pollution can trigger heart attacks, stroke and exacerbate respiratory illness as well as causing cancer and stunting lung development in children.

4. Air pollutants can also damage flora, fauna, change natural landscapes and the urban environment as well as intensifying the effects of climate change.

5. The main pollutants of concern which affect air quality in Dudley are Nitrogen Dioxide and Particulate Matter (PM_{10} and $PM_{2.5}$)

6. Nitrogen dioxide (NO_2) is a gas that is released into the atmosphere when fuels are burned, i.e., from:
    - petrol or diesel in a car engine,
    - natural gas in a domestic central heating boiler or cooker
    - power stations.

7. The National Object for NO_2 is 40ug/m^3 annual average. Of all the sites where Dudley monitors NO_2 there are two areas where the National Objective is exceeded: Wordsley and Netherton.

8. Particulate Matter PM_{10} & $PM_{2.5}$ are particles with an aerodynamic diameter smaller than 10 micrometres (um) & 2.5um. Commonly referred to as coarse dust and fine dust. Particulates are generated by abrasion and friction from motor vehicles, as well as being by-products of combustion and burning.

9. The National Objective for PM_{10} is 40ug/m^3 annual average and all the sites where Dudley monitors PM_{10} show compliance.

10. The National Objective for $PM_{2.5}$ is currently 25ug/m^3 annual average and all the sites where Dudley monitors $PM_{2.5}$ show compliance.

11. In light of new evidence demonstrating the harmful nature of $PM_{2.5}$ and its ability to travel deep inside the lung and into the blood stream, the Government are considering a reduction in the National Objective for $PM_{2.5}$ down to 10ug/m^3.

12. Dudley operates 58 diffusion tubes measuring NO_2, 3 fixed air quality stations measuring NO_2, PM_{10} and $PM_{2.5}$ along with 2 weather stations and 2 mobile Zephyr units.

13. The diffusion tubes are located across 50 different sites (4 locations where tubes are co-located in triplicate for purposes of validation), they are small, inexpensive and reliable, however, they require changing by hand on a monthly basis and subsequent laboratory analysis. Whilst the results are dependable, they are not highly accurate and require bias adjusting.

14. The bias adjustments calculations for the diffusion tubes are done annually and are based on the results from the highly accurate and significantly expensive air quality monitoring station equipment.

15. The bias adjusted annual diffusion tube measurements can be seen at each location of the Gizmo mapping tool available to the public on our website: https://mapping.dudley.gov.uk/custom/no2stations.asp

16. The solid triangles represent current tubes where results are available up to 2021, whereas the outline triangles represent historical tubes – locations we no longer monitor because the area is compliant with National Objectives and there are other tubes located nearby.

17. Dudley Council bases its Key Performance Indicator (KPI) for air quality monitoring on the number of diffusion tubes we successfully get a measurement from. Sometimes tubes go missing (due to theft or building work) on occasions spiders and other insect inhabit the tubes nullifying the measurement.

18. Data from the 3 air quality monitoring stations is available on request.

19. In terms of climate change Oxides of Nitrogen (including NO_2) are 300 times more potent than carbon dioxide (CO_2) and also deplete the ozone layer. Particulate matter contains black carbon (amongst any other things) which also has a warming effect on the atmosphere so it is clear that reducing NO_2 and Particulate Matter will have a significant impact on global warming and climate change.

20. The next project Environmental Health are looking at in terms of improving Air Quality is a schools' campaign – The aim is to go into schools and speak to about all the things each of us can do to reduce air pollution and improve our air quality. This will culminate in the design of a poster at each school encouraging parents to walk to school or at least turn their engines off when stationary for more the 1 minute, and when safe to do so. The winner will have his/her poster blown up for the school railings or similar- and his/her picture in the local press/website etc. The generic anti idling element of the project is already underway with 'turn your engines off' signs soon to be placed on a lamppost near you – requests welcome.

21. Further initiatives and developments to the service include:

- Develop links between monitoring and implementation of improvement initiatives
- Input into health inequalities agenda
- Further education and awareness

- Input into planning policies and traffic control

Finance

22. Financial implications from undertaking this work are normally met from within existing budgets. However, the improved Air Quality Monitoring Stations were funded via Department for Environment, Food and Rural Affairs (DEFRA) grant funding of £53,000.

Law

23. The DEFRA carries out an annual national assessment of air quality, using monitoring and modelling to determine compliance with relevant limit values. The annual completion of local authorities Annual Status Report (ASR) for Air Quality feeds into this annual national assessment.

24. The local air quality management (LAQM) regime requires every local authority to regularly review and assess air quality in their area (via ASR or other method).

Risk Management

25. If national objectives are not met, or at risk of not being met, the local authority concerned must declare an air quality management area (AQMA) and prepare an air quality action plan (AQAP). This identifies measures that will be introduced in pursuit of the objectives and can have implications for planning. The whole of Dudley was declared an AQMA in 2007 and has been working towards having this status lifted ever since.

26. Planning guidance has been introduced to support air quality improvements and several significant road layout changes have been made along with many other changes detailed in the AQAP – some changes supported by DEFRA grant funding.

27. The UK Government has been taken to court on 3 separate occasions for failing to protect people's health against the harmful effects of air pollution. This has no direct impact on Local Authorities in terms of fines.

Equality Impact

28. The proposals in this report do not impact on protected groups or conflict with the Council's commitment to equality.

Human Resources/Organisational Development

29. There are no implications for Human Resources/Organisational Development.

Commercial/Procurement

30. There is no impact on commercial and procurement.

Council Priorities and Projects

31. The work undertaken by the Food Team is an integral part of the Council's vision for the borough as follows:
    - Dudley Vision 2030 - Connected green spaces linking parks, nature reserves and waterways to high quality local spaces, accessible to all and enjoyed by all.
    - Dudley Health & Wellbeing Strategy - Longer, safer, healthier lives for all.

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