

LOCAL AIR QUALITY AND ITS LINKS TO ROAD TRAFFIC AND THE POTENTIAL HEALTH IMPLICATIONS

Sevenoaks Joint Transportation Board - 13 September 2016

Report of Chief Officer Environmental & Operational Services

Status: For Information

Key Decision: No

Executive Summary:

Poor air quality can adversely affect health and reduce life expectancy.

Through a system of Local Air Quality Management the Council has a statutory duty to assess air quality in the area and as a result has declared nine Air Quality Management Areas for exceedance of Nitrogen Dioxide and Particulate Matter objective levels.

Local Government is seen as playing a major role in improving local air quality and both the District and County Councils are expected to work together to address air pollution particularly where related to traffic.

The Council seeks to minimise the potential effects of poor air quality through a variety of ways and specific initiatives.

This report supports the Key Aims of Green and Healthy Environment

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Recommendation to Joint Transportation Board: To note the report.

Reason for recommendation: Members are being updated on the current situation regarding the local air quality and its management in the Sevenoaks District.

Legislative background

1. The main pollutants of concern in the UK are nitrogen dioxide (NO₂) and fine particulate matter, known as PM₁₀ or PM_{2.5}. The majority of these pollutant emissions are typically associated with combustion emissions from vehicles

and industry. Within Sevenoaks District, elevated pollution levels are attributable to vehicle emissions.

2. The European Union Ambient Air Quality Directive sets out maximum permissible levels (known as limit values) for roadside concentrations of pollutants thought to be harmful to human health and the environment. The annual mean limit values for both NO² and PM₁₀ are 40µg/m³.
3. The UK Government is responsible for ensuring that it complies with the legally binding provisions of the EU Air Quality Directives. The UK and other member state governments are currently negotiating with the EC regarding the breaching of NO² and PM₁₀ Limit Values.
4. The UK Air Quality Strategy establishes both a range of National Air Quality Standards and the necessary objectives to deliver it. The standards are either effectively identical to the EU limit values or more stringent. The Department for Environment Food and Rural Affairs (DEFRA) is responsible for ensuring compliance.
5. Part IV of the Environment Act (1995) and the UK Air Quality Strategy provide the policy context for Local Air Quality Management (LAQM) and assessment in the UK.
6. Through the LAQM regime, local authorities are statutorily required to assess annually, the air quality in their area and designate Air Quality Management Areas (AQMAs) if the air quality does not meet the National Air Quality Standards. Where an AQMA is designated, local authorities are required to produce an Air Quality Action Plan describing the pollution reduction measures they will put in place.
7. Sevenoaks District Council has previously declared nine AQMAs and the current Air Quality Action Plan 2009 is to be reviewed. (See Appendix A - Location of nine Air Quality Management Areas across Sevenoaks District).
8. The AQMAs declared across Sevenoaks District have principally been as a result of local hotspots of traffic related poor air quality. They invariably have occurred on narrow roads which are also key routes and/or roads bordered by tall buildings creating a canyon effect. Other AQMAs have been influenced by busy junctions subject to queuing traffic.
9. The responsibilities of local authorities with respect to meeting Air Quality Objectives are not the same as the responsibilities of the UK Government. Local Authorities whilst having statutory duties for LAQM are only obliged to ensure that Air Quality Objectives are worked towards.
10. Following a major consultation and review of the LAQM regime during 2014/15, DEFRA acknowledged that local authorities have a central role in achieving improvements in air quality. It was recognised that their local knowledge and interaction with the communities they serve mean they are better placed to know the issues on the ground and the solutions that may be necessary or appropriate to the locality.

Technical and policy guidance issued by Defra in 2016, reinforced the role of County Councils with regards to air quality. It is expected that they will actively engage with the District Council at all stages of air quality review, assessment and action planning.

11. Subsequent changes to the LAQM regime now require local authorities to submit an Annual Status Report (ASR) each year.
12. The production of an ASR replaces the reporting procedure under the former system. It maintains the key elements of the previous approach whereby, if an authority identifies a risk that an air quality objective is or will be exceeded at a relevant location, then the local authority is required to move to declaring an AQMA.

Air Quality Monitoring in Sevenoaks District

13. PM₁₀ monitoring is currently being undertaken near Sevenoaks Quarry as part of LAQM assessment regime. Depending on the final analysis of the results, the area may have to be declared an AQMA if the annual mean PM₁₀ limit value objective is being exceeded. This decision is not expected to be made until 2017.
14. Air quality across the District is measured by a series of 54 diffusion tubes which measure NO² and two Continuous Air Quality Monitoring Stations (CAQMS) situated at Greatness (Background) and Bat and Ball (Roadside).
15. Greatness CAQMS has been in operation for 17 years and provides useful information for trend analysis and research purposes. It monitors the main pollutants and is used for identification of pollution episodes at a Regional and National level. It provides data representative of a large area including the rural parts of the District and for the Air Alert Scheme. The strategic location of Greatness is important and is only one of 3 sites in Kent monitoring ozone.
16. The Bat and Ball CAQMS is within the A25 AQMA and monitors both NO² and PM₁₀ at this crucial and busy junction (see Appendix B - 2015 Trends in Annual Mean Nitrogen Dioxide Concentrations Measured at Diffusion Tube Monitoring Sites).

Health Impacts of Air Pollution

17. Despite improvements in air quality over many decades, poor air quality continues to have an impact on public health and the environment. It has been estimated that poor air quality causes up to 50,000 deaths per year and probably causes more mortality and morbidity than passive smoking, road traffic accidents or obesity. The equivalent of 29,000 deaths and an average loss of six months life expectancy is also attributable alone to particulate matter air pollution.

18. In 2012, it was estimated by the Kent & Medway Air Quality Partnership Health Sub Group, that there were potentially as many as 1,180 early deaths across Kent & Medway during 2010 as a result of just PM_{2.5}. Approximately 80 of those were estimated to be within the Sevenoaks District.
19. The financial burdens from the health, economic and social impacts of poor air quality in the UK are considerable with additional costs to the NHS from respiratory hospital admissions triggered for conditions such as asthma and Chronic Obstructive Pulmonary Disease (COPD). Air pollution is considered to be one of the potential causes and exacerbating factors for COPD. Poor air quality and its associated effects on society cost England approximately £10 billion per year.

Vehicle Emissions

20. Air pollution from vehicles is being reduced by the use of improved fuels and by the setting of increasingly stringent emission limits for new vehicles. Whilst the level of pollution being emitted depends on the type of vehicle, generally:
 - New petrol cars fitted with catalysts produce less NO₂ and hydrocarbons than diesels and emit virtually NO₂ particulates;
 - A diesel vehicle typically emits more PM and Nitrogen Oxides (NO_x) than a petrol vehicle;
 - The newest Euro 6 standard vehicles emit less than an older vehicle, due to better pollution control technology;
 - Hybrid vehicles typically emit less NO_x and PM emissions than standard fuelled ones;
 - Electric or hydrogen vehicles have no PM or NO_x tail pipe emissions - though electricity generation emissions will occur at the power station.
21. It has been suggested that improvements in vehicle efficiency have reduced NO_x by 20% since 2008, as well as improving PM emissions. However, the reduction in PM emissions has slowed in the last two years. The Government's aim is for all cars and vans on the roads to be effectively emission free by 2050.
22. Despite improvements to NO₂ emission levels they still remain high in many places and nationally. This is thought to be because:
 - The introduction of increasingly strict standards for NO₂ emissions from diesel vehicles has not delivered the expected emission reductions in real world use;
 - The increased uptake of diesel vehicles was encouraged to reduce carbon dioxide emissions and the effect on climate change, but

unfortunately this has produced significantly higher levels of NO² when compared to petrol engines.

Air Alert

23. The Air Alert scheme is an important 2009 Action Plan initiative which the Council is progressing and is funded by DEFRA grants as well as contributions from Section 106 agreements. Air Alert is a text/email service for people who suffer with asthma or other lung problems, advising them in advance of poor pollution levels so they can take extra steps to manage their condition.
24. The scheme was launched in March 2014 and is a free service and initially was set to run for two years. The scheme, which is the only one to run in Kent does not require any further financial support and will continue for the foreseeable future. 110 people have currently signed up to the scheme.
25. Air Alert is publicised to all individuals who are referred by their GP into the Council's healthy living programmes, including health walks, Why Weight, falls prevention and yoga.

Planning Policy

- 26 Planning seeks to mitigate developments which have an adverse impact on air quality. The Core Strategy (2011) references the Council's approach to air quality under Policy SP2, in which "...the design and location of new development will take account of the need to improve air quality in accordance with the District's Air Quality Action Plan [...] Permission will be refused where unacceptable impacts cannot be overcome by mitigation".

This is reinforced by the Allocations and Development Management Plan (ADMP) which was adopted in February 2015. Paragraph 2.46 of the ADMP states that: emissions from associated traffic movements from new developments must be considered in determining planning applications.

Where a development is able to mitigate impacts on air quality, the planning system is able to impose a Section 106 contribution to improving air quality, where applicable. To date, SDC has secured over £125,000 in Section 106 contributions relating to air quality.

Planning Policy also has to examine the impacts that transport can have on air quality, by encouraging more sustainable modes of transport within new developments.

The Council, with KCC leading, have a Cycling Strategy in which cycling routes have been identified. Work to implement these routes is continuing through the JTB's Cycling Working Group.

The Council is also supportive of KCC's Active Travel Strategy, which encourages residents to use more sustainable modes of travel (i.e. walking and cycling) for shorter journeys, rather than relying on use of the private vehicle.

The Council is currently preparing its new Local Plan, for the period up to 2035. The Council will consider national policy and guidance as well as its evidence base, to provide appropriate local planning policies for new developments.

Existing Schemes that can help improve Air Quality

27. Speeding and the perception of speed is a concern for residents in the District. Speeding cars also contribute to air pollution in many communities in the District. Speeding is raised as an issue at Police And Communities Together (PACT) meetings and action plans. As a result, the Council runs the Speed Watch scheme. Under the scheme, local residents are trained by Kent Police to monitor the speed of vehicles passing through their communities. Details of vehicles found to exceeding the speed limit are passed to the Police and further actions taken. The scheme helps reduce excessive speed and emissions across the District.
28. Walking buses can help reduce schools traffic and congestion around schools. Kent County Council leads on walking buses. Rolling out walking buses to all primary schools in the Sevenoaks District can help reduce the number of vehicles on the road.
29. The Council as a major employer within the District offers a 'Cycle to Work Scheme' which allows staff to purchase a bike (interest free) for a year initially allowing saving on tax an NI and reducing car use. 19 staff members have signed up to the scheme since it has been in operation.

Suggested schemes to be explored that could help improve Air Quality

30. Quick wins:
 - Sign and publicity campaigns: car sharing, turn your engine off...
 - Dialogue with Satnav companies over routes through Sevenoaks town and other "hotspots"
 - De-classification of certain roads through Sevenoaks
 - Review traffic signals at High Street / Dartford Road to "Puffin" so dispensing with pedestrian phase if no pedestrians present
 - Purchase of portable air quality monitoring equipment to assist in raising local awareness
 - Provision of electric vehicle charging points
 - Develop partnership working with neighbouring authorities to seek transboundary improvements to air quality along the A25 corridor
 - Working with local transport operators

- Work in conjunction with KCC to promote active travel and other air quality initiatives
- Continue to promote and expand the Air Alert scheme working with schools and community groups

Key Implications

Financial

31. Any actions taken as a result to explore and pursue the 'quick win options' can be met from remaining S106 (£96k approx.) and Defra Air Quality Grant (£30k approx.) funding.

Legal Implications and Risk Assessment Statement.

32. Part IV of the Environment act 1995 requires local authorities in the UK to review air quality in their area and designate air quality management areas if improvements are necessary. Where an air quality management area is designated, local authorities are also required to work towards the Strategy's objectives prescribed in regulations for that purpose. An air quality action plan describing the pollution reduction measures must then be put in place. These plans contribute to the achievement of air quality limit values at local level.
33. Risk assessment - Local Air Quality Management is a statutory service. If submissions are not made to DEFRA at required intervals, the Council may be subject to external scrutiny and possible intervention from DEFRA (with costs recharged to Council).

Equality Assessment

34. The decisions recommended through this paper have a remote or low relevance to the substance of the Equality Act. There is no perceived impact on end users.

Conclusions

1. Local Air Quality Management is a statutory function which has resulted in the Council declaring nine AQMAS for exceedance of NO² and PM₁₀ AQS Objective and EU Limit Values. The Council must produce an Annual Status Report with respect to air quality.
2. Poor air quality can adversely affect health and reduce life expectancy and has a social and economic impact on both the country and those affected.
3. Air quality is gradually improving but it is still exceeding EU and national standards in some locations both nationally and within the District.

4. The Council seeks to mitigate the potential adverse impact of developments on air quality through the implementation of local planning policy via the planning system and Section 106 contributions
5. The Council has a number of existing schemes in place which can help improve air quality or the effects it can have on certain vulnerable groups.
6. A number of quick win schemes which could both improve air quality and raise local awareness are to be explored. These would utilise existing available funding.

Appendices Appendix A - Location of 9 Air Quality Management Areas across Sevenoaks District.

This appendix also includes a link to the AQMA maps.

Appendix B - 2015 Trends in Annual Mean Nitrogen Dioxide Concentrations Measured at Diffusion Tube Monitoring Sites

Background Papers:

LAGM - Policy Guidance (PG16) 2016

<http://laqm.defra.gov.uk/documents/LAQM-PG16-April-16-v1.pdf>

The Environment Act 1995

<http://www.legislation.gov.uk/ukpga/1995/25/contents>

COMEAP - The Mortality Effects of Long-Term Exposure to Particulate Air Pollution in the United Kingdom

https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/304641/COMEAP_mortality_effects_of_long_term_exposure.pdf

Air quality Action Plan 2009

http://www.sevenoaks.gov.uk/_data/assets/pdf_file/0007/84562/air_quality_action_plan_2009.pdf

Updating and Screening Assessment Report 2015

http://www.sevenoaks.gov.uk/_data/assets/pdf_file/0004/218380/AQ-2015-USA-report.pdf

Air Quality Management - Environment Select Committee - 4th December 2007

<http://cds.sevenoaks.gov.uk/Data/Environment%20Select%20Committee/200712041900/Agenda/Report%20-%20Item%2011%20-%20Air%20Quality%20Management%20Areas.pdf>

Air Quality Monitoring and Management - Housing and Community Safety Advisory Committee - 11th February 2014

<http://cds.sevenoaks.gov.uk/documents/s15658/10>

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