

## AIR QUALITY

REPORT OF: Tom Clark, Head of Regulatory Services.  
Contact Officer: Yvonne Leddy Business Unit Leader Environmental Health and Building Control  
Email: [yvonneleddy@midsussex.gov.uk](mailto:yvonneleddy@midsussex.gov.uk) Tel: 01444 477300  
Wards Affected: ALL  
Key Decision: No  
Report to: Scrutiny Committee for Community, Housing and Planning  
21<sup>st</sup> November 2018

---

### Purpose of Report

1. To inform Members about our Annual Air Quality Progress report and recognise the Air Quality programme across the District.

### Recommendations

**The Committee is recommended to endorse the approach of the Council on Air Quality.**

---

### Background

2. Statutory responsibility for monitoring and assessing air quality sits with the Council under Part IV of the Environment Act 1995. Areas where pollutants exceed, or are likely to exceed, Government health based air quality objectives are declared as Air Quality Management Areas (AQMAs) and we are required to produce an air quality Action plan (AQAP) to demonstrate how we will improve air quality in the AQMA. Councils are also required to produce an Annual Status Report (ASR) for the Department of Environment, Food and Rural Affairs (Defra) for their approval.
3. Where air quality problems resulting in AQMAs are related to traffic, which is the case for all AQMAs in West Sussex, West Sussex County Council as the highway authority, has a statutory responsibility to work with the relevant District or Borough Council to develop and deliver the action plans for these AQMAs.
4. The Annual Status Report (ASR) report provides an overview of air quality in Mid Sussex. It contains details of monitored pollutants and incorporates information on changes or potential changes to the environment due to new processes or developments. This allows us to identify potential impacts on air quality which we need to consider and mitigate. The report also includes the actions we are taking to address air pollution in the district.
5. Mid Sussex District Council's Annual Status Report for 2017 was approved by Defra on the 19th October 2018 and will be available to view on the MSDC website <https://www.midsussex.gov.uk/environment/air-quality/>.
6. As air pollutants do not recognise boundaries we work in partnership with our colleagues in the other districts, boroughs and Counties to deliver air quality. The group is Sussex wide and is known as the Sussex Air Quality Partnership and includes representatives from Public Health.

7. In Mid Sussex District we have good air quality but we do have one Air Quality Management Area (AQMA). In 2012 the Council declared an Air Quality Management Area at the Stonepound Crossroads, Hassocks, due to levels of Nitrogen Dioxide NO<sub>2</sub> exceeding the legal limit (Objective 40ug/m<sup>3</sup>). The Council has as required, produced an Action Plan listing a number of measures we think necessary to improve and reduce the pollutant levels. Early indication is that the Action Plan is working because air quality is improving. A Members Air Quality Steering Group supported by the relevant officers from the district and county which has been established meets annually to audit and direct the Action Plan.

#### Brief background to Air Quality Pollutants

8. There are a variety of different pollutants, but the main ones of concern are nitrogen oxides (NO<sub>x</sub>), particularly nitrogen dioxide (NO<sub>2</sub>) and particulate matter (PM). Particulate matter is often referred to by size, so you may see references to PM<sub>10</sub>, PM<sub>2.5</sub> or PM<sub>0.1</sub>.<sup>6</sup> Examples of particulate matter include dust, dirt, soot, smoke and drops of liquid.
9. National and European objectives define levels based on the known effect these pollutants have on human health. Objectives are set in law and, where an AQMA has been designated, local authorities have a statutory obligation to work towards meeting them.
10. However, no threshold below which particulate matter would not pose a risk has been identified, so the approach for this is generally accepted to be a reduction in background concentrations to ensure the best health outcomes for the widest geographic range of people.
11. There is consistent evidence demonstrating clear adverse effects of exposure to air pollutants on health outcomes across all population groups. Poor air quality is linked with an increased risk of developing chronic conditions (e.g. chronic obstructive pulmonary disease), poor birth outcomes, lung cancer, respiratory disease and others.
12. The Public Health Outcomes Framework (PHOF) includes an indicator which quantifies the contribution of exposure to particulate matter on mortality. In 2015 the fraction of mortality attributable to anthropogenic PM<sub>2.5</sub> was 4.2% for West Sussex. This compares to an estimated fraction of 4.7% for England, and ranges from 4.1% for Mid Sussex, Arun, Chichester, Horsham District Councils, and 4.8% for Worthing Borough Council.
13. The figures for mortality due to air pollution are estimates of mortality attributable to a risk factor. Outdoor air pollution is a major public Health issue costing the UK economy £20bn a year and contributing to over 25,000 deaths a year.<sup>44</sup> It is important to understand that long-term exposure to air pollution is not thought to be the sole cause of deaths. Rather, it is considered to be a contributory factor.
14. The health problems resulting from exposure to air pollution have a high cost to society and business, our health services and people who suffer from illness and premature death. These vulnerabilities are heightened among those living in the most deprived communities.

15. Pollutants:

- Nitrogen dioxide (NO<sub>2</sub>) -Road transport is responsible for some 80% of NO<sub>2</sub> concentrations at the roadside, with diesel vehicles of greatest concern at a local level. This is due in part to improvements in real world emissions testing showing that laboratory test-based emission standards have not delivered expected reductions under real world driving conditions.
- Particulate matter of the different sizes of particulate matter reported on, PM<sub>2.5</sub> has the strongest epidemiological link to health outcomes as the particles can be inhaled deep into the lungs. The very smallest particles, ultra-fine PM<sub>0.1</sub> once inhaled are able to pass directly into the bloodstream. Unlike NO<sub>2</sub> where concentrations are high immediately adjacent to the source, particulate matter has a much wider geographical extent and guidance suggests we can use monitoring from up to 50 miles away as a reference. Due to the large distances that PM can travel, it is harder to control at a local level.
- One of the highest sources of particulate matter is domestic coal and wood burning. There has been an increase in recent years in the number of wood burning stoves which the Government are looking at restricting. The other major mobile source of particulate matter is road transport, which produces particles when fuels are burned or lubricants are used up in the engine, when tyres and brakes wear and from road dust. PM<sub>2.5</sub> is also produced from reactions between other gaseous pollutants forming secondary particles.
- Ozone-Low level ozone is not emitted directly by car engines or by industrial operations, but is formed on warm summer days by the reaction of sunlight on air containing a mixture of airborne pollutants, including nitrogen oxides. Traffic is the main source of these pollutants. Ozone travels long distances and can reach high concentrations a long way from the original sources of pollution. It is particularly important for our rural communities as the conditions that break ozone down in urban areas are less prevalent in rural areas. Ozone also has impacts on incidence of respiratory symptoms.

Annual Status Report

16. The Council's Annual Status Report for 2017 was approved by Defra in October. The next report will focus on air quality in the district in 2018 which will be submitted in June 2019. The report format is prescribed by Defra and Councils must not deviate from this.
17. The 2017 report states that air quality monitoring and modelling carried out by the Council indicated that despite good air quality within most of the District, the air quality objectives for Nitrogen Dioxide (NO<sub>2</sub>) were not being met in the Stonepound Crossroads area of Hassocks. Therefore, in March 2012 an Air Quality Management Area (AQMA) was declared at Stonepound Crossroads Hassocks and remains in place.
18. It confirms that the main source of air pollution in the district is road traffic emissions mostly from major roads, notably the increased use by HGV traffic on the A2300 link from the A23 and the A273 north and south of Hassocks.

19. The Council's Monitoring results in 2017 show a decrease in the Nitrogen Dioxide (NO<sub>2</sub>) levels across the district compared to those recorded in 2016. The long-term trend, despite an increase in 2016, appears to be downwards. This we attribute to the improved technology in transportation e.g. vehicles with lower emissions and cleaner fuels. Appendix 1.
20. In 2017 we undertook non automatic (passive) monitoring of NO<sub>2</sub> at 25 sites. The monitoring sites are reviewed annually and in September 2018 at the request of West Sussex County Council we added an additional site at the primary school in Balcombe.
21. The Council has been monitoring air quality at sites across the District since 1996. Sites will be monitored over a number of years in order to obtain relevant results which can be relied upon and identify trends. The sites were chosen where we have information on road traffic use and where we have relevant exposure receptors e.g. homes, schools, hospitals etc.

### **Air Quality Management Area**

22. Within the AQMA at Stonepound Crossroads in Hassocks the main pollutant (NO<sub>2</sub>) is from road traffic emissions, in particular, the increased use by HGV traffic of the A2300 link from the A23, and the A273 north and south of Hassocks. Exceedances are due to the topography and volume of road traffic at the junction. Since the AQMA was declared in 2012 there has been an overall reduction in measured NO<sub>2</sub>.
23. As part of the AQMA we have drawn up an Air Quality Action Plan (AQAP) which focuses on a range of measures designed to limit the exceedance of the NO<sub>2</sub> air quality objective of 40ug/m<sup>3</sup>.
24. Table 1 provides an overview of the actions endorsed by the Steering group to date and the work yet to be completed:

Table 1

|   |  |           |
|---|--|-----------|
| 1 | Traffic light sequencing operating at optimum level  | Completed |
| 2 | Cut Engine, Cut Pollution" signs erected   | Completed |
| 3 | Linking residents and schools to Air Alert and Cold alert service available- which informs residents if there is likely to be poor air quality | Completed |
| 4 | District Plan now adopted including policies on Transport and Pollution  | Completed |
| 5 | Signage to encourage use of the A2300 as alternative route   | Completed |
| 6 | Working with Planning to ensure maximum mitigation measures implemented for all new developments in the vicinity of the AQMA                   | Ongoing   |
| 7 | Car sharing is promoted through the Green Travel Pages on the MSDC intranet.   | Ongoing   |

|    |   |                             |
|----|---|-----------------------------|
| 8  | Working through the Mid Sussex Wellbeing Hub on initiatives aimed at respiratory illnesses  | Ongoing                     |
| 9  | Mid Sussex District Plan includes reference to supporting additional cycle ways and bridleways, including routes to Clayton and Hurstpierpoint                  | Completed                   |
| 10 | Section 106 funds were allocated from the Sustainable Transport Fund to successfully upgrade slow electric vehicle chargers to fast chargers in MSDC car parks. | Completed                   |
| 11 | Commencement of improvements to new cycling and walking routes from Hassocks Station to the South Downs Way via Lodge Lane.                                     | Due to start next year      |
| 12 | The County Council continues to work with Sustrans to consider a prioritisation approach to the delivery of cycle route infrastructure across the county        | Ongoing                     |
| 13 | New strategy for EV charging to be identified in liaison with Planning Officers, Wellbeing and other council officers.  | Ongoing                     |
| 14 | Widening and improvements to the A2300 road.  | Due to be delivered by 2021 |

### **Mid Sussex's priorities to promote good air quality in the coming year**

25. The adoption of the District Plan has enabled the Council to adopt policies on transportation and pollution. This will enable us to effectively use the planning regime to ensure appropriate mitigation measures are used for all new development. This can be a challenge as there is a need to find the right balance between the need for new housing and the impact that the related traffic increase will have on existing pollution levels, particularly for forthcoming developments in the vicinity of the AQMA.
26. Promoting sustainable transport across all sectors of businesses, schools, home owners etc, with improved cycle routes and infrastructure to encourage people out of their cars. Sussex Air Quality Partnership has made a successful bid for Defra funding for an anti-idling project to be run throughout Sussex, targeting schools and businesses close to pollution hotspots, including the two schools in Hassocks.
27. Working with our colleagues across the County to deliver a joined up approach to improving Air quality. In October 2018 West Sussex County Council and the District and Boroughs came together to form a Member led Inter-Authority Air Quality Group with an aim to develop and agree an Annual Action Plan and monitor progress and impacts of air quality actions across the County. The main focus will be transportation and wellbeing.

## **Policy Context**

28. Since 1995 local authorities are required to regularly review and assess air quality in their areas, and to determine whether the air quality objectives set by the Government are likely to be achieved. Where exceedances are considered likely the local authority must declare an Air Quality Management Area (AQMA) and prepare an Air Quality Action Plan (AQAP), setting out the measures it intends to put in place in pursuit of the objectives.

## **Financial Implications**

29. None identified

## **Risk Implications**

30. We are legally required to produce an Annual Status Report on the air quality in the district. Failure to do so would see a formal challenge from Defra and/or our residents.

## **Equality and Customer Service implications**

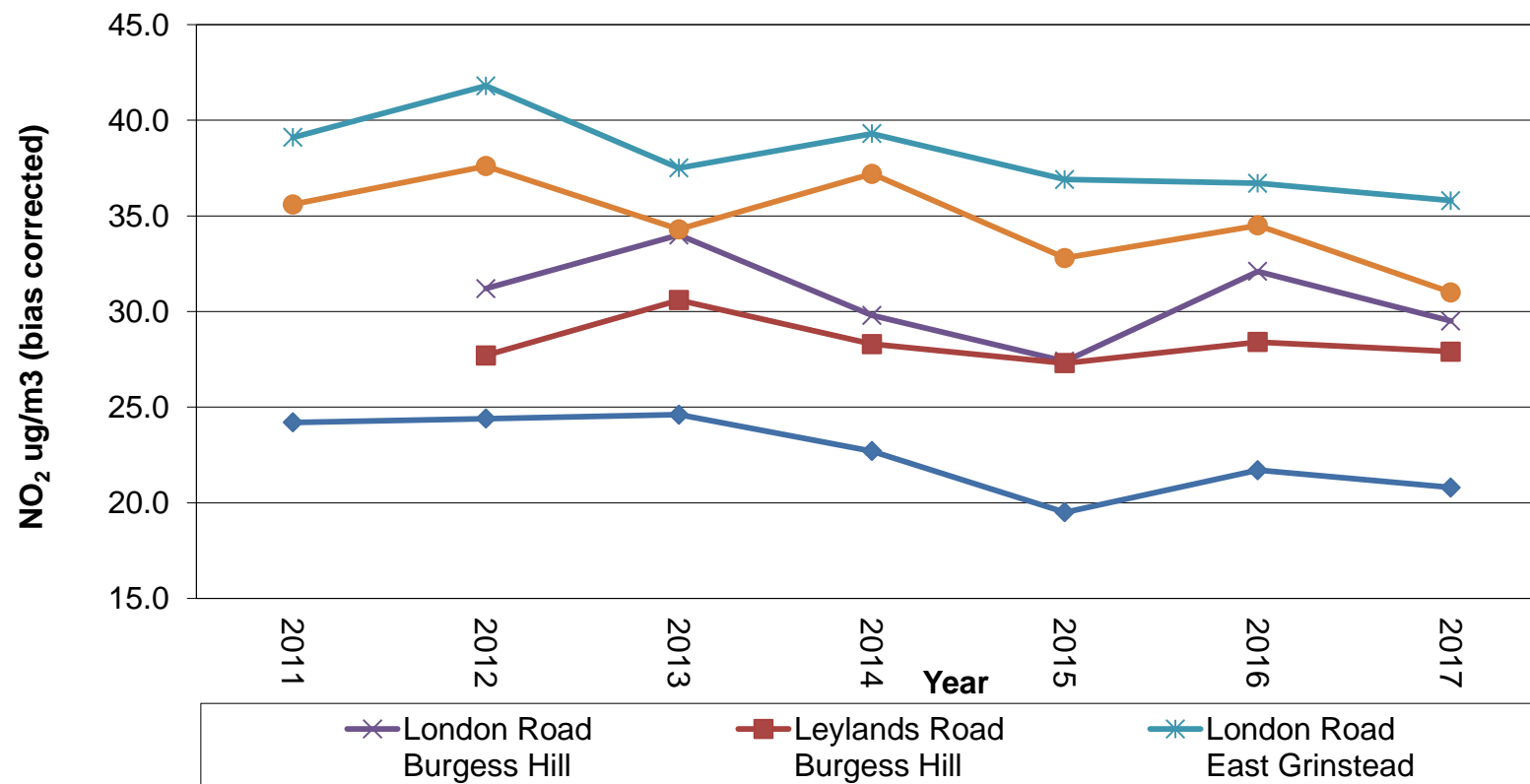
30. None identified as air quality affects all our residents and our monitoring reflects the entire district.

## **Background Papers**

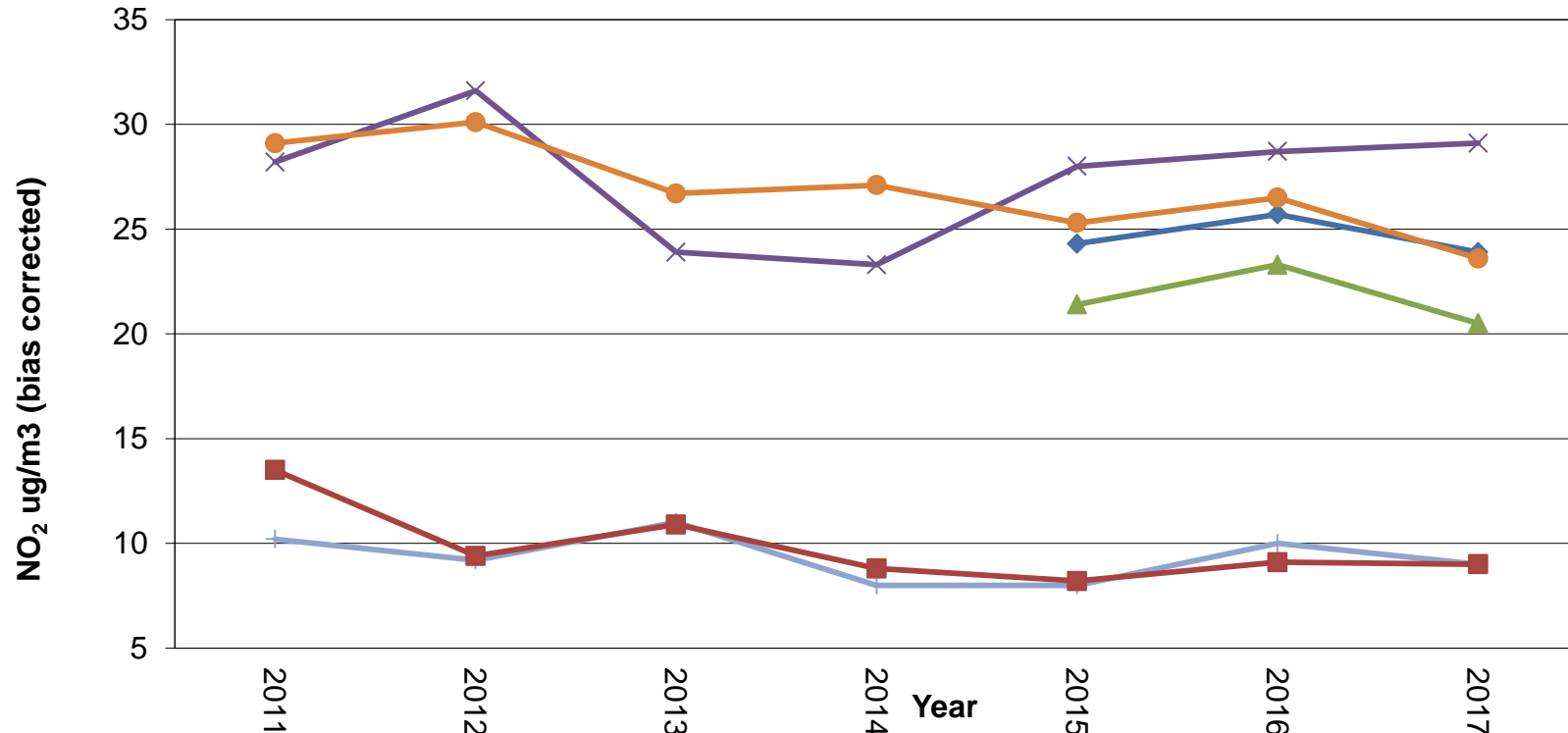
Appendix 1 - Nitrogen Dioxide levels in the urban and rural areas

Appendix 2 - Map of Monitoring Locations across Mid Sussex District

Nitrogen Dioxide Monitoring Trends at 5 Urban Centres 2011 - 2017



**Nitrogen Dioxide Monitoring Trends at 3 Villages 1 Hamlet and 2 Rural Background Sites 2011 - 2017**



|                                 |                                    |  |
|---------------------------------|------------------------------------|--|
| ◆ High Street<br>Hurstpierpoint | ▲ London Road<br>Hickstead         | ✕ Smugglers End Handcross              |
| ● Crabbett Park (Hamlet)        | + Warninglid<br>(rural background) | ■ Hurstpierpoint<br>(rural background) |



Appendix 2  
Map of Monitoring Locations across Mid Sussex District

