

+Cabinet Meeting	
Meeting Date	8 July 2020
Report Title	Declaration of 2 new Air Quality Management Areas
Cabinet Member	Cllr Tim Valentine, Cabinet Member for Environment
SMT Lead	Nick Vickers, Chief Financial Officer
Head of Service	Tracey Beattie, Mid Kent Environmental Health Manager
Lead Officer	Julie Oates, Environment Protection Team Leader
Key Decision	Non-Key
Classification	Open
Recommendations	<ol style="list-style-type: none"> 1. To declare a new Air Quality Management Area (AQMA) at Keycol Hill for nitrogen dioxide. 2. To declare an AQMA for particulates at the existing AQMA at St Pauls Street, Sittingbourne. 3. To proceed with the declaration of the AQMAs using Defra's Fast Track procedure.

1 Purpose of Report and Executive Summary

- 1.1 This report is to inform Cabinet of the need to declare 2 Air Quality Management Areas (AQMAs). The first area is for a new AQMA located at Keycol Hill, Sittingbourne and is for the exceedance of the annual average Air Quality Objectives (AQO) for nitrogen dioxide (NO₂) of 40 µgm⁻³. The second is at the existing AQMA in St Pauls Street, Sittingbourne and is for the exceedances of the AQO relating to the annual allowance of daily exceedances of particulates (PM10).The AQO is 35 exceedances of the daily limit of 50 µgm⁻³.
- 1.2 With regards to Keycol Hill, additional NO₂ diffusion tubes were added to the local road network in 2018 in this part of Sittingbourne. This also included the Key Street area on the opposite side of the A2/A249 roundabout. Since July 2018, the annual mean AQO has been consistently exceeded along Keycol Hill. In addition, one of the Key Street diffusion tubes also exceeded the annual mean AQS in 2018.
- 1.3 As a result of this, it was decided to undertake an air quality assessment using detailed air quality dispersion modelling to provide the evidence to determine the requirement for declaring an AQMA and also the area to be declared. The assessment was undertaken by Phlorum Ltd and finalised in April 2020.
- 1.4 The dispersion modelling looked at predicted annual mean concentrations of NO₂ at 23 sensitive receptor locations on Keycol Hill, Key Street and London Road. Of these, exceedances of the AQO were predicted at 4 receptor locations on Keycol

Hill but none at Key Street or London Road. Although not, fully ratified at the time the assessment was undertaken (nor agreed by Defra), the diffusion tube data for 2019 was also examined by Phlorum. Generally, there has been a decrease in concentrations since 2018, but exceedances at Keycol Hill were still evident. No exceedances were recorded for Key Street which shows compliance with the annual mean AQO at the current time. However, NO₂ levels are within 10% of the AQO. Therefore, monitoring will continue in Key Street to detect any deterioration.

- 1.5 An AQMA is therefore required to be declared for Keycol Hill, but not for Key Street.
- 1.6 St Pauls Street was declared an Air Quality Management Area (AQMA) for exceedance of the annual average Air Quality Objective (AQO) for NO₂ in January 2013. A Strategic Air Quality Action Plan (AQAP) was finalised in 2018 which covers this area.
- 1.7 In 2018 Swale Borough Council installed equipment to measure PM₁₀ at this site. The first full year for data capture was in 2019 which showed exceedances of the AQO annual allowance of daily exceedances of PM₁₀. In 2019 the daily mean limit value of 50 µgm⁻³ was exceeded on 42 days. The annual allowance of days exceeded is 35 days. The maximum daily mean was 142 µgm⁻³ recorded in November 2019.
- 1.8 As regular exceedances of the daily mean limit for PM₁₀ are relatively rare in this type of residential/urban location, initial concerns were that the exceedances might be due to the older TEOM analyser being used. However, the TEOM equipment was replaced by new BAM equipment monitoring both PM₁₀ and PM_{2.5} in March 2020. Since that time, exceedances have continued. From January to the end of April, there have been 22 exceedances with a maximum of 137 µgm⁻³.
- 1.9 As a result of the continued exceedances, we will have to declare an AQMA for PM₁₀ in St Pauls Street.
- 1.10 The Annual Status Report (ASR) 2020 (detailing 2019 data) is being completed at the moment and will be submitted to Defra for approval/action by the end of June. The ASR will report the AQO exceedances for both Keycol Hill and St Pauls Street and the requirement to declare the AQMAs. This methodology of reporting the potential AQMAs is part of Defra's Fast Track declaration procedure. For Local Authority's experienced in declaring AQMA's the Fast Track procedure negates the need for further reports or assessments to have to be submitted to Defra . Public and Statutory consultation will still be required.
- 1.11 The requirement to declare an AQMA is a statutory obligation under the Environment Act 1995.

2 Background

2.1 Under the Environment Act 1995 and the Local Air Quality Management framework, Swale Borough Council has a statutory duty to review and assess air quality within its borough and take the necessary actions to improve areas of poor air quality. If Air Quality Objectives (AQO) for key pollutants are exceeded, an Air Quality Management Area (AQMA) must be declared. To date Swale Borough Council has declared five AQMA's for exceedances of the annual average AQO for nitrogen dioxide (NO₂):

AQMA 1: Newington, (A2/High St) declared 2009;

AQMA 2: Ospringle Street, Faversham (A2/Ospringle) declared in June 2011 and revised (as AQMA 6) to the Mount in May 2016. AQMA 2 has now been revoked and renamed and consolidated into one as AQMA 6;

AQMA 3: East Street, Sittingbourne (A2/Canterbury Road) declared January 2013;

AQMA 4: St Pauls Street, Milton, Sittingbourne (B2006) declared January 2013;

AQMA 5: Teynham (A2 /London Rd) declared December 2015; and

AQMA 6: See details in AQMA 2 above.

2.2 Once an AQMA has been declared, local authorities are required to draw up and publish an Air Quality Action Plan (AQAP) The 2019 Strategic AQAP outlines actions and measures that will be delivered in order to reduce concentrations of air pollution and exposure to air pollution.

2.3 The results from the installation of additional diffusion tubes on Keycol Hill and Key Street for 2018 indicated that the annual mean AQO has been consistently exceeded along Keycol Hill. In addition, one of the Key Street diffusion tubes also exceeded the annual mean AQS in 2018. Results during 2019 also suggested that exceedances were happening at Keycol Hill. Consequently, an air quality assessment has been undertaken using detailed air quality dispersion modelling to validate the requirement for declaring an AQMA and also the area to be declared. The assessment was undertaken by Phlorum Ltd and finalised in April 2020.

2.4 The ADMS-Roads model was used to model and predict NO₂ levels at 23 sensitive receptor locations. The ADMS-Roads model is a detailed air dispersion model validated and approved by Defra and widely used as a tool to calculate the dispersion of pollutants from traffic. The latest Defra Emissions Factor Toolkit was used to estimate vehicle emissions and other data input into the model includes, meteorological data, background pollutant concentrations from Defra and local monitoring data (diffusion tubes and continuous monitoring stations). Full model verification was undertaken and adjustment factors applied accordingly.

2.5 Sensitive receptor locations were chosen at the facades of buildings closest to the road and modelled at 'breathing height' (1.5m) for most locations i.e. a worst-case location scenario. The results in Table 1 show the predicted annual mean concentrations of PM10 at the receptor locations (2018 data). Exceedances of the AQO are predicted at 4 locations on Keycol Hill. There were no exceedances of

the AQO in Key Street or London Road. All predicted levels in these areas were well below the annual mean AQO concentration of 40 $\mu\text{g m}^{-3}$. The locations of these receptors and results can be seen on the maps in Appendix 1.

Receptor	Location	Annual Mean NO2 concentration ($\mu\text{g m}^{-3}$)
R1	Keycol Hill	19.7
R2	Keycol Hill	29.5
R3	Keycol Hill	26.7
R4	Keycol Hill	25.4
R5	Keycol Hill	21.3
R6	Keycol Hill	21.9
R7	Keycol Hill	29.2
R8	Keycol Hill	78.6
R9	Keycol Hill	34.8
R10	Keycol Hill	29.4
R11	Keycol Hill	26.8
R12	Keycol Hill	52.7
R13	Keycol Hill	49.5
R14	Keycol Hill	44.1
R15	Key St	33.9
R16	Key St	27.9
R17	Key St	31.2
R18	Key St	24.9
R19	Key St	30.9
R20	Key St	27.6
R21	London Rd	36.1
R22	London Rd	31.3
R23	London Rd	29.8

Table.1: Predicted annual Mean NO2 concentrations at sensitive receptor locations. Bold denotes exceedance of AQO.

- 2.6 The data set of diffusion tube data for 2019 was not available or fully ratified at the time the report was written. However, it was looked at by Phlorum for comparison purposes and generally, there has been a decrease in concentrations in 2019 when compared to 2018. However, exceedances at Keycol Hill were still evident. There were no exceedances for Key Street and concentrations appear to be well below the annual mean AQO. The full data set of 2019 results will be presented in the Annual Status Report 2020 which will be submitted to Defra for approval in June.
- 2.7 An AQMA can only be declared where there is evidence or that an AQO has been or is likely to be exceeded. Based on this and the findings of the appraisal report, an AQMA is therefore required to be declared for Keycol Hill, but not for Key Street.

- 2.8 St Pauls Street was declared an Air Quality Management Area (AQMA 4) for the exceedance of the annual average Air Quality Objective (AQO) for NO₂ in January 2013. On the whole, levels of NO₂ have continued to exceed or be close to the AQO since declaration. The only exception being for 2016 and 2017 where there was a decrease. A Strategic Air Quality Action Plan (AQAP) was finalised in 2018 which covers this area.
- 2.9 In 2018 Swale Borough Council installed equipment to measure PM₁₀ at this site. Data capture for 2018 was low and there was no exceedance of the AQO. The first full year for data capture was in 2019 which showed a number of measured exceedances of the AQO annual allowance of daily exceedances of PM₁₀. In 2019 the daily mean limit value of 50 µg_m⁻³ was exceeded on 42 days. The annual allowance of days exceeded is 35 days. The maximum daily mean was 142 µg_m⁻³ recorded in November 2019.
- 2.10 As regular exceedances of the daily mean limit for PM₁₀ are relatively rare in this type of residential/urban location adjacent to a 'B' class road, initial concerns were that the exceedances might be due to possible inaccuracies caused by the use of the older TEOM analyser that had been installed. However, the TEOM equipment was replaced by new BAM equipment monitoring both PM₁₀ and PM_{2.5} in March 2020. Since that time, exceedances have continued. From January to the end of April, there have been 22 exceedances with a maximum of 137 µg_m⁻³.
- 2.11 In view of the number of exceedances of the daily mean limit value so far this year, it is highly likely that there will be more than the annual allowance of exceedances (35 days) for 2020 as there were for 2019. As a result, we will have to declare an AQMA for PM₁₀ in St Pauls Street and this is likely to be a recommendation to Defra in the ASR 2020.
- 2.12 If a local authority identifies that there is a risk of exceeding an Air Quality Objective outside of an existing AQMA or for a different pollutant, it should declare an AQMA. Local Air Quality Management Technical Guidance (TG16 Feb 2018) provides the option of Fast Tack declaration. This is based on the collation of monitoring data and dispersion modelling where appropriate and the conclusion that the risk of exceedance of an AQO is likely. This information can be incorporated into the Annual Status Report supporting the decision to declare. This option is available to Local Authorities who have the experience and knowledge of declaring AQMAs and are able to determine suitable AQMA boundaries with reasonable certainty based on this.
- 2.13 The Phlorum report has provided a suggested AQMA boundary for Keycol Hill based on the dispersion modelling results. For St Pauls Street, it is proposed that the boundary of the AQMA for the PM₁₀ AQO is the same as AQMA 4.

3 Proposals

- 3.1 To start the process for declaring AQMAs at Keycol Hill (for exceedance of the annual AQO for NO₂) and St Pauls Street (for exceedance of the AQO for the

annual allowance of daily exceedances of PM10). This process will start using the Fast Track declaration procedure once the ASR 2020 has been submitted to and approved by Defra.

4 Alternative Options

- 4.1 Declaring an AQMA is a statutory requirement. Failure to make the declarations where evidence exists of exceedances of any AQO would not be fulfilling our statutory duty. The Secretary of State has the power to direct local authorities under section 85 of the Environment Act 1995 to take specified steps which include declaring an AQMA.

5 Consultation Undertaken or Proposed

- 5.1 The Council is required to undertake statutory consultation on the declaration of a new AQMA prior to its formal declaration which is by legal order. Schedule 11 of the Environment Act 1995 lists statutory consultees on AQMA declarations. In addition, consultation will include members of the public and other relevant local groups. A consultation period of 6 weeks is required.

6 Implications

Issue	Implications
Corporate Plan	The proposals support Priority 2: Investing in our environment and responding positively to global challenges in the emerging Corporate Plan 2020-2023 'Working together for a better borough'.
Financial, Resource and Property	The AQMA declaration process will be implemented and met by existing staff resources and budget.
Legal, Statutory and Procurement	Declaring an AQMA is a statutory requirement under the Environment Act 1995.
Crime and Disorder	None identified
Environment and Sustainability	Implementation of the Regulations supports measures in the Strategic Air Quality Action Plan and also supports the declaration of the Environmental and Ecological Climate Emergency.
Health and Wellbeing	The AQAP measures and any reductions in vehicle emissions are beneficial to the health of residents.
Risk Management and Health and Safety	Failure to declare the AQMAs could result in reputational risk to the Council.
Equality and Diversity	None identified.

Privacy and Data Protection	None identified
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7 Appendices

7.1 The following documents are to be published with this report and form part of the report:

- Appendix 1: Maps of sensitive receptor locations and NO₂ results
- Appendix 2: Maps of proposed AQMA boundaries

8 Background Papers

None