

# **Appendix A**

## Air Quality Action Plan



**Sevenoaks District Council  
Air Quality Action Plan**

December 2021





***Move Forward with Confidence***

## Document Control Sheet

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Contact Details		
<b>Company Name</b>	Bureau Veritas UK Limited	Sevenoaks District Council
<b>Contact Name</b>	Hannah Smith	Nick Chapman
<b>Position</b>	Principal Air Quality Consultant	Environmental Health Manager
<b>Address</b>	Fifth Floor 66 Prescot Street London E1 8HG	Sevenoaks District council Argyle Road Sevenoaks TN13 1HG
<b>Telephone</b>	020 7661 0774	01732 227167
<b>e-mail</b>	Hannah.smith@bureauveritas.com	Nick.chapman@sevenoaks.gov.uk
<b>Websites</b>	www.bureauveritas.co.uk	www.sevenoaks.gov.uk

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	Name	Job Title	Signature
<b>Prepared By</b>	A Smith	Graduate Consultant	
<b>Approved By</b>	H Smith	Principal Consultant	

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# Sevenoaks District Council Air Quality Action Plan

In fulfilment of Part IV of the  
Environment Act 1995  
Local Air Quality Management

December 2021

Sevenoaks District Council

Local Authority Officer	Nick Chapman
Department	Environmental Health
Address	Sevenoaks District Council Argyle Road Sevenoaks TN13 1HG
Telephone	01732 227167
E-mail	<a href="mailto:nick.chapman@sevenoaks.gov.uk">nick.chapman@sevenoaks.gov.uk</a>
Report Reference number	UK_6726243_v2.0
Date	December 2021

## Executive Summary

This Air Quality Action Plan (AQAP) has been produced as part of our statutory duties required by the Local Air Quality Management framework. It outlines the action we will take to improve air quality in Sevenoaks District Council (SDC) between 2022 and 2027.

Where an exceedance of the Air Quality objective is recorded, local authorities are required to declare an Air Quality Management Area (AQMA) to focus efforts into reducing pollutant concentrations. This action plan is for the existing AQMAs as detailed below:

- AQMA No.8 (Swanley Town Centre) - An area encompassing Swanley Town Centre, High Street and London Road. Declared for exceedances of the NO<sub>2</sub> annual mean objective;
- AQMA No.10 (Sevenoaks High Street) - An area encompassing Sevenoaks High Street and London Road. Declared for exceedances of the NO<sub>2</sub> annual mean objective;
- AQMA No.13 (A25) - The entire length of the A25 from the border with Tonbridge and Malling in the East to the border with Tandridge on the West. Declared for exceedances of the NO<sub>2</sub> annual mean objective; and
- AQMA No.14 (Junction of Birchwood and London Roads, Swanley) - Junction of Birchwood Road and London Road, Swanley. Declared for exceedances of the NO<sub>2</sub> annual mean objective.

This action plan replaces the previous “Air Quality Action Plan 2009”, which has been in place since 2009. The measures detailed within this updated action plan are largely to be considered as district-wide measures, therefore relevant to all AQMAs listed above. A detailed modelling assessment to support this action plan has been carried out for all AQMAs with the exception of AQMA No.8 and AQMA No.14, due to a lack of available traffic data at the time of assessment, and the COVID-19 pandemic preventing any representative traffic data to be collected.

Projects delivered through the past action plan include:

- Setting up an internal working group to identify, implement and monitor air quality mitigation measures;

- Introducing 2 electric cars, 2 electric bicycles and 1 electric road sweeper into the Council's fleet;
- Installing 10 EV charging points in public car parks;
- Retrofitting boilers in the housing stock to low carbon alternatives, whilst encouraging switch and save; and

Air pollution is associated with a number of adverse health impacts. It is recognised as a contributing factor in the onset of heart disease and cancer. Additionally, air pollution particularly affects the most vulnerable in society: children and older people, and those with heart and lung conditions. There is also often a strong correlation with equalities issues, because areas with poor air quality are also often the less affluent areas<sup>1,2</sup>.

The annual health cost to society of the impacts of particulate matter alone in the UK is estimated to be around £16 billion<sup>3</sup>. Sevenoaks District Council is committed to reducing the exposure of people in Sevenoaks District to poor air quality in order to improve health.

This Action Plan aims to tackle the main causes of poor air quality within Sevenoaks District, namely emissions from combustion engines, particularly diesel vehicles, and emissions from domestic combustion sources. We have developed actions that can be considered under 8 EU Measure Categories:

- Alternatives to private vehicle use
- Policy guidance and development
- Promoting low emission transport
- Promoting travel alternatives
- Public information
- Transport planning and infrastructure
- Traffic management
- Vehicle fleet efficiency

The Council have identified a number of priorities to help achieve this aim:

- **Promoting Public Health and Wellbeing** – Providing information of the impacts associated with poor air quality alongside providing information and

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<sup>1</sup> Environmental equity, air quality, socioeconomic status and respiratory health, 2010

<sup>2</sup> Air quality and social deprivation in the UK: an environmental inequalities analysis, 2006

<sup>3</sup> Defra. Abatement cost guidance for valuing changes in air quality, May 2013

guidance to residents on how they can help bring about improvements to air quality.

- **Reducing the Need to Travel** – Supporting sustainable development and initiatives that support the local economy, services and facilities.
- **Active Travel, Public Transport and Low Emission Vehicles** – Encouraging the uptake of alternatives to the car through improving cycling and walking opportunities, supporting sustainable public transport, car clubs and travel plans, encouraging the uptake of electric vehicles, improving the electric vehicle charging infrastructure and other initiatives.
- **Public Information and Behavioural Change** – Providing information on the causes and implications of poor air quality. Encouraging changing travel patterns and lower emission alternatives for domestic heating.
- **Local Planning Policy and Development Management** – Ensuring new development does not exacerbate any existing poor air quality issues and provides appropriate mitigation measures where this is unavoidable. The Local Plan will also support active travel, sustainable transport modes and electric vehicle charging infrastructure.
- **SDC Vehicle Fleet** – SDC will look at its own vehicle fleet and operations to reduce harmful emissions and increase efficiency.
- **Transport Planning and Traffic Management** – We will work with partners to mitigate existing areas of traffic and transport issues as well as seeking opportunities for alternatives and improvement.

In this AQAP we outline how we plan to effectively tackle air quality issues within our control. However, we recognise that there are a large number of air quality policy areas that are outside of our influence (such as vehicle emissions standards agreed in Europe), but for which we may have useful evidence, and so we will continue to work with regional and central government on policies and issues beyond Sevenoaks District Council's direct influence.



## Responsibilities and Commitment

This AQAP was prepared by Bureau Veritas and the Environmental Health Department of Sevenoaks District Council with the support and agreement of the following officers and departments:

- Deputy Chief Executive and Chief Officer Planning and Regulatory Services
- Environmental Health Manager
- Strategic Planning Team
- Head of Direct Services
- Net Zero Working Group
- Transformation and Strategy Team
- Communications Manager
- Economic Development and Property

This AQAP has been approved by:

- Sevenoaks District Council Senior Management Team
- Cleaner & Greener Advisory Committee
- Cabinet
- Full Council at Sevenoaks District Council

This AQAP will be subject to an annual review, appraisal of progress and reporting to the Cleaner and Greener Advisory Committee Progress each year will be reported in the Annual Status Reports (ASRs) produced by Sevenoaks District Council as part of our statutory Local Air Quality Management duties.

If you have any comments on this AQAP please send them to Nick Chapman, Environmental Health Manager at:

Sevenoaks District Council, Council Offices, Argyle Road, Sevenoaks, Kent, TN13 1HG

Telephone: 01732 227000

Email: [environmental.health@sevenoaks.gov.uk](mailto:environmental.health@sevenoaks.gov.uk)

# Table of Contents

<b>Executive Summary .....</b>	<b>i</b>
Responsibilities and Commitment.....	iv
<b>1 Introduction .....</b>	<b>1</b>
<b>2 Summary of Current Air Quality in Sevenoaks District .....</b>	<b>2</b>
2.1 AQMA No.8 Swanley Town Centre .....	2
2.2 AQMA No.10 Sevenoaks High Street.....	3
2.3 AQMA No.13 A25.....	5
2.4 AQMA No.14 Junction of Birchwood and London Roads, Swanley .....	8
<b>3 Sevenoaks District Council’s Air Quality Context and Priorities .....</b>	<b>11</b>
3.1 Public Health Context.....	11
3.2 Planning and Policy Context.....	13
3.2.1 Clean Air Strategy 2019.....	14
3.2.2 UK Plan for Tackling Roadside Nitrogen Dioxide Concentrations .....	15
3.2.3 Sevenoaks District Council Plan .....	16
3.2.4 Sevenoaks District Council Local Plan .....	16
3.2.1 Sevenoaks District Strategy for Transport .....	18
3.2.2 Sevenoaks District Cycling Strategy .....	21
3.2.3 Net Zero 2030 .....	21
3.2.4 Low Emission and Electric Vehicle Strategy.....	22
3.3 Source Apportionment.....	22
3.3.1 AQMA No.10 Sevenoaks High Street .....	23
3.3.2 AQMA No.13 A25.....	25
3.4 Required Reduction in Emissions.....	26
3.4.1 AQMA No.10 Sevenoaks High Street .....	26
3.4.2 AQMA No.13 A25.....	27
3.5 Key Priorities .....	27
<b>4 Development and Implementation of Sevenoaks District Council</b>	
<b>AQAP .....</b>	<b>30</b>
4.1 Consultation and Stakeholder Engagement.....	30
4.2 Consultation Outcomes .....	31
4.3 Steering Group.....	32
<b>5 Indicative AQAP Measures.....</b>	<b>33</b>
<b>Appendix A: Response to Consultation .....</b>	<b>40</b>
<b>Appendix B: Reasons for Not Pursuing Action Plan Measures .....</b>	<b>41</b>
<b>Appendix C: Add Additional Appendices as Required&gt; .....</b>	<b>43</b>
<b>Glossary of Terms .....</b>	<b>44</b>

References ..... 45

List of Tables

Table 2.3 – AQMA No.8 Annual Mean NO<sub>2</sub> Concentrations.....3  
 Table 2.3 – AQMA No.10 Annual Mean NO<sub>2</sub> Concentrations.....4  
 Table 2.4 – AQMA No.13 Annual Mean NO<sub>2</sub> Concentrations.....7  
 Table 2.6 – AQMA No.14 Annual Mean NO<sub>2</sub> Concentrations.....9  
 Table 3.5 – NO<sub>x</sub> Source Apportionment Results: AQMA No.10.....24  
 Table 3.6 – NO<sub>x</sub> Source Apportionment Results: AQMA No.13.....25  
 Table 4.1 – Consultation Undertaken .....30  
 Table 5.1 – Air Quality Action Plan Measures .....34

List of Figures

Figure 1.1 – Overview Map of AQMAs within Sevenoaks District.....1  
 Figure 2.4 – Map of AQMA No.8 Swanley Town Centre .....3  
 Figure 2.5 – Map of AQMA No.10 Sevenoaks High Street.....5  
 Figure 2.7 – Map of AQMA No.13 A25 .....6  
 Figure 2.8 – AQMA No.14 Junction of Birchwood and London Roads, Swanley..... 10  
 Figure 3.1 – Average NO<sub>x</sub> Contribution by Vehicle Class, where Modelled Annual  
 NO<sub>2</sub> Concentrations are >40µg/m<sup>3</sup> within AQMA No.10 .....24  
 Figure 3.2 – Average NO<sub>x</sub> Contribution by Vehicle Class, where Modelled Annual  
 NO<sub>2</sub> Concentrations are >40µg/m<sup>3</sup> within AQMA No.13 .....26

# 1 Introduction

This report outlines the actions that Sevenoaks will deliver between 2022 - 2027 in order to reduce concentrations of air pollutants and exposure to air pollution; thereby positively impacting on the health and quality of life of residents and visitors to the district.

It has been developed in recognition of the legal requirement on the local authority to work towards Air Quality Strategy (AQS) objectives under Part IV of the Environment Act 1995 and relevant regulations made under that part and to meet the requirements of the Local Air Quality Management (LAQM) statutory process.

This Plan will be reviewed every five years at the latest and progress on measures set out within this Plan will be reported on annually within the SDC air quality ASR.

This Plan focuses on actions to improve air quality across the entire district, with a specific focus on four AQMAs declared by Sevenoaks District Council. Five AQMAs are planned for revocation following the acquisition of supporting monitoring data to verify modelled predictions and have therefore not been included within this action plan. AQMA No.8 (Swanley Town Centre) and AQMA No.14 (Junction of Birchwood and London Roads, Swanley) have not had a detailed assessment carried out due to a lack of traffic data available to undertake the dispersion modelling. Additionally, as a result of the COVID-19 pandemic, no ANPR surveys were able to be undertaken. Nonetheless, AQMA No.8 and AQMA No.14 are still discussed in relation to the monitoring carried out within these areas.

This AQAP considers measures that can be applied to the entire district and will therefore also improve air quality within these AQMAs.

The AQMAs are presented in Figure 1.1, and are as follows:

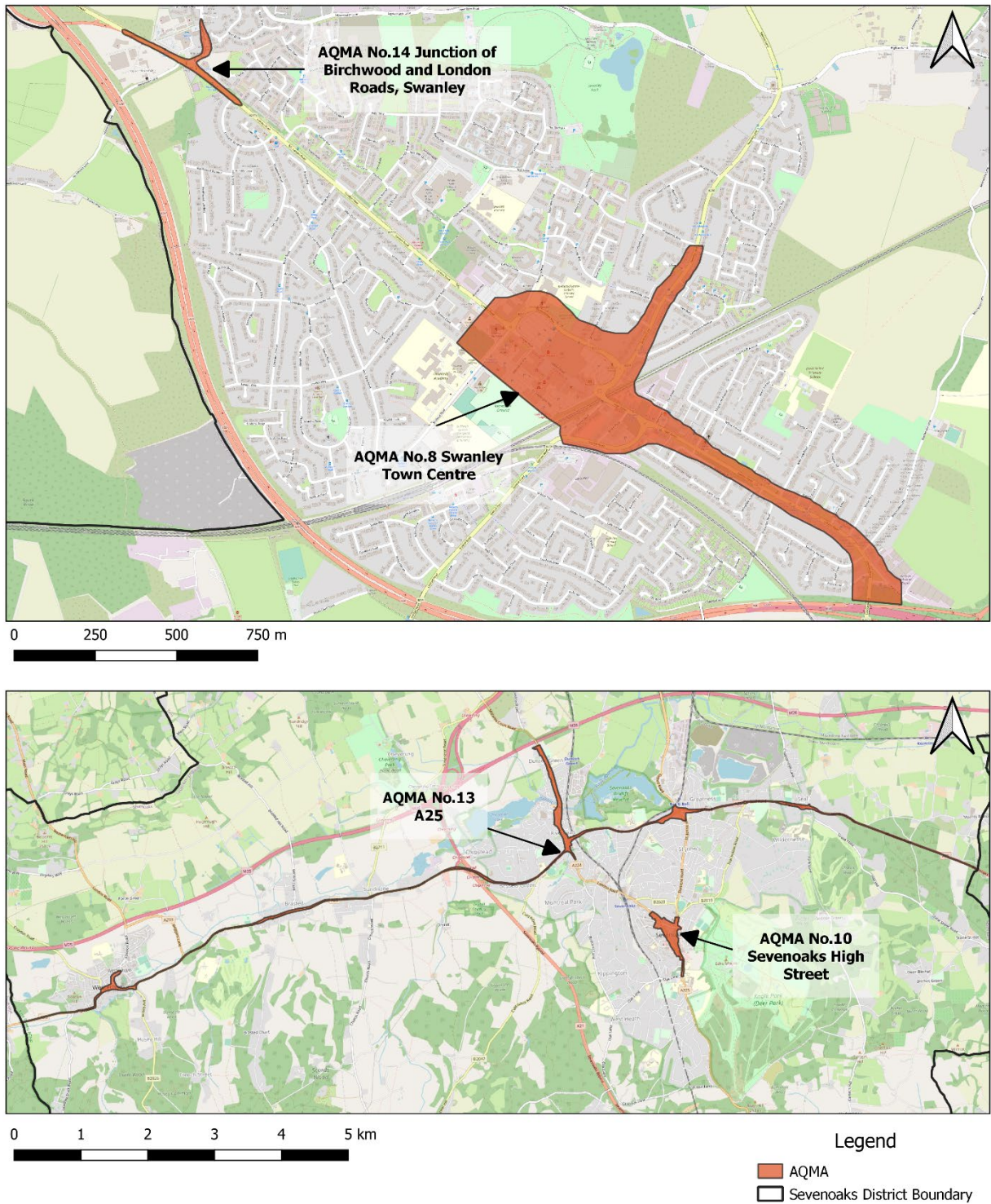
- AQMA No.8 (Swanley Town Centre) - An area encompassing Swanley Town Centre, High Street and London Road. Declared for exceedances of the NO<sub>2</sub> annual mean objective;
- AQMA No.10 (Sevenoaks High Street) - An area encompassing Sevenoaks High Street and London Road. Declared for exceedances of the NO<sub>2</sub> annual mean objective;

## **Sevenoaks District Council**

- AQMA No.13 (A25) - The entire length of the A25 from the border with Tonbridge and Malling in the East to the border with Tandridge on the West. Declared for exceedances of the NO<sub>2</sub> annual mean objective; and
- AQMA No.14 (Junction of Birchwood and London Roads, Swanley) - Junction of Birchwood Road and London Road, Swanley. Declared for exceedances of the NO<sub>2</sub> annual mean objective.



Figure 1.1 – Overview Map of AQMAs within Sevenoaks District



## 2 Summary of Current Air Quality in Sevenoaks District

Sevenoaks District is located within Kent, just south-east of London, and is home to approximately 120,750 residents<sup>4</sup>. The main source of air pollution within the district originates from vehicular emissions of nitrogen dioxide (NO<sub>2</sub>) and particulate matter. The major roads passing through the district include the M25, M26, A21 and A25, linking many parts of London to the Dover port and the Channel Tunnel. As a result, there is a significant amount of continental traffic that passes through the District, including HGVs, as well as the presence of local traffic and commuters passing through into London from other areas within Kent. This creates several air pollution hotspots, chiefly in the towns of Sevenoaks, Swanley and Westerham.

Air quality monitoring is carried out across the district via a network of 51 diffusion tube sites and 2 automatic monitoring locations. Monitoring data for the past 5 years is presented in the following sections so that the trends and the frequency of any exceedances can be considered. It should be noted that there is a degree of uncertainty with regard to the 2020 monitoring data following the COVID-19 pandemic and its impacts on traffic volumes and air quality.

Detailed dispersion modelling was undertaken at relevant sensitive receptors across the district for the year 2018. A summary of the results of this are also discussed in the following sections where applicable.

There have been no exceedances of any of the AQS objectives outside any AQMA in the last 5 years once considered at the nearest relevant exposure.

### 2.1 AQMA No.8 Swanley Town Centre

AQMA No.8 was designated in 2006 for exceedances of the annual mean NO<sub>2</sub> objective. The current boundary covers Swanley Town Centre and along the B2173 London Road up to the M20. Figure 2.1 shows the extent of this AQMA.

There are 3 existing monitoring locations within the boundary of AQMA No.8. The annual mean NO<sub>2</sub> concentration over the past 5 years are presented in Table 2.1.

- Concentrations have largely been decreasing since 2016.

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<sup>4</sup> Office for National Statistics: Mid-2019 Estimates of the population for the UK, England, Wales, Scotland and Northern Ireland. Available at: <https://www.ons.gov.uk/>



- Following distance correction, the predicted annual mean NO<sub>2</sub> concentrations are below the AQS objective in all years reported.

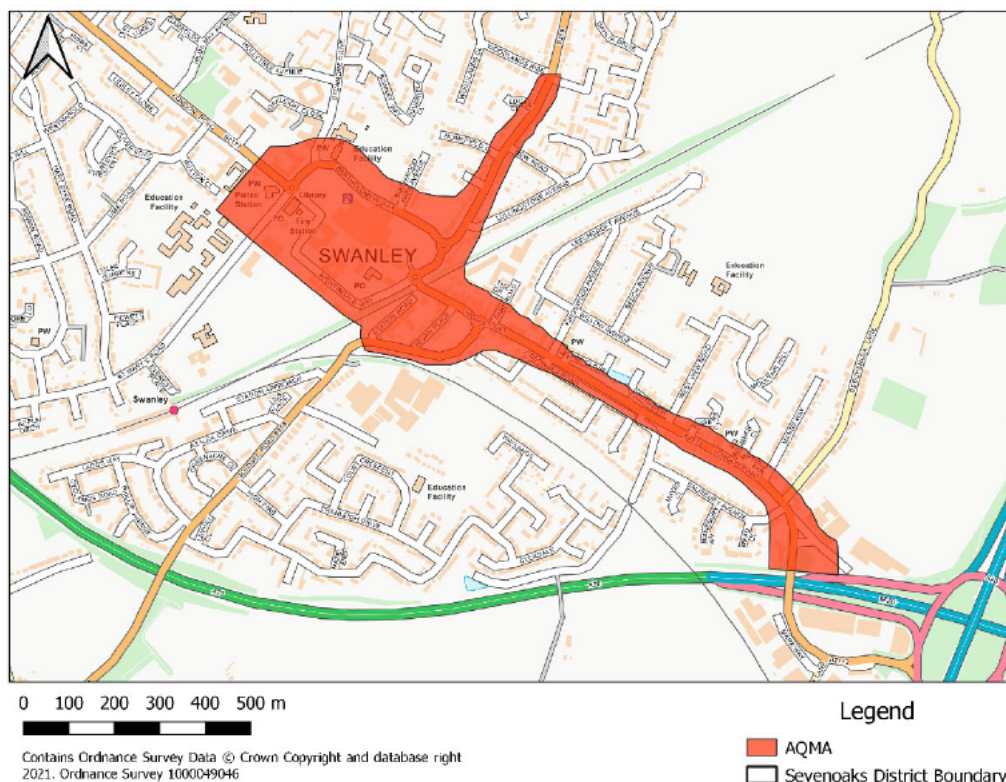
This AQMA was not included within the detailed modelling assessment due to a lack of available traffic data.

**Table 2.1 – AQMA No.8 Annual Mean NO<sub>2</sub> Concentrations**

Site ID	X OS Grid Ref.	Y OS Grid Ref.	Site Type	Annual mean NO <sub>2</sub> concentration (µg/m <sup>3</sup> )				
				2016	2017	2018	2019	2020
DT39	551492	168695	Roadside	<b>40.9</b>	34.5	36.4	34.8	28.1
DT40	551575	168508	Kerbside	<b>51.5</b>	<b>40.9</b>	<b>45.6</b>	37.5	28.4
DT41	552174	168162	Roadside	<b>42.7</b>	<b>40.1</b>	38.6	32.6	27.2

**Note:**  
Exceedances of the NO<sub>2</sub> annual mean AQS objective are in bold

**Figure 2.1 – Map of AQMA No.8 Swanley Town Centre**



## 2.2 AQMA No.10 Sevenoaks High Street

AQMA No.10 was designated in 2006 for exceedances of the annual mean NO<sub>2</sub> objective. The current boundary covers Sevenoaks High Street from the junction of the A225 Oak Lane to where the A225 splits from the B2019. It also incorporates



London Road up to just south of The Drive, Pembroke Road and parts of Suffolk Way, Eardley Road and Argyll Road. The extent of this AQMA is shown in Figure 2.2.

There are 7 existing monitoring locations within the current boundary of AQMA No.10. The annual mean NO<sub>2</sub> concentrations reported at these sites over the past 5 years are presented in Table 2.2.

- DT02, DT28, DT48 and DT51 have all reported at least one exceedance of the annual mean NO<sub>2</sub> AQS objective within the past 5 years. None of these are located at relevant exposure.
- Overall, concentrations have been decreasing since 2016.

**Table 2.2 – AQMA No.10 Annual Mean NO<sub>2</sub> Concentrations**

Site ID	X OS Grid Ref.	Y OS Grid Ref.	Site Type	Annual mean NO <sub>2</sub> concentration (µg/m <sup>3</sup> )				
				2016	2017	2018	2019	2020
DT02	553157	154415	Roadside	<b>54.7</b>	<b>48.1</b>	<b>49.9</b>	<b>40.4</b>	29.6
DT27	553139	154259	Roadside	39.8	38.2	37.7	33.2	21.6
DT28	553043	154890	Kerbside	<b>44.1</b>	36.7	36.8	31.5	23.5
DT29	553073	155026	Roadside	31.5	28.0	28.2	23.7	17.6
DT48	552863	154873	Roadside	27.7	<b>40.7</b>	23.9	20.0	13.6
DT49	553018	154654	Roadside	33.7	28.2	29.1	25.1	17.2
DT51	552662	155153	Kerbside	<b>40.4</b>	35.1	39.0	30.2	22.3

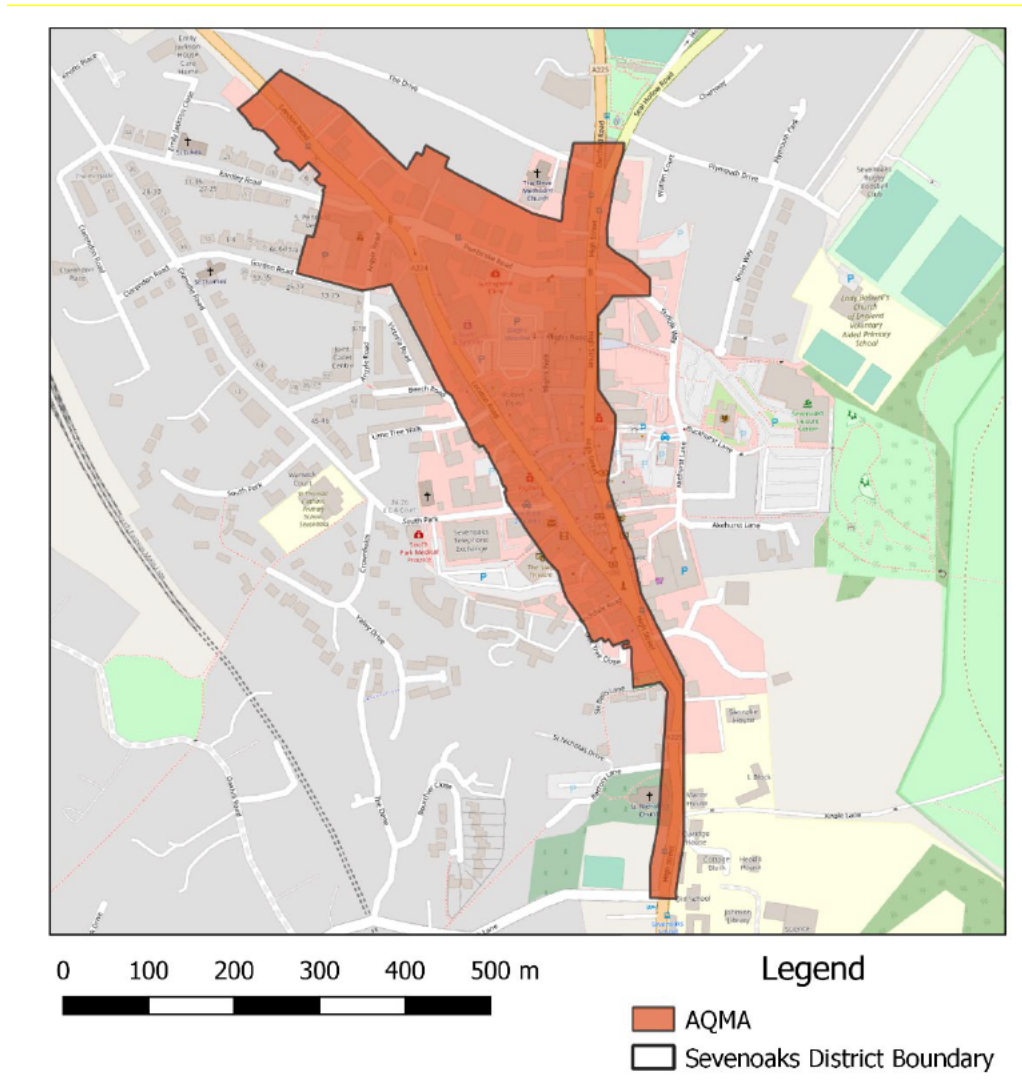
**Note:**  
Exceedances of the NO<sub>2</sub> annual mean AQS objective are in **bold**

Modelled receptors were positioned at numerous existing residential receptor locations throughout the AQMA, both within and in close proximity to the AQMA boundary, inclusive of receptors at Sevenoaks School.

- Exceedances of the annual mean objective were predicted in two areas of the High Street. Northwards of Rectory Lane, a narrow bend near Six Bells Lane and at the High Street where it splits off from the A224 up until the junction to Pembroke Road/Suffolk Way.
- Additional exceedances were predicted along the A224 London Road/Tubs Hill in Sevenoaks.
- There was a predicted concentration greater than 60µg/m<sup>3</sup> in a narrow section of the High Street between Dorset Street and Locks Yard. This indicates a potential exceedance of the hourly-average AQS objective, as per LAQM.TG(16) guidance.

- The receptors modelled at Sevenoaks School are predicted to have concentrations less than  $40\mu\text{g}/\text{m}^3$ .

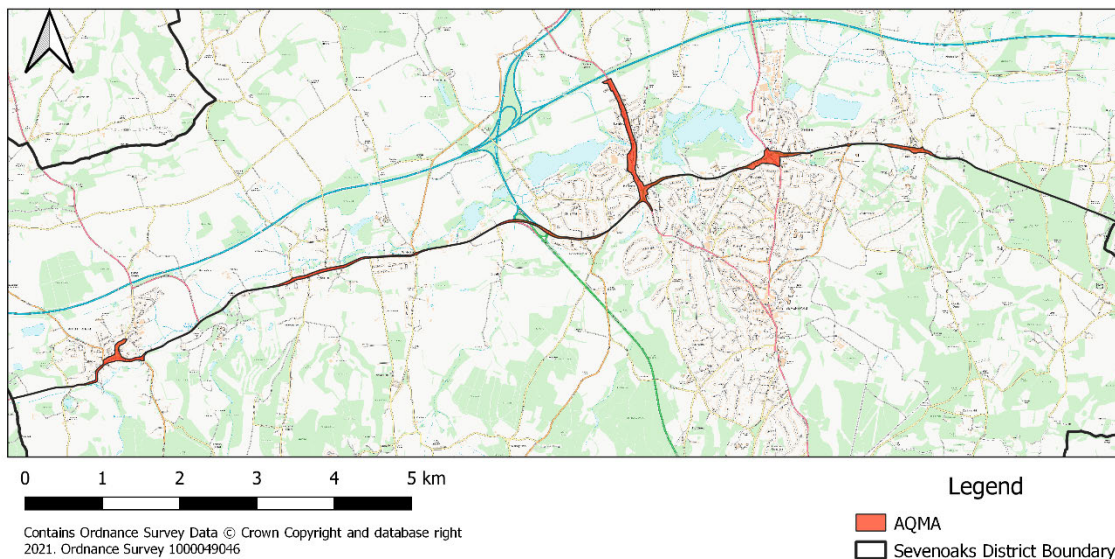
Figure 2.2 – Map of AQMA No.10 Sevenoaks High Street



### 2.3 AQMA No.13 A25

AQMA No.13 has been declared since 2014 for exceedances of the annual mean  $\text{NO}_2$  AQS objective. The AQMA covers the entire stretch of the A25, from the border of Tonbridge and Malling in the east to the border of Tandridge in the west. It also covers the A224 London Road heading northwards from Riverhead until it meets the M26, a section of the A224 Amherst Hill heading south from Riverhead until the junction to Montreal Road, and a section of London Road heading northwards from Market Square in Westerham until it reaches the junction to Quebec Avenue. **Error! Reference source not found.** shows the full extent of this AQMA.

Figure 2.3 – Map of AQMA No.13 A25



There are 26 monitoring locations within or in close proximity to the AQMA boundary. Table 2.3 displays the annual mean NO<sub>2</sub> concentrations reported over the past 5 years at these monitoring locations. 12 monitoring locations have reported at least one exceedance of the annual mean NO<sub>2</sub> objective in the past 5 years (2016-2020). Overall, concentrations have been gradually decreasing over the past 5 years.

- Of these 12 sites, only 3 continue to report exceedances in 2019 (DT31, DT32 DT87). These 3 sites have continuously reported exceedances in previous monitoring years. The other 9 sites no longer report exceedances in 2019 following the gradual decrease of concentrations.
- Following distance correction where monitoring is not conducted at relevant exposure, no sites have reported a concentration to be exceeding the AQS objective in 2019. DT32 does however report a concentration to be within 10% of the AQS objective (39.8µg/m<sup>3</sup>).
- DT31 and DT32 are located on the southern and eastern arms of the A25 Seal Road to A225 junction respectively. This junction experiences heavy congestion, and the southern and eastern sections leading up to the junction are narrow, further amplifying this congestion.
- DT87 is located along the A27 Bradbourne Vale Road approaching the Riverhead junction.

Table 2.3 – AQMA No.13 Annual Mean NO<sub>2</sub> Concentrations

Site ID	X OS Grid Ref.	Y OS Grid Ref.	Site Type	Annual mean NO <sub>2</sub> concentration (µg/m <sup>3</sup> )				
				2016	2017	2018	2019	2020
CM2	553044	156690	Roadside	31.0	28.0	25.0	23.0	18.0
DT05	551414	156197	Kerbside	47.0	42.7	39.3	34.4	30.3
DT06	551440	156165	Roadside	47.1	40.2	41.7	34.8	27.3
DT07	555092	156694	Roadside	46.8	42.7	41.3	36.6	26.2
DT08	554991	156726	Roadside	35.2	26.9	28.3	23.7	19.2
DT23	553059	156624	Roadside	40.5	34.3	39.2	33.0	26.6
DT24	544415	153914	Roadside	35.3	30.4	35.8	28.2	23.0
DT25	544770	154000	Roadside	29.8	25.9	26.1	23.5	18.4
DT31	553165	156685	Roadside	57.9	51.2	51.1	43.6	35.0
DT32	553151	156558	Roadside	56.3	47.6	51.9	40.7	32.5
DT33	555068	156711	Roadside	48.1	40.5	40.5	34.6	26.3
DT34	549427	155691	Roadside	31.7	27.5	26.1	23.5	18.3
DT35	554093	156798	Roadside	39.6	32.5	33.7	30.0	24.3
DT36	544594	154025	Kerbside	45.1	39.6	40.1	33.5	28.2
DT42	551318	156373	Roadside	39.3	35.5	34.5	27.4	23.6
DT43	551281	156860	Roadside	34.1	29.5	28.5	26.5	19.3
DT54	551216	157007	Roadside	36.0	33.8	32.7	28.8	24.8
DT71	548239	155353	Roadside	33.5	30.0	31.3	25.6	22.5
DT74	550768	155584	Roadside	37.1	35.4	35.9	30.7	22.2
DT76	551026	155710	Roadside	40.0	33.9	37.9	33.3	27.4



DT77	551529	155967	Roadside	<b>40.0</b>	38.8	38.7	31.6	25.0
DT84	546802	155000	Roadside	35.4	31.2	32.5	26.5	23.0
DT85	547097	155099	Roadside	<b>51.1</b>	<b>43.9</b>	<b>43.7</b>	35.7	31.5
DT86	550308	155593	Roadside	<b>40.8</b>	36.0	34.7	30.7	21.1
DT87	551640	156335	Roadside	<b>51.7</b>	<b>45.7</b>	<b>47.0</b>	<b>42.3</b>	35.7
DT88	552963	156583	Roadside	32.9	28.7	30.3	28.1	20.7
<b>Note:</b> Exceedances of the NO <sub>2</sub> annual mean AQS objective are in <b>bold</b>								

Discrete modelled receptors within this AQMA have predicted 5 areas of exceedances within this AQMA. These are:

- Westerham, along the A25 between the junction to the B2024 and Mill Lane, and where London Road joins the A25;
- Brasted along the High Street, in particular near to junctions to Church Road and Chart Lane, as well as an additional predicted exceedance near the junction to Rectory Lane;
- The junctions of the A25 and A224 in Riverhead, with the majority of exceedances predicted along the eastern stretch of the A25;
- The junction between the A225 and A25 in Bat & Ball, in particular the southern and eastern stretches where there have been monitored exceedances; and
- The eastern section of the A25 leaving Seal.

## 2.4 AQMA No.14 Junction of Birchwood and London Roads, Swanley

AQMA No.14 was designated in 2014 for exceedances of the annual mean NO<sub>2</sub> objective. The current boundary covers the junction of Birchwood Road and London Road in Swanley, as shown in Figure 2.4.

There are 3 existing monitoring locations within or near to the boundary of AQMA No.14. The annual mean NO<sub>2</sub> concentrations monitored at these sites over the past 5 years are presented in Table 2.4.

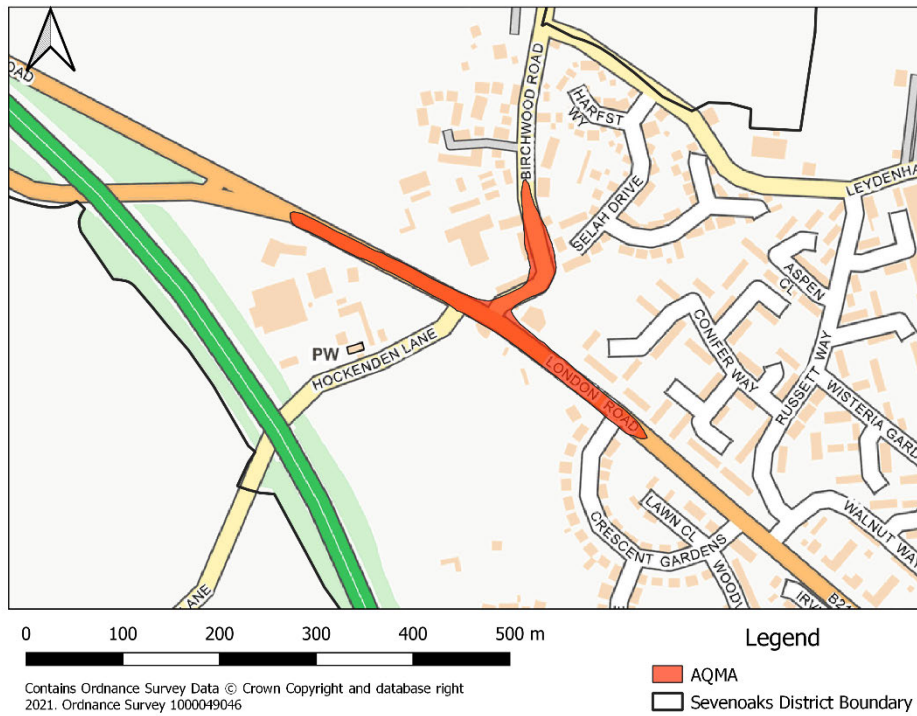
- Exceedances have been reported at DT83 within the past 5 years. This is not located at a site of relevant exposure.
- Concentrations have been decreasing since 2016.
- Following distance correction at DT83, the predicted annual mean NO<sub>2</sub> concentrations continue to be exceeding in 2016, 2017 and 2018.

**Table 2.4 – AQMA No.14 Annual Mean NO<sub>2</sub> Concentrations**

Site ID	X OS Grid Ref.	Y OS Grid Ref.	Site Type	Annual mean NO <sub>2</sub> concentration (µg/m <sup>3</sup> )				
				2016	2017	2018	2019	2020
DT83	550297	169682	Roadside	<b>60.5</b>	<b>49.8</b>	<b>46.7</b>	<b>42.4</b>	<b>33.3</b>
DT94	550258	169575	Roadside	36.9	32.2	33.8	28.6	22.8
DT95	550351	169499	Roadside	38.0	33.6	33.0	30.2	25.0
<b>Note:</b> Exceedances of the NO <sub>2</sub> annual mean AQS objective are in <b>bold</b>								

This AQMA was not included within the detailed modelling assessment due to a lack of available traffic data.

Figure 2.4 – AQMA No.14 Junction of Birchwood and London Roads, Swanley



## 3 Sevenoaks District Council's Air Quality Context and Priorities

This chapter presents the main drivers and the approach taken by Sevenoaks District Council for the development and subsequent selection of measures that have been included within this AQAP. Included within this section of the AQAP are descriptions of the existing strategies and policies that relate to air quality within the district.

A source apportionment study has been completed across the district, focusing on the seven AQMAs whereby a detailed assessment was completed (AQMAs 1, 2, 3, 4, 6, 10 and 13). The source apportionment study has allowed the most significant sources of oxides of Nitrogen (NO<sub>x</sub>) vehicle contributors to be identified. NO<sub>x</sub> are predominantly emitted into the atmosphere in the form of nitric oxide (NO) which is then converted to nitrogen dioxide (NO<sub>2</sub>) through chemical processes in the atmosphere. Under most atmospheric conditions, the dominant pathway for NO<sub>2</sub> formation is via the reaction of NO with ozone (O<sub>3</sub>).

In conjunction, with the strategies and policies that are currently in place, the conclusions of this apportionment exercise have been used to identify and prioritise the action measures presented within Section 5.

### 3.1 Public Health Context

There is increasing scientific evidence that poor ambient air quality has a significant negative impact on health. Research shows that the most common air pollutants of concern, NO<sub>2</sub>, PM<sub>10</sub> and PM<sub>2.5</sub> (particulate matter in the fractions of less than 10 microns and 2.5 microns in diameter), are linked to various health complications, impacting the cardiovascular and respiratory systems. Exposure to these pollutants can bring about symptoms such as nose and throat irritation, followed by bronchoconstriction and dyspnoea, alongside increasing reactivity to natural allergens, increasing the risk of respiratory infections through the pollutants interaction with the immune system<sup>5</sup>, and may lead to reduced lung function. Alongside this, there is increasing interest and pressure from members of public for Local Authorities to actively tackle and reduce air pollution in their areas. Previously, there had been no deaths officially linked to air pollution, however in 2020 the first person in the UK had 'air pollution' listed as a cause of death. Although currently

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<sup>5</sup> Marilena Kampa and Elias Castanas, Human Health Effects of Air Pollution, June 2007



there are no legislative outcomes as a result of this, this further increases the pressure and duty of care that Local Authorities have in order to protect their residents. Poor air quality is considered to be a significant contributory factor to the loss of life, shortening lives by an average of 5 months. In 2010, the Department of Health's Committee on the Medical Effects of Air Pollutants (COMEAP) reported that long-term exposure to outdoor air pollution contributes to the equivalent of 29,000 deaths in 2008 in the UK, and an associated loss to the population of 340,000 life-years. A further report by the Royal College of Physicians reported in 2016 that it contributed to the equivalent of 40,000 deaths in 2015.

Local authorities have a range of powers which can effectively help to improve air quality. However, the involvement of public health officials is crucial in playing a role to assess the public health impacts and providing advice and guidance on taking appropriate action to reduce exposure and improve the health of everyone within Sevenoaks District Council.

The Air Quality Indicator in the Public Health Outcomes Framework (England) provides further impetus to join up action between the various local authority departments which impact on the delivery of air quality improvements. The "Air Quality – A Briefing for Directions of Public Health" document published in March 2017 provides a one-stop guide to the latest evidence on air pollution, guiding local authorities to use existing tools to appraise the scale of the air pollution issue in its area. It also advises local authorities how to appropriately prioritise air quality alongside other public health priorities to ensure it is on the local agenda.

The document comprises the following key guides:

- Getting to grips with air pollution – the latest evidence and techniques
- Understanding air pollution in your area
- Engaging local decision-makers about air pollution
- Communicating with the public during air pollution episodes
- Communicating with the public on the long-term impacts of air pollution
- Air Pollution: an emerging public health issue: Briefing for elected members

Besides NO<sub>2</sub>, there is an increasing focus on fine particulate matter. PM<sub>2.5</sub> is a pollutant of concern meaning particulate matter which is 2.5 microns or less in

diameter. The AQMA has not been declared for PM<sub>2.5</sub> and the modelling as part of the detailed assessment has shown predicted levels below the annual mean objective of 25µg/m<sup>3</sup>.

The Public Health Outcomes Framework data tool compiled by Public Health England quantifies the mortality burden of PM<sub>2.5</sub> within England on a county and local authority scale. The 2019 fraction of mortality attributable to PM<sub>2.5</sub> pollution in Sevenoaks is 5.3%, which is above the national average of 5.1%, and the regional average (South East) 5.2%. It should be noted that this figure only accounts for one pollutant (PM<sub>2.5</sub>) for which stronger scientific evidence on links with mortality exist, and not NO<sub>2</sub>, for which the AQMA is declared, so the true figure is possibly even higher.

Furthermore, following on from a review of research into the death burden associated with the air pollution mixture rather than single pollutants acting independently, the Committee on the Medical Effects of Air Pollutants (COMEAP) are currently reviewing the ability to link deaths to one specific pollutant.

With regards to health impacts as a result of air pollution within Sevenoaks, this is largely associated to concentrations of NO<sub>2</sub> exceeding the annual mean objectives, as well as the hourly-mean objective in some areas. Levels of PM<sub>10</sub> are currently shown to comply with the AQS objectives. Evidence continues to show that there is no real safe threshold for PM<sub>2.5</sub> and the UK government should achieve reductions in levels of PM<sub>2.5</sub> as low as reasonably practicable below the current air quality standard. Monitoring of PM<sub>2.5</sub> shows that concentrations reported are considerably well below the recommended AQS objective. It is expected that some of the measures implemented within this action plan for the achievement of reductions in NO<sub>2</sub> will have co-benefits in additionally reducing concentrations of PM<sub>10</sub> and PM<sub>2.5</sub>.

### **3.2 Planning and Policy Context**

This Air Quality Action Plan outlines the Sevenoaks District Council's plan to effectively tackle air quality issues within its control. There are numerous existing and impending policies and strategies adopted at all levels (local, regional and national) that can exert significant effects, both positive and negative, on air quality across Sevenoaks. It is important to identify and consider these plans and strategies at an early stage of the development of the plan, as these will aid the establishment of the

context in which specific options for improving air quality can be implemented.

Whilst certain policies and / or strategies may be outside of the influence of Sevenoaks District Council, there are a number of related policies and strategies at local and regional levels that can be tied directly with the aims of this AQAP. Some of these have a focus on air quality improvements within the district, whilst others relate to transportation issues and therefore have the added benefit of contributing to overall improvements in air quality across Sevenoaks.

The review of these strategies and policies also assists in preventing duplication of work within the AQAP but can instead work in concordance for mutual benefit whilst also focusing on direct measures outside those considered within the already developed strategies and policies. This section outlines the strategies and policies that have the most significant potential to impact on pollutant concentrations within Sevenoaks District. Given their importance, the majority of measures listed below have been included as action measures within this Action Plan.

The most relevant policies and strategic documents are detailed below.

### **3.2.1 Clean Air Strategy 2019**

The Clean Air Strategy<sup>6</sup> has been published to set out the case for action at a national level, identifying a number of sources of air pollution within the UK including road transportation (relevant in terms of the AQMAs currently present within Sevenoaks) and sets out the actions required to reduce the impact upon air quality from these sources. It has been developed in conjunction with three other UK Government Strategies; the Industrial Strategy, the Clean Growth Strategy, and the 25 Year Environment Plan.

Key actions that are detailed within the strategy aimed at reducing emissions from transportation sources include the following:

- The publication of the Road to Zero strategy, which sets out plans to end the sale of new conventional petrol and diesel cars and vans by 2040;
- New legislation to compel vehicle manufacturers to recall vehicles and non-road mobile machinery for any failures in emission control systems, and to take effective action against tampering with vehicle emissions control systems;

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<sup>6</sup> Department for Environment, Food and Rural Affairs (2019), Clean Air Strategy

- Develop new standards for tyres and brakes to reduce toxic non-exhaust particulate emissions from vehicles. This action would not necessarily target reductions in NO<sub>2</sub> for which the majority of AQMAs within Sevenoaks has been declared;
- The encouragement of the cleanest modes of transport for freight and passengers; and
- Permitting approaches for the reduction of emissions from non-road mobile machinery, especially in urban areas.

### **3.2.2 UK Plan for Tackling Roadside Nitrogen Dioxide Concentrations**

Published in July 2017, the UK Plan for Tackling Roadside Nitrogen Dioxide Concentrations (Detailed Plan)<sup>7</sup> is the UK governments plan for bringing concentrations of NO<sub>2</sub> within statutory limits within the shortest possible time. It is identified that the most immediate air quality challenge within the UK is tackling the issue of NO<sub>2</sub> concentrations close to roads, especially within towns and cities. The plan identifies a number of local authorities that were required to complete feasibility studies to define NO<sub>2</sub> concentrations on road links identified by the national Pollutant Climate Mapping (PCM) model as being in exceedance of the NO<sub>2</sub> annual mean AQS objective.

Sevenoaks District Council were not one of the authorities identified, regardless, the UK Plan provides a high level of detail on possible solutions, and their implementation, to reduce NO<sub>x</sub> emissions from vehicles, and therefore lower NO<sub>2</sub> concentrations. The actions detailed within the UK Plan include the following:

- Implementation of Clean Air Zones (CAZs);
- New real world driving emissions requirements for light passenger and commercial vehicles;
- Additional funding to accelerate the uptake of low emissions buses and also for the retrofitting of older buses;
- Additional funding to accelerate the uptake of hydrogen vehicles and associated infrastructure;

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<sup>7</sup> Department for Environment, Food and Rural Affairs, Department for Transport (2017), UK Plan for Tackling Roadside Nitrogen Dioxide Concentrations (Detailed Plan)

- New mandatory emissions standards for non-road mobile machinery; and
- Local cycling and walking investment plans.

### 3.2.3 Sevenoaks District Council Plan

The SDC Council Plan<sup>8</sup> was adopted in April 2019 and focuses on 5 themes, two of which are the Environment and Health. There is a strong focus on “protecting the very special environment of the district” whilst also delivering “first class health prevention”. Through reducing air pollution and improving air quality within the district, this will help preserve the high quality environment that exists within Sevenoaks. This in turn is strongly linked to improving the overall health of the residents, by helping promote a more active lifestyle but also reducing the burden on the existing health service and infrastructure. Another one of the 5 themes is the Economy. By improving the environmental conditions and overall quality of life in the district, it will become a more attractive place for both new residents and businesses and aid in strengthening the District’s economy.

### 3.2.4 Sevenoaks District Council Local Plan

Sevenoaks District Council’s Core Strategy<sup>9</sup> (adopted in February 2011) and the Allocations and Development Management Plan (ADMP) form the adopted Local Plan for Sevenoaks District, however, this is currently being updated. The Core Strategy sets out the long-term vision and objectives of the district together with strategic policies for shaping new development up until 2026. Specific development management policies and site specific allocations are set out in the ADMP. Strategic objectives are set out for both the urban population centres within the district, which includes the towns of Sevenoaks, Swanley, Edenbridge and Westerham, but also in rural areas and across the district as a whole. There is a significant focus on maintaining and enhancing the quality of environment across the district in a sustainable manner, reducing the need to travel, encouraging sustainable transport modes and to mitigate and adapt to climate change.

In direct relation to air quality, the Core Strategy states that:

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<sup>8</sup> [The Council Plan](#)

<sup>9</sup> [Core Strategy](#)

*“Poor air quality is an issue in certain parts of the District alongside main roads. Eleven Air Quality Management Areas have been declared and the Council has an Air Quality Action Plan (2009) that includes measures to improve air quality.*

*Road traffic is the main contributor to poor air quality and the level of traffic, particularly through traffic is largely outside the control of the District. Policies in the LDF will have some impact on traffic levels though they can only be part of the solution. Locating new development where it is accessible to services and facilities will have a beneficial impact in reducing the need to travel, while applying policies to retain services and facilities that meet a local need together with promoting alternatives to car travel should also reduce the need to travel by car to reach essential services.*

*Future development should avoid adverse impact on air quality, particularly in Air Quality Management Areas where there is a need to improve air quality. In areas of poor air quality careful design of new development will be needed to ensure an acceptable environment for future occupiers.”*

In addition, Policy SP 2 is relevant to air quality and transport:

### ***Transport***

*The Council will support and promote measures to reduce reliance on travel by car both in providing for new development and in supporting measures promoted through the Transport Strategy. Specifically it will:*

- 1. Support improvements to enhance the safety and convenience of public and community transport.*
- 2. Seek improved facilities for cyclists and pedestrians*
- 3. Require the inclusion of Travel Plans and other appropriate measures in new developments that generate significant traffic volumes*

### ***Air Quality***

*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. Development in areas of poor air quality or development that may have an adverse impact on air quality will be required to incorporate mitigation measures to reduce impact to an acceptable level. New development in areas of poor air quality will be required to*

*incorporate measures in the design and orientation that demonstrate an acceptable environment will be created for future occupiers. Permission will be refused where unacceptable impacts cannot be overcome by mitigation.*

### **3.2.1 Sevenoaks District Strategy for Transport**

The Sevenoaks District Strategy for Transport 2010 – 2016<sup>10</sup> was adopted in July 2010 and prepared in parallel with the Core Strategy. The strategy identifies four priority objectives:

- Improving accessibility;
- Tackling congestion;
- Providing safer roads; and
- Improving air quality

It recognises that air pollution is a key challenge with a significant impact on local communities. There are a range of initiatives that link into the air quality action plan, such as developing a traffic management control system to reduce congestion, designating lorry routes and developing a freight quality partnership, and promoting alternative forms of transport. The priority objectives and initiatives have been used to identify priorities in different parts of the district. In direct relation to air quality, these are as follows:

#### **Sevenoaks Urban Area**

- Improve public transport interchange facilities, in particular at the main bus and train stations in Sevenoaks District;
- Bring forward measures to alleviate congestion and tackle air quality issues at Riverhead, Bat and Ball and Sevenoaks Town Centre; and
- Improve facilities for walking and cycling.

#### **Swanley**

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<sup>10</sup> [Strategy for Transport](#)

- Improve accessibility to Swanley Station by walking and cycling;
- Ensure that development in Swanley does not have a significant negative impact on traffic on the Strategic Road Network;
- Improve bus interchange facilities in Swanley;
- Improve facilities for walking and cycling; and
- Bring forward measures to alleviate congestion and tackle air quality issues near Swanley town centre.

### **Edenbridge**

- Increasing the number of destinations that can be accessed via train services from Edenbridge, including services to Gatwick Airport / improved services to Redhill; and
- Improve facilities for walking and cycling.

### **Villages and Rural Areas**

- Maintain and improve accessibility to jobs, shops and services by non-car means, including walking, cycling, public transport and community transport; and
- Bring forward measures to alleviate congestion and tackle air quality issues, including those along the A25 corridor, at Seal and Westerham, and on the Strategic Road Network.

### **Sevenoaks District Transport Assessment**

A transport study<sup>11</sup> for Sevenoaks District was conducted in December 2018 as part of the evidence base for the emerging Local Plan. This identifies existing transport issues and opportunities from the delivery of the emerging Local Plan in addition to mitigation measures.

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<sup>11</sup> [Sevenoaks District Transport Assessment](#)



In relation to air quality, the study identifies Sevenoaks District being situated within a network of strategic roads including the M25, M20, A21 and A25. Traffic on the motorway and strategic road network, particularly during peak hours, causes congestion and air quality problems exacerbating this on local roads and in town centres. The study's analysis has indicated that where new development is proposed, it will need to be focused in sustainable locations that enable trips to be made by foot, cycle and public transport. To mitigate further exacerbating the district's congestion and air quality issues, the study identifies active travel as an emerging transport mitigation measure. It is considered that encouraging active travel is not only a way to promote healthy living but can also be an important intermediary function of the public transport network. The following infrastructure measures are suggested to encourage active travel:

- Ensure all existing pedestrian crossing facilities and bus stops comply with current DDA requirements.
- Enhance pedestrian footways and crossings throughout the District to provide a connected, permeable and safe pedestrian environment that will help encourage modal shift away from the car.
- Ensure that the current and future cycle route network conforms with currently applicable Cycle Design Standards upgrading where necessary.
- Enhance connectivity through the provision of new cycle routes
- Ensure safer cycling is developed across all wards using a systematic approach to ensure consistency in standard of provision.
- Support the implementation of quietways throughout the District to reduce any network gaps.
- Ensure sufficient off-road cycle parking is provided at key destinations
- Use the planning process to ensure sufficient active travel infrastructure is provided through developer funding.

### 3.2.2 Sevenoaks District Cycling Strategy

The Sevenoaks District Cycling Strategy<sup>12</sup> was developed in partnership with Kent County Council and adopted in 2012. This aims to enable the residents of the district to cycle more safely and to encourage a shift towards more sustainable transport choices. A number of priority areas for action have been identified to achieve this:

1. **Creating New Routes and Linkages** – seeking opportunities to develop new routes and linkages which 1) connect population centres to key services such as local schools, employment areas and transport interchanges in the main urban areas of Sevenoaks, Swanley and Edenbridge; and 2) promote leisure cycling through the identification of attractive longer leisure routes which connect to the main urban centres
2. **Safer Cycling** – ensuring infrastructure is well designed, prioritising routes on quiet residential streets away from busy main roads and junctions and providing road safety education
3. **Improvements to Cycle Parking** – identifying locations for additional cycle parking facilities and positioning them to maximise security
4. **Promotion and Encouragement** – raising awareness of cycling and its benefits amongst the community
5. **Maintenance** – ensuring existing and any future facilities are well maintained

### 3.2.3 Net Zero 2030

The Council have committed to working towards achieving Net Zero emissions by 2030 on Council assets and services.

It has also been agreed that the Council will be a “community leader” and encourage low carbon measures across the District through education, best practice, incentives, policy and opportunities. This includes working collaboratively with Kent County Council, Parish and Town Councils, Local Interest Group and the Local Government Association.

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<sup>12</sup> [Cycling Strategy](#)

Reducing carbon emissions goes hand in hand with improving air quality. Transport remains the largest carbon emitting sector in the UK and accounts for 63% of total carbon emissions in Sevenoaks District. By reducing vehicle emissions, we will improve air quality and also reduce carbon emissions from transport.

### **3.2.4 Low Emission and Electric Vehicle Strategy**

The Low Emission and Electric Vehicle Strategy for Sevenoaks District Council<sup>13</sup> was adopted in September 2021. This intends to assist the Council in achieving net zero carbon emissions by 2030, which also has benefits to improving air quality. The focus of this strategy is on promoting low carbon travel, improving the electric vehicle charging network across the district, and continuing the transition to a zero-carbon emissions vehicle fleet. This strategy identifies that ownership of electric vehicles has rapidly increased over the past decade and has the highest level of electric vehicle ownership in Kent.

## **3.3 Source Apportionment**

The AQAP measures presented in this report are intended to be targeted towards the predominant sources of emissions within the district. Vehicular activity has been identified as the principal source of emissions, therefore the relative contributions from different vehicle types (cars, HGVs, LGVs, Buses) have been determined to identify whether a particular vehicle type represents the most significant source of pollution within each AQMA.

A source apportionment exercise was carried out using ADMS-Roads air dispersion modelling to assess the overall emission profiles of the vehicles present within each AQMA. It should be noted that emission sources of NO<sub>2</sub> are dominated by a combination of direct NO<sub>2</sub> (f-NO<sub>2</sub>) and oxides of nitrogen (NO<sub>x</sub>), the latter of which is chemically unstable and rapidly oxidised upon release to form NO<sub>2</sub>. Reducing levels of NO<sub>x</sub> emissions therefore reduces levels of NO<sub>2</sub>. As a consequence, the source apportionment study has considered the emissions of NO<sub>x</sub> which are assumed to be representative of the main sources of NO<sub>2</sub>.

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<sup>13</sup> [Low Emission and Electric Vehicle Strategy](#)

The following sections describe the source apportionment results in each of the AQMAs. A breakdown of NO<sub>x</sub> is given according to vehicle class within the AQMAs and based on the following criteria:

- Contributions based on average NO<sub>x</sub> levels across all monitored locations;
- Contributions based on NO<sub>x</sub> levels across all modelled locations where NO<sub>2</sub> concentrations exceed 40µg/m<sup>3</sup> (where applicable); and
- Contributions based on NO<sub>x</sub> levels at the highest NO<sub>2</sub> concentration receptor in the AQMA.

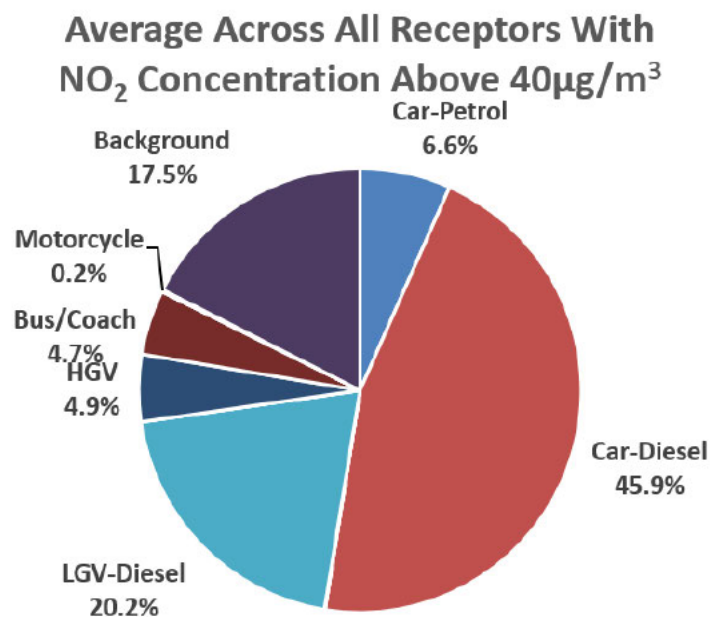
### **3.3.1 AQMA No.10 Sevenoaks High Street**

Table 3.1 provides a breakdown in NO<sub>x</sub> emissions according to vehicle class within AQMA No.10, and Figure 3.1 displays the average NO<sub>x</sub> emissions at across all modelled receptors within AQMA No.10 where the modelled annual mean NO<sub>2</sub> concentration was greater than 40µg/m<sup>3</sup>. At modelled locations where the annual mean NO<sub>2</sub> concentration exceeds 40µg/m<sup>3</sup>, the average NO<sub>x</sub> emissions are predominantly associated with diesel cars whereby they contribute 55.7% of the total road NO<sub>x</sub> concentration. This is followed by diesel LGVs at 24.4%, and petrol cars at 8.0% closely followed by HGVs (5.9%) and Buses/Coaches (5.7%). This is consistent with both the average across all modelled receptors and the worst-case receptor, located along the A225 High Street in between Dorset Street and Locks Yard. This indicates that measures to reduce emissions from diesel cars and LGVs are considered to be most important as they have the most significant influence on emissions within this AQMA.

**Table 3.1 – NO<sub>x</sub> Source Apportionment Results: AQMA No.10**

Results	All Vehicles	Car			LGV			HGV	Bus and Coach	Motorcycle	Background
		Petrol	Diesel	EV/LPG	Petrol	Diesel	EV/LPG				
<b>Average across all modelled receptors</b>											
NO <sub>x</sub> Concentration (µg/m <sup>3</sup> )	54.6	4.4	30.3	0.0	0.0	13.4	0.0	3.2	3.1	0.1	16.7
Percentage of Total NO <sub>x</sub>	76.6%	6.1%	42.5%	0.0%	0.0%	18.9%	0.0%	4.6%	4.3%	0.1%	23.4%
Percentage Contribution to Road NO <sub>x</sub>	100.0%	8.0%	55.5%	0.0%	0.1%	24.6%	0.0%	5.9%	5.7%	0.2%	-
<b>Average Across All Receptors With NO<sub>2</sub> Concentration exceeding the AQS Annual Mean Objective</b>											
NO <sub>x</sub> Concentration (µg/m <sup>3</sup> )	78.6	6.3	43.8	0.0	0.0	19.2	0.0	4.6	4.5	0.1	16.7
Percentage of Total NO <sub>x</sub>	82.5%	6.6%	45.9%	0.0%	0.0%	20.2%	0.0%	4.9%	4.7%	0.2%	17.5%
Percentage Contribution to Road NO <sub>x</sub>	100.0%	8.0%	55.7%	0.0%	0.1%	24.4%	0.0%	5.9%	5.7%	0.2%	-
<b>At the Receptor With the Maximum Road NO<sub>x</sub> Concentration (ID 32)</b>											
NO <sub>x</sub> Concentration (µg/m <sup>3</sup> )	121.9	10.2	71.1	0.0	0.1	26.6	0.0	5.9	7.8	0.2	16.7
Percentage of Total NO <sub>x</sub>	88.0%	7.3%	51.3%	0.0%	0.0%	19.2%	0.0%	4.2%	5.7%	0.2%	12.0%
Percentage Contribution to Road NO <sub>x</sub>	100.0%	8.3%	58.4%	0.0%	0.0%	21.8%	0.0%	4.8%	6.4%	0.2%	-

**Figure 3.1 – Average NO<sub>x</sub> Contribution by Vehicle Class, where Modelled Annual NO<sub>2</sub> Concentrations are >40µg/m<sup>3</sup> within AQMA No.10**



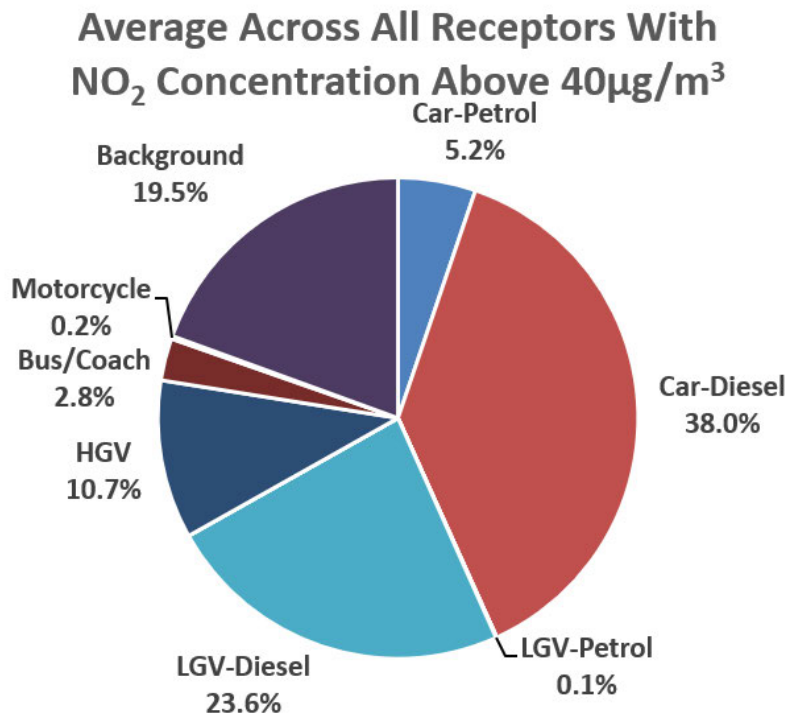
3.3.2 AQMA No.13 A25

Table 3.2 provides a breakdown in NO<sub>x</sub> emissions according to vehicle class within AQMA No.13 and Figure 3.2 displays the average NO<sub>x</sub> emissions at across all modelled receptors within AQMA No.13 where the modelled annual mean NO<sub>2</sub> concentration was greater than 40µg/m<sup>3</sup>. The majority of NO<sub>x</sub> emissions at locations where annual average NO<sub>2</sub> concentrations were exceeding the AQS objective, and the worst-case location (along London Road off of the A25 in Westerham) results from vehicles (80.5% and 87.6% of the total, respectively). At the locations where the AQS objective was exceeded, the majority of the road emissions come from diesel cars (47.2%), followed by diesel LGVs (29.2%). Additionally, HGVs also have a significant proportion, being 13.2%. This indicates that measures to reduce emissions in this AQMA should largely be focused on diesel cars and LGVs, however some consideration should also be taken to reducing emissions from HGVs as well.

Table 3.2 – NO<sub>x</sub> Source Apportionment Results: AQMA No.13

Results	All Vehicles	Car			LGV			HGV	Bus and Coach	Motorcycle	Background
		Petrol	Diesel	EV/LPG	Petrol	Diesel	EV/LPG				
<b>Average across all modelled receptors</b>											
NO <sub>x</sub> Concentration (µg/m <sup>3</sup> )	42.3	2.7	19.8	0.0	0.0	13.0	0.0	5.3	1.4	0.1	18.5
Percentage of Total NO <sub>x</sub>	69.6%	4.4%	32.6%	0.0%	0.0%	21.4%	0.0%	8.8%	2.3%	0.2%	30.4%
Percentage Contribution to Road NO <sub>x</sub>	100.0%	6.3%	46.8%	0.0%	0.1%	30.7%	0.0%	12.6%	3.3%	0.2%	-
<b>Average Across All Receptors With NO<sub>2</sub> Concentration exceeding the AQS Annual Mean Objective</b>											
NO <sub>x</sub> Concentration (µg/m <sup>3</sup> )	76.2	4.9	36.0	0.0	0.0	22.3	0.0	10.1	2.7	0.2	18.4
Percentage of Total NO <sub>x</sub>	80.5%	5.2%	38.0%	0.0%	0.1%	23.6%	0.0%	10.7%	2.8%	0.2%	19.5%
Percentage Contribution to Road NO <sub>x</sub>	100.0%	6.5%	47.2%	0.0%	0.1%	29.2%	0.0%	13.2%	3.5%	0.2%	-
<b>At the Receptor With the Maximum Road NO<sub>x</sub> Concentration (ID 268)</b>											
NO <sub>x</sub> Concentration (µg/m <sup>3</sup> )	111.1	7.8	55.9	0.0	0.1	32.1	0.0	13.2	1.8	0.2	15.7
Percentage of Total NO <sub>x</sub>	87.6%	6.2%	44.0%	0.0%	0.1%	25.3%	0.0%	10.4%	1.4%	0.2%	12.4%
Percentage Contribution to Road NO <sub>x</sub>	100.0%	7.0%	50.3%	0.0%	0.1%	28.9%	0.0%	11.9%	1.6%	0.2%	-

Figure 3.2 – Average NO<sub>x</sub> Contribution by Vehicle Class, where Modelled Annual NO<sub>2</sub> Concentrations are >40µg/m<sup>3</sup> within AQMA No.13



### 3.4 Required Reduction in Emissions

In line with the methodology presented in Box 7.6 of LAQM.TG(16), calculations have been carried out to determine the necessary reduction in road NO<sub>x</sub> required to bring AQMA No.10 and No.13 to compliance. These focus largely on the reductions required at the worst-case scenarios, however the reductions at all exceeding locations within the AQMAs have been considered. It is important to understand that although reducing NO<sub>x</sub> emissions from vehicles will in turn reduce NO<sub>2</sub> concentrations, there is a non-linear relationship between NO<sub>x</sub> and NO<sub>2</sub> concentrations and therefore a greater relative reduction in NO<sub>x</sub> may be required.

#### 3.4.1 AQMA No.10 Sevenoaks High Street

The worst-case receptor within AQMA No.10 is located along the High Street between Dorset Street and Locks Yard. The reduction in NO<sub>x</sub> required to achieve compliance with the annual mean NO<sub>2</sub> objective of 40µg/m<sup>3</sup> at this location is **59.0%**. Across all modelled receptors where an annual average NO<sub>2</sub> concentration of 40µg/m<sup>3</sup> or greater was reported, a reduction of **25.0%** NO<sub>x</sub> is required, which would lead to general improvements overall throughout the AQMA but it will not achieve compliance at the worst-case location. This therefore suggests that a target NO<sub>x</sub>



reduction of between 25% and 59% will have improvements on NO<sub>2</sub> concentrations throughout this AQMA.

### 3.4.2 AQMA No.13 A25

The worst-case receptor within AQMA No.13 is located along London Road, just off of the A25 in Westerham. The reduction in NO<sub>x</sub> required to achieve compliance with the annual mean NO<sub>2</sub> objective at this location is **49.2%**. Across all modelled receptors where the annual average NO<sub>2</sub> objective was exceeded, a reduction of **25.8%** in NO<sub>x</sub> emissions is required, however similarly as noted in Section 3.4.1, this will not achieve compliance at the worst-case location. A target NO<sub>x</sub> reduction of between 26% and 49% is therefore required to have improvements on NO<sub>2</sub> concentrations throughout this AQMA.

## 3.5 Key Priorities

- **Priority 1 – Public Health and Wellbeing** (Behaviour change/modal shift, Health Promotion)
  - Air pollution has a significant impact on public health and is therefore a major reason why the Council wishes to improve air quality. This will largely be driven by a change in attitude and travel behaviours, and as a Council, we have strong role in encouraging and facilitating this change.
  - We will seek to show the health impacts associated with poor air quality and provide information and guidance to our residents as to how they can help to bring about improvements. This will include changing travel patterns and providing information about lower emission alternatives for domestic heating.
  - We will seek to promote the health benefits associated with ‘greener travel’ and will develop policies to remove perceived barriers.
- **Priority 2 - Transport** (Licensing, Parking, Public Transport, Procurement)
  - Road traffic and transport is the major contributor for emissions within the district. The Council therefore wishes to control these via measures contained within this AQAP as a priority.



- The Council is able to influence this via areas of direct control, such as taxi licensing, the composition of its own fleet, encouraging the use of, and facilitating electric charging points to encourage electric vehicle uptake.
- The Council will work with its wider strategic partners, such as Kent County Council, on matters of traffic management and public transport that extend beyond the SDC's direct control. This will help mitigate existing areas of traffic and transport issues, whilst also allowing us to seek opportunities for alternatives and improvements.
- We will lead by example by looking to improve our own vehicle fleet and operations in order to reduce harmful emissions whilst increasing efficiency.
- We will look to reduce the need to travel by supporting sustainable development and initiative that help support the local economy, services and facilities. Additionally, where travelling is required, we will encourage the uptake of alternatives to private and single occupancy vehicles. There will be a focus on active travel, but also supporting sustainable multi-occupancy modes of travel and encouraging the uptake of electric vehicles.
- **Priority 3 - Planning and Infrastructure**
  - As the local planning authority our objectives are:
    - To strengthen and broaden the local economy;
    - To provide sufficient housing to meet local housing need and support economic growth;
    - To protect the built and natural environment; and
    - To develop sustainable communities, and seek to ensure adapt community facilities are provided
  - We believe that applicants should be aware of the air quality impact of their development and that they consider appropriate mitigation as part of the design process.

- We will ensure that new developments do not exasperate any areas of existing poor air quality and provide appropriate mitigation measures where this is unavoidable.
- **Priority 4 - Policy Guidance**
  - A number of relevant and related policy documents are already in place within the Council. It is therefore considered a priority to utilise these and introduce measures that share benefits with other policies and strategies as key mechanisms to reduce emissions from road transport. For example, the Council's Cycling Strategy and Low Emission and Electric Vehicle Strategy identifies that uptake of electric vehicles within Sevenoaks' has increased rapidly over the past decade, already focuses on continuing to encourage this shift to low emission vehicles alongside encouraging the update of alternative modes of transport.

## 4 Development and Implementation of Sevenoaks District Council AQAP

### 4.1 Consultation and Stakeholder Engagement

In developing this AQAP, we have worked with other local authorities, agencies, businesses and the local community to improve local air quality. Schedule 11 of the Environment Act 1995 requires local authorities to consult the bodies listed in Table 4.1.

The response to our consultation stakeholder engagement is given in Appendix A.

**Table 4.1 – Consultation Undertaken**

Yes/No	Consultee
Yes	the Secretary of State
Yes	the Environment Agency
Yes	the highways authority
Yes	all neighbouring local authorities
No	other public authorities as appropriate, such as Public Health officials
Yes	bodies representing local business interests and other organisations as appropriate

In addition we have consulted the following bodies:

- All Sevenoaks District Council Departments
- Kent County Council
- Kent Health Protection Team
- Local Clinical Commissioning Groups
- Local Chambers of Commerce
- Federation of Small Businesses
- Logistics UK
- Friends of the Earth

- Green Peace
- Natural England
- Places for People
- Greater London Authority
- Surrey County Council
- East Sussex County Council
- West Kent Housing Association

The public consultation completed on the draft AQAP was undertaken in Spring 2022.

## **4.2 Consultation Outcomes**

The results of the consultation were...

### 4.3 Steering Group

A steering group was established at the start of the update process to drive forward the development of the new AQAP. The core aim of the steering group was to identify measures for inclusion within the AQAP that would be effective both in terms of reducing NO<sub>2</sub> concentrations and also feasible in terms of implementation and delivery.

Sevenoaks District Council set up a steering group in Summer 2021, chaired by the Environmental Health Manager. Membership of the group includes representatives from: Environmental Health, Development Control, Planning Policy, Net Zero Working Group, Parking Services, Direct Services, Economic Development, Communications Team and the Transformation and Strategy Team. This group meets quarterly alongside the Net Zero Working Group and is chaired by the Deputy Chief Executive and Chief Officer for Planning and Regulatory Services. The group reports progress via the Cleaner and Greener Advisory Committee.

## 5 Indicative AQAP Measures

Table 5.1 shows the Sevenoaks District Council indicative AQAP measures to be considered. It contains:

- a list of the actions that form part of the plan
- the responsible individual and departments/organisations who will deliver this action
- estimated cost of implementing each action (overall cost and cost to the local authority)
- expected benefit in terms of pollutant emission and/or concentration reduction
- the timescale for implementation
- how progress will be monitored

**NB:** Please see future ASRs for regular annual updates on implementation of these measures

Table 5.1 – Air Quality Action Plan Measures

Measure No.	Measure	Category	Classification	Lead Authority	Planning Phase	Implementation Phase	Key Performance Indicator	Target Pollution Reduction in the AQMA	Progress to Date	Estimated Completion Date	Initial Thoughts/Comments
1	Local Plan policy and guidance	Policy Guidance and Development Control	Air Quality Planning and Policy Guidance	SDC / KCC	2021	Local Plan progress – Local Development Scheme	Implementation of policy	NO <sub>2</sub> Whilst guidance already exists, it is important to keep these up-to-date as policies and strategies evolve.	Draft policies and allocations	Local Plan timetable: Adoption 2024 Local Plan dated to 2040	Guidance is already provided to developers on a case by case basis.  The emerging Local Plan will include a policy on Air Quality.  Air Quality will be considered in the site selection for allocations.
	Junction improvements at Bat & Ball and the A224/A25 in Riverhead	Traffic Management	UTC, Congestion management, traffic reduction	SDC	2021	Local Plan	Reduction in NO <sub>2</sub> concentrations	NO <sub>2</sub> To be confirmed if considered for further assessment.	Draft policies and allocations Transport evidence base	Local Plan timetable: Adoption 2024	Bat & Ball junction is currently under review by KCC..  Difficulties in improving A224/A25 junction in Riverhead, however, could benefit from further assessment.  The Local Plan will consider the impact of development on these junctions and potential improvements.
3	Road improvements along the A225 in Sevenoaks High Street, A25 in Seal, and the A25 in Brasted	Traffic Management	UTC, Congestion management, traffic reduction	SDC	2021		Reduction in NO <sub>2</sub> concentrations	NO <sub>2</sub> To be confirmed if considered for further assessment.	SDC working with KCC	Ongoing	Sevenoaks Town centre was previously considered to be made one way however was later discounted.  Councillors raised concerns about traffic entering and exiting Knole Park

Sevenoaks District Council

Measure No.	Measure	Category	Classification	Lead Authority	Planning Phase	Implementation Phase	Key Performance Indicator	Target Pollution Reduction in the AQMA	Progress to Date	Estimated Completion Date	Initial Thoughts/Comments
4	Bike rental schemes	Transport Planning and Infrastructure	Public cycle hire scheme	SDC	2021		Number of bikes available and rentals	NO <sub>2</sub> Small impact upon NO <sub>2</sub> concentrations from measure individually, estimated to be less than 1µg/m <sup>3</sup> based upon a low to medium uptake.	Feasibility work	Linked to Net Zero 2030	Currently being considered for feasibility
5	Promotion of active travel schemes	Promoting Travel Alternatives	Promotion of cycling	SDC	2021		Number of promotion events	NO <sub>2</sub> Measure is more an awareness raising tool to encourage uptake and use of existing schemes	Movement Strategy to be adopted Spring 2022 Recruitment of an Air Quality Promotions Officer	Part of the Net Zero 2030 work	Consider promoting to a wider audience as part of the Movement Strategy and the Net Zero 2030 work
6	Development of new walking and cycle routes	Transport Planning and Infrastructure	Cycle network	SDC / KCC	2021		Completion of cycle routes	NO <sub>2</sub> Small impact upon NO <sub>2</sub> concentrations from measure individually, estimated to be less than 1µg/m <sup>3</sup> based upon a low to medium uptake.	Procurement stages	LCWIP for SUA 2022/23	The first Local Cycling and Walking Infrastructure Plan for Sevenoaks Urban Area in early stages. Expected to be completed during 2022  LCWIPs will be prepared for other parts of the District.
7	District wide promotion of active travel	Promoting Travel Alternatives	Intensive active travel campaign & infrastructure	SDC	2021		Number of promotion events	NO <sub>2</sub> Measure to increase public awareness	Movement Strategy to be adopted Spring 2022 Recruitment of an Air Quality Promotions Officer	Part of the Net Zero 2030 work	Part of the Movement Strategy and the Net Zero 2030 work



## Sevenoaks District Council

Measure No.	Measure	Category	Classification	Lead Authority	Planning Phase	Implementation Phase	Key Performance Indicator	Target Pollution Reduction in the AQMA	Progress to Date	Estimated Completion Date	Initial Thoughts/Comments
8	Behavioural change campaigns to reduce single use occupancy car journeys	Public Information	Other	SDC	2021		Number of campaigns	NO <sub>2</sub> Measure to increase public awareness	Recruitment of an Air Quality Promotions Officer	Part of the Net Zero 2030 work	Would need to consider how best to reach audiences
9	Reducing vehicle idling	Traffic Management	Anti-idling enforcement	SDC	2021		Reduction in NO <sub>2</sub> concentrations	NO <sub>2</sub> Measure largely to increase public awareness, but will help reduce pollutant levels in key hotspot areas	Recruitment of an Air Quality Promotions Officer	Part of the Net Zero 2030 work	Could be cost effective, especially if focused around primary schools
10	Educational campaigns for schools	Public Information	Other	KCC	2021		Number of campaigns	NO <sub>2</sub> Measure to increase public awareness	Recruitment of an Air Quality Promotions Officer		DEFRA grant has been received in Kent for the production of educational resources.
11	Collaboration with bus operators to introduce ultra-low emission vehicles into the fleets	Vehicle Fleet Efficiency	Promoting Low Emission Public Transport	KCC	2021		Fleet composition	NO <sub>2</sub> To be confirmed if considered for further assessment. NO <sub>x</sub> emission reduction will be able to be calculated annually depending on the change in fleet composition	Initial discussions with KCC following the national bus strategy		Working with KCC to consider how we can work together to bring forward low emission schemes
12	Transitioning the Council's fleet to low emission vehicles	Promoting Low Emission Transport	Company Vehicle Procurement - Prioritising uptake of low emission vehicles	SDC / KCC	2021		Fleet composition	NO <sub>2</sub> To be confirmed if considered for further assessment. NO <sub>x</sub> emission reduction will be able to be calculated annually depending on the change in fleet composition	Part of the recently published Low Emission and Electric Vehicle Strategy	Part of the Net Zero 2030 work	Part of the recently published Low Emission and Electric Vehicle Strategy  Vehicle Replacement Plan to be considered by Members in 2022

## Sevenoaks District Council

Measure No.	Measure	Category	Classification	Lead Authority	Planning Phase	Implementation Phase	Key Performance Indicator	Target Pollution Reduction in the AQMA	Progress to Date	Estimated Completion Date	Initial Thoughts/Comments
13	Improving and developing the EV infrastructure within the district	Promoting Low Emission Transport	Procuring alternative Refuelling infrastructure to promote Low Emission Vehicles, EV recharging, Gas fuel recharging	SDC / KCC	2021		Number of EV charging points	NO <sub>2</sub> Small impact upon NO <sub>2</sub> concentrations from measure individually, estimated to be less than 1µg/m <sup>3</sup> based upon a low to medium uptake.	Part of the recently published Low Emission and Electric Vehicle Strategy	Part of the Net Zero 2030 work	Part of the recently published Low Emission and Electric Vehicle Strategy  EV Technical Study to be undertaken in 2022
14	Installing EV charging points within all Council owned carparks	Promoting Low Emission Transport	Procuring alternative Refuelling infrastructure to promote Low Emission Vehicles, EV recharging, Gas fuel recharging	SDC / KCC	2021		Number of EV charging points	NO <sub>2</sub> Small impact upon NO <sub>2</sub> concentrations from measure individually, estimated to be less than 1µg/m <sup>3</sup> based upon a low to medium uptake.	Part of the recently published Low Emission and Electric Vehicle Strategy	Part of the Net Zero 2030 work	Part of the recently published Low Emission and Electric Vehicle Strategy
15	Improving public transport infrastructure	Transport Planning and Infrastructure	Public transport improvements- interchanges stations and services	KCC	2021		Public transport usage	NO <sub>2</sub> Small impact upon NO <sub>2</sub> concentrations from measure individually, estimated to be less than 1µg/m <sup>3</sup> based upon a low to medium uptake.	Movement Strategy to be adopted Spring 2022	Ongoing	Continue working with KCC
16	Promote the use of public transport	Promoting Travel Alternatives	Promote use of rail and inland waterways	SDC	2021		Number of promotional events	NO <sub>2</sub> Measure is more an awareness raising tool to encourage uptake and use of available infrastructure	Recruitment of an Air Quality Promotions Officer	Ongoing	Public transport within SDC is fragmented, but initiatives are currently underway to encourage use of rail (Rail Projects Community Officer has been employed).

Sevenoaks District Council

Measure No.	Measure	Category	Classification	Lead Authority	Planning Phase	Implementation Phase	Key Performance Indicator	Target Pollution Reduction in the AQMA	Progress to Date	Estimated Completion Date	Initial Thoughts/Comments
17	On and off-street parking charges linked to vehicle emissions standards	Promoting Low Emission Transport	Priority parking for LEV's	SDC	2021		Number of discounted permits	NO <sub>2</sub> Small impact upon NO <sub>2</sub> concentrations from measure individually, estimated to be less than 1µg/m <sup>3</sup> based upon a low to medium uptake.	Residential on-street permits are already discounted for hybrid vehicles.	Part of the Net Zero 2030 work	Residential on-street permits are already discounted for hybrid vehicles.
18	Car Club / Sharing schemes	Alternatives to private vehicle use	Car Clubs	SDC	2021		Number of car sharing individuals	NO <sub>2</sub> Small impact upon NO <sub>2</sub> concentrations from measure individually, estimated to be less than 1µg/m <sup>3</sup> based upon a low to medium uptake.	Movement Strategy to be adopted Spring 2022	Ongoing – Local Plan dated to 2040	Car Club schemes to be encouraged in new development through the Local Plan.  Included within the Movement Strategy
19	Exploring flexible working and home working	Promoting Travel Alternatives	Facilitate flexible and home-working	SDC	2021		Levels of home working	NO <sub>2</sub> Measure to increase public awareness	Initial Local Plan work	Ongoing	Local Plan to facilitate flexible working options.  Working with businesses to explore how flexible working can contribute to reducing emissions
20	Working to school incentives/encouragement	Promoting Travel Alternatives	School Travel Plans	SDC	2021		Reduction in school vehicle drop-offs / pick-ups	NO <sub>2</sub> Measure to increase public awareness	Recruitment of an Air Quality Promotions Officer	Part of the Net Zero 2030 work	Could have a big impact and is supported by Councillors

Sevenoaks District Council

Measure No.	Measure	Category	Classification	Lead Authority	Planning Phase	Implementation Phase	Key Performance Indicator	Target Pollution Reduction in the AQMA	Progress to Date	Estimated Completion Date	Initial Thoughts/Comments
21	Complete a detailed modelling assessment of the Swanley Area to quantify the local air quality	Traffic Management	Other	SDC	2021/2022	2022	Completion of the report			2022	A number of developments are due to take place in and near to Swanley, therefore understanding the existing air quality will help inform planning decision making.
22	Hire an Air Quality Promotions Officer	Public Information	Other	SDC	2021	2022	Vacancy fulfilled			2022	This role will be specific to focusing efforts on achieving the measures as set out within this action plan.

# Appendix A: Response to Consultation

Table A.1 – Summary of Responses to Consultation and Stakeholder Engagement on the AQAP

Consultee	Category	Response
e.g. Chamber of Commerce	Business	E.g. Disagree with plan to remove parking on High Street in favour of buses and cycles; consider it will harm business of members.

# Appendix B: Reasons for Not Pursuing Action Plan Measures

Table B.1 – Action Plan Measures Not Pursued and the Reasons for that Decision

Action category	Action description	Reason action is not being pursued (including Stakeholder views)
Active Travel Campaigns	Permanent or temporary lane closures	Not considered to be appropriate unless supported by evidence of health and AQ benefit
Behavioural Change Campaigns	Provision of high quality, bespoke and accessible information on sustainable travel, e.g. on a dedicated travel website with route/mode options	SDC are not the highways authority and therefore have limited resources for a dedicated resource. However, SDC will work with KCC to deliver the priorities in the AQAP and the Movement Strategy which include encouraging behaviour change.
Behavioural Change Campaigns	Encourage home working	Although hybrid working is being trialled at SDC, it is not considered appropriate for the District Council to dictate to businesses a mode of operation.  An action on encouraging flexible working has been included this could include home working, but also local offices, flexible work hours/commuting times etc. SDC will work with the business community to help reduce emissions.
Behavioural Change Campaigns	District wide Clean Air Days	Would need a very light touch and alternative transport would be necessary.  The Net Zero 2030 communications plan includes promotion of sustainable transport events including Car Free Day.
Low Emission Vehicle Encouragement	HGV/LGV recognition schemes, ECO Stars	SDC do not have the expertise or resources to run this scheme independently, however we will work with KCC to

		reduce emissions from transport and increase the uptake of low emission vehicles.
Low Emission Vehicle Encouragement	Detection and prosecution of vehicles removing diesel particle filter	SDC do not have the resources or expertise to run this scheme
Public Transport Encouragement	Council funding to provide free buses for all schools	KCC Controlled- SDC does not have funding available. We will work with schools and KCC to encourage sustainable transport and active travel.
Public Transport Encouragement	Park and Ride Schemes	Park and Ride schemes have previously been explored and have not been feasible. No such schemes have been included in the Local Plan at this stage.
General Travel Planning Improvements	Business delivery time variations away from peak hours	Unaware of any specific issues that result from delivery times. However, the Local Plan may require mitigation measures for new commercial development if necessary and appropriate.



## Appendix C: Add Additional Appendices as Required>

### INSTRUCTIONS

The Council should add additional supporting appendices as required.

For example, where the selection of AQAP measures has been supported by further studies, e.g. quantitative appraisal of action plan measures through dispersion modelling, or other feasibility studies, this work should be included here.



## Glossary of Terms

Abbreviation	Description
AQAP	Air Quality Action Plan - A detailed description of measures, outcomes, achievement dates and implementation methods, showing how the local authority intends to achieve air quality limit values'
AQMA	Air Quality Management Area – An area where air pollutant concentrations exceed / are likely to exceed the relevant air quality objectives. AQMAs are declared for specific pollutants and objectives
AQS	Air Quality Strategy
ASR	Air quality Annual Status Report
Defra	Department for Environment, Food and Rural Affairs
EU	European Union
LAQM	Local Air Quality Management
NO <sub>2</sub>	Nitrogen Dioxide
NO <sub>x</sub>	Nitrogen Oxides
PM <sub>10</sub>	Airborne particulate matter with an aerodynamic diameter of 10µm (micrometres or microns) or less
PM <sub>2.5</sub>	Airborne particulate matter with an aerodynamic diameter of 2.5µm or less
SDC	Sevenoaks District Council
KCC	Kent County Council
AQS	Air Quality Strategy

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