Sevenoaks
District Council

Air Quality Action Plan

In fulfilment of Part IV of the
Environment Act 1995
(as amended)
Local Air Quality Management

April 2022

www.sevenoaks.gov.uk/airquality

Sevenoaks
DISTRICT COUNCIL

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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_2 annual mean objective;
- AQMA No.10 (Sevenoaks High Street) - An area encompassing Sevenoaks High Street and London Road. Declared for exceedances of the NO_2 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_2 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_2 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[1,2].

The annual health cost to society of the impacts of particulate matter alone in the UK is estimated to be around £16 billion[3]. 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

[1] Environmental equity, air quality, socioeconomic status and respiratory health, 2010
[2] Air quality and social deprivation in the UK: an environmental inequalities analysis, 2006
[3] Defra. Abatement cost guidance for valuing changes in air quality, May 2013

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 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 update 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 exasperate 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:

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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 2021 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.

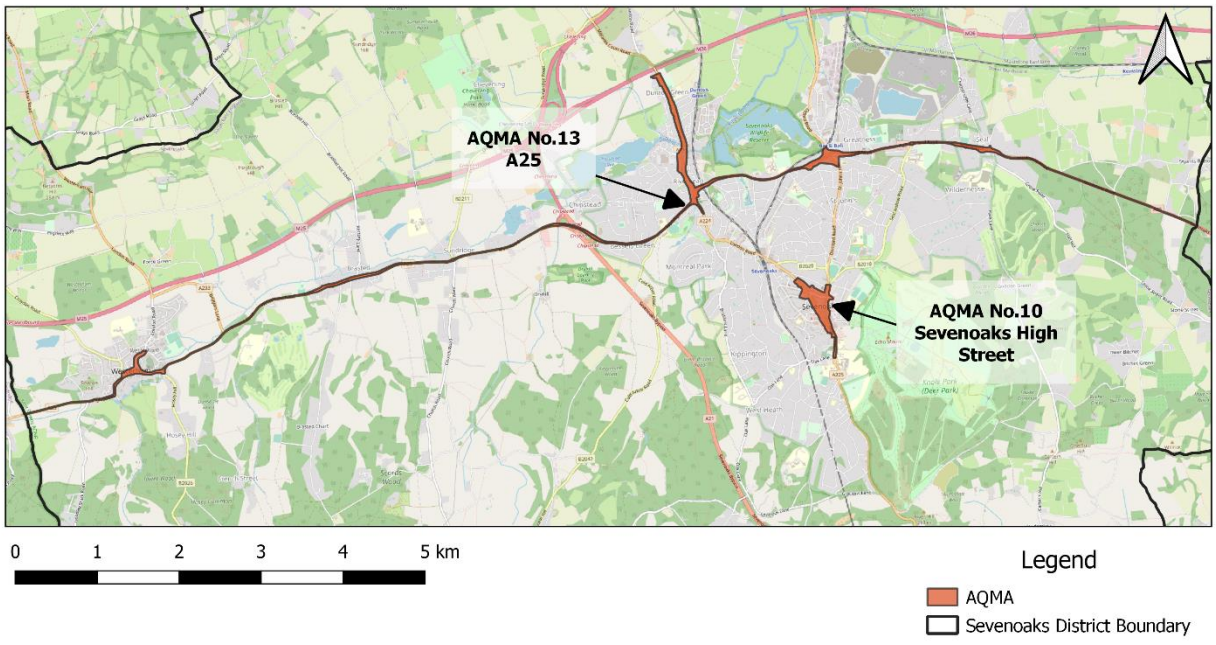
This Plan focuses on actions to improve air quality across the entire district, with a specific focus on four AQMAs declared by Sevenoaks District Council. Five AQMAs are planned for revocation following the acquisition of supporting monitoring data to verify modelled predictions and have therefore not 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_2 annual mean objective;
- AQMA No.10 (Sevenoaks High Street) - An area encompassing Sevenoaks High Street and London Road. Declared for exceedances of the NO_2 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_2 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_2 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[4]. The main source of air pollution within the district originates from vehicular emissions of nitrogen dioxide (NO_2) 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.

AQMA No.8 Swanley Town Centre

AQMA No.8 was designated in 2006 for exceedances of the annual mean NO_2 objective. The current boundary covers Swanley Town Centre and along the B2173 London Road up to the M20.

Note: Exceedances of the NO_2 annual mean AQS objective are in **bold**

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

Figure 2.2 shows the extent of this AQMA.

There are 3 existing monitoring locations within the boundary of AQMA No.8. The annual mean NO_2 concentration over the past 5 years are presented in Table 2.1.

- Concentrations have largely been decreasing since 2016.
- Following distance correction, the predicted annual mean NO_2 concentrations are below the AQS objective in all years reported.

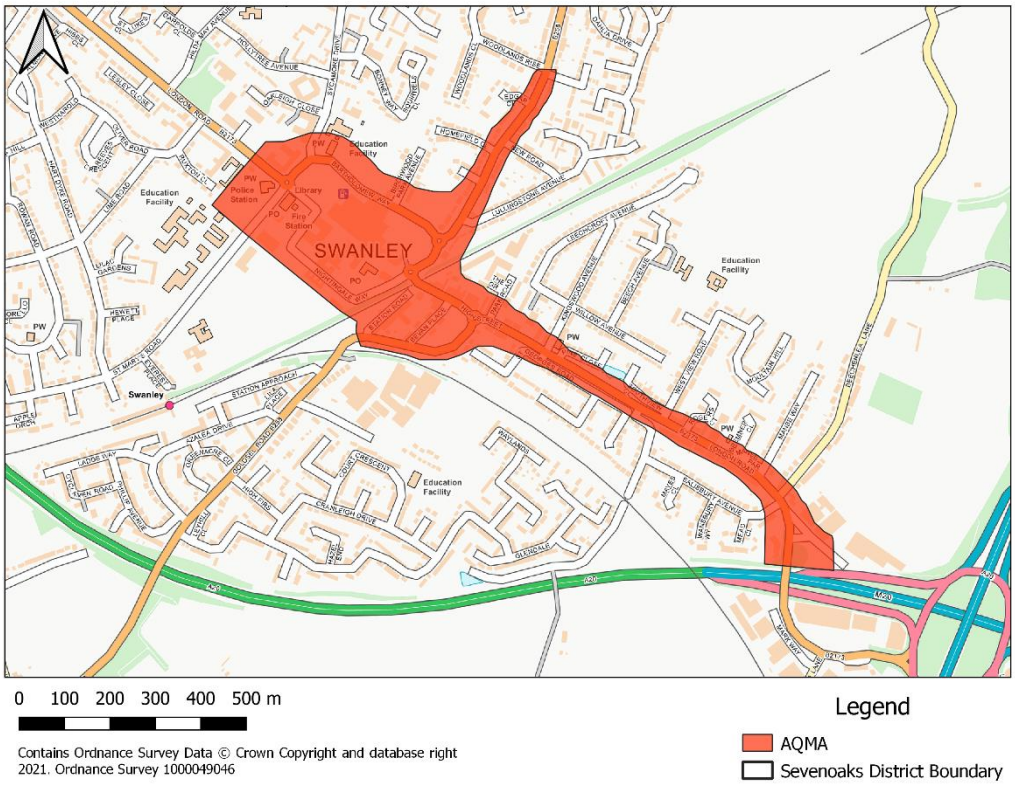
This AQMA was not included within the detailed modelling assessment due to a lack of available traffic data.

Table 2.1 – AQMA No.8 Annual Mean NO_2 Concentrations

Site ID	X OS Grid Ref.	Y OS Grid Ref.	Site Type	Annual mean NO_2 concentration ($\mu g/m^3$)				
				2016	2017	2018	2019	2020
DT39	551492	168695	Roadside	**40.9**	34.5	36.4	34.8	28.1
DT40	551575	168508	Kerbside	**51.5**	**40.9**	**45.6**	37.5	28.4
DT41	552174	168162	Roadside	**42.7**	**40.1**	38.6	32.6	27.2

Note: Exceedances of the NO_2 annual mean AQS objective are in **bold**

Figure 2.2 – Map of AQMA No.8 Swanley Town Centre



AQMA No.10 Sevenoaks High Street

AQMA No.10 was designated in 2006 for exceedances of the annual mean NO_2 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 2.3.

There are 7 existing monitoring locations within the current boundary of AQMA No.10. The annual mean NO_2 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_2 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_2 Concentrations

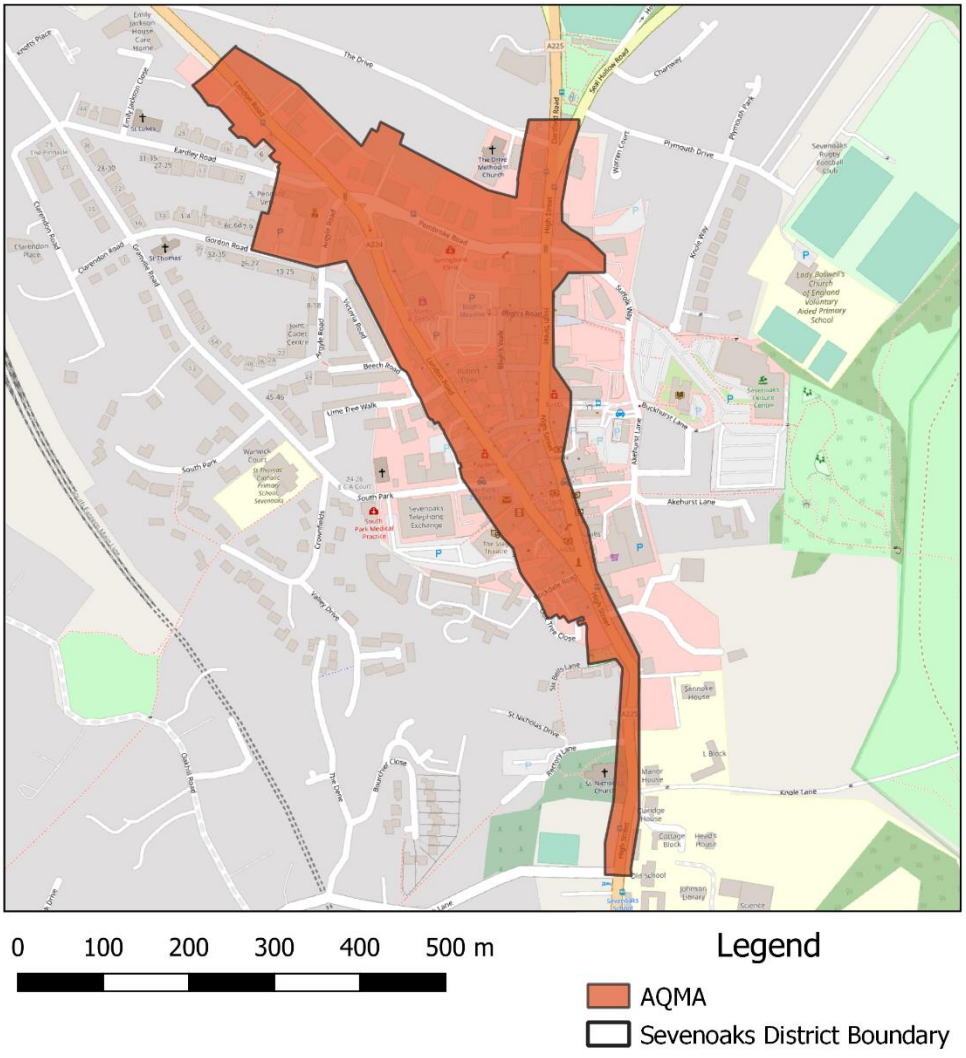
Site ID	X OS Grid Ref.	Y OS Grid Ref.	Site Type	Annual mean NO_2 concentration (µg/m^3)				
				2016	2017	2018	2019	2020
DT02	553157	154415	Roadside	**54.7**	**48.1**	**49.9**	**40.4**	29.6
DT27	553139	154259	Roadside	39.8	38.2	37.7	33.2	21.6
DT28	553043	154890	Kerbside	**44.1**	36.7	36.8	31.5	23.5
DT29	553073	155026	Roadside	31.5	28.0	28.2	23.7	17.6
DT48	552863	154873	Roadside	27.7	**40.7**	23.9	20.0	13.6
DT49	553018	154654	Roadside	33.7	28.2	29.1	25.1	17.2
DT51	552662	155153	Kerbside	**40.4**	35.1	39.0	30.2	22.3

Note: Exceedances of the NO2 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^3 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 40µg/m^3.

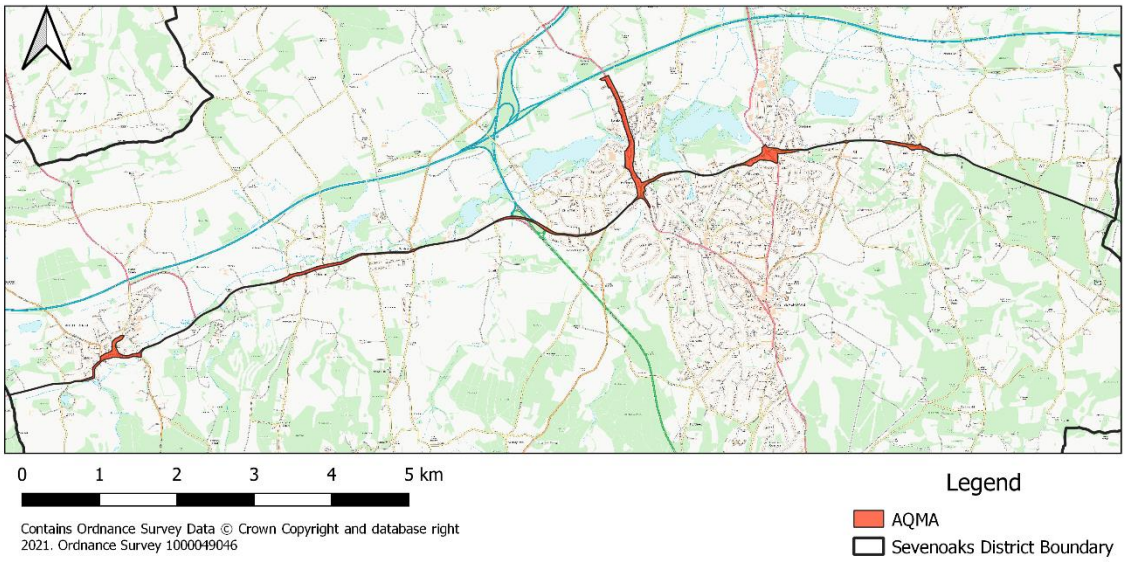
Figure 2.3 – Map of AQMA No.10 Sevenoaks High Street



AQMA No.13 A25

AQMA No.13 has been declared since 2014 for exceedances of the annual mean 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. Figure 2.3 shows the full extent of this AQMA.

Figure 2.4 – 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_2 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_2 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^3).
- 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 A25 Bradbourne Vale Road approaching the Riverhead junction.

Table 2.3 – AQMA No.13 Annual Mean NO_2 Concentrations

Site ID	X OS Grid Ref.	Y OS Grid Ref.	Site Type	Annual mean NO_2 concentration ($\mu g/m^3$)				
				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

Site ID	X OS Grid Ref.	Y OS Grid Ref.	Site Type	Annual mean NO_2 concentration ($\mu g/m^3$)				
				2016	2017	2018	2019	2020
DT77	551529	155967	Roadside	**40.0**	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	**51.1**	**43.9**	**43.7**	35.7	31.5
DT86	550308	155593	Roadside	**40.8**	36.0	34.7	30.7	21.1
DT87	551640	156335	Roadside	**51.7**	**45.7**	**47.0**	**42.3**	35.7
DT88	552963	156583	Roadside	32.9	28.7	30.3	28.1	20.7

Note: Exceedances of the NO_2 annual mean AQS objective are in **bold**

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.

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

AQMA No.14 was designated in 2014 for exceedances of the annual mean NO_2 objective. The current boundary covers the junction of Birchwood Road and London Road in Swanley, as shown in Figure 2.5.

There are 3 existing monitoring locations within or near to the boundary of AQMA No.14. The annual mean NO_2 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_2 concentrations continue to be exceeding in 2016, 2017 and 2018.

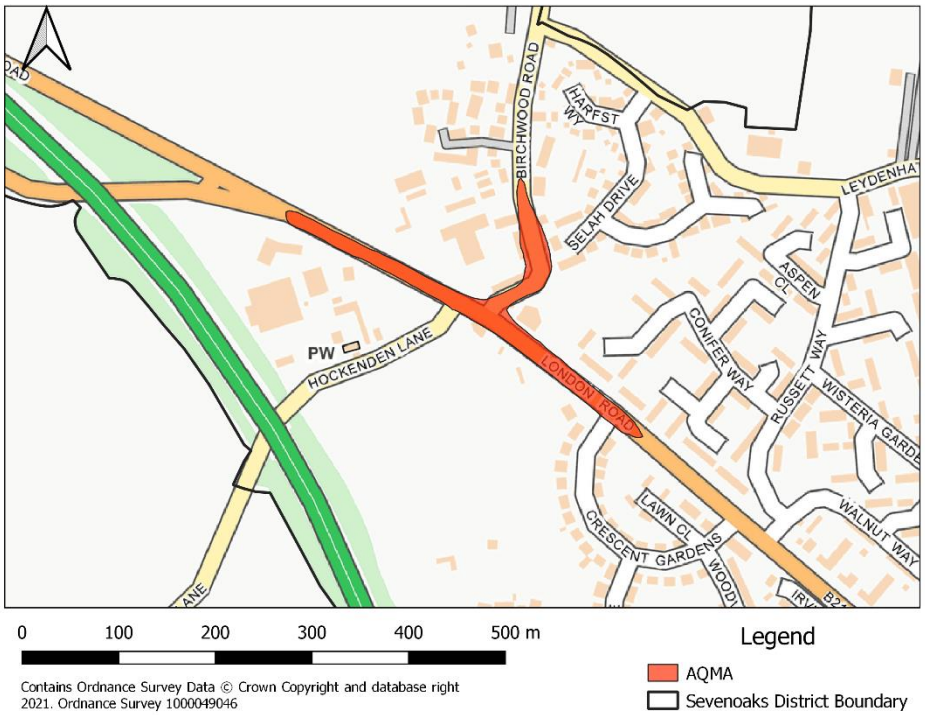
Table 2.4 – AQMA No.14 Annual Mean NO_2 Concentrations

Site ID	X OS Grid Ref.	Y OS Grid Ref.	Site Type	Annual mean NO_2 concentration ($\mu g/m^3$)				
				2016	2017	2018	2019	2020
DT83	550297	169682	Roadside	**60.5**	**49.8**	**46.7**	**42.4**	**33.3**
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

Note: Exceedances of the NO_2 annual mean AQS objective are in **bold**

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

Figure 2.5 – 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_x) vehicle contributors to be identified. NO_x are predominantly emitted into the atmosphere in the form of nitric oxide (NO) which is then converted to nitrogen dioxide (NO_2) through chemical processes in the atmosphere. Under most atmospheric conditions, the dominant pathway for NO_2 formation is via the reaction of NO with ozone (O_3).

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_2, PM_{10} and $PM_{2.5}$ (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[5], 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

[5] Marilena Kampa and Elias Castanas, Human Health Effects of Air Pollution, June 2007

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 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_2, there is an increasing focus on fine particulate matter. $PM_{2.5}$ is a pollutant of concern meaning particulate matter which is 2.5 microns or less in diameter. The AQMA has not been declared for $PM_{2.5}$ and the modelling as part of the detailed assessment has shown predicted levels below the annual mean objective of 25µg/m³.

The Public Health Outcomes Framework data tool compiled by Public Health England quantifies the mortality burden of $PM_{2.5}$ within England on a county and local authority scale. The 2019 fraction of mortality attributable to $PM_{2.5}$ 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 ($PM_{2.5}$) for which stronger scientific evidence on links with mortality exist, and not NO_2, 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_2 exceeding the annual mean objectives, as well as the hourly-mean objective in some areas. Levels of PM_{10} are currently shown to comply with the AQS objectives. Evidence continues to show that there is no real safe threshold for $PM_{2.5}$ and the UK government should achieve reductions in levels of $PM_{2.5}$ as low as reasonably practicable below the current air quality standard. Monitoring of $PM_{2.5}$ 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_2 will have co-benefits in additionally reducing concentrations of PM_{10} and $PM_{2.5}$.

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[6] 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:

[6] Department for Environment, Food and Rural Affairs (2019), Clean Air Strategy

- 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;
- 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_2 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)[7] is the UK governments plan for bringing concentrations of NO_2 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_2 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_2 concentrations on road links identified by the national Pollutant Climate Mapping (PCM) model as being in exceedance of the NO_2 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_x emissions from vehicles, and therefore lower NO_2 concentrations. The actions detailed within the UK Plan include the following:

- Implementation of Clean Air Zones (CAZs);

[7] Department for Environment, Food and Rural Affairs, Department for Transport (2017), UK Plan for Tackling Roadside Nitrogen Dioxide Concentrations (Detailed Plan)

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

3.2.3 Sevenoaks District Council Plan

The Council Plan[8] 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[9] (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 polices 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

[8] The Council Plan
[9] Core Strategy

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:

"*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.

3.2.5 Sevenoaks District Strategy for Transport

The Sevenoaks District Strategy for Transport 2010 – 2016[10] 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 a 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

[10] Strategy for Transport

- 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

- 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[11] 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.

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.

[11] Sevenoaks District Transport Assessment

- 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.

3.2.6 Sevenoaks District Cycling Strategy

The Sevenoaks District Cycling Strategy[12] 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

[12] Cycling Strategy

3.2.7 Net Zero 2030

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

Kent has committed to becoming Net Zero by 2050 as per the Kent & Medway Energy and Low Emissions Strategy

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.

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.

3.2.8 Low Emission and Electric Vehicle Strategy

The Low Emission and Electric Vehicle Strategy for Sevenoaks District Council[13] 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

[13] Low Emission and Electric Vehicle Strategy

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_2 are dominated by a combination of direct NO_2 (f-NO_2) and oxides of nitrogen (NOx), the latter of which is chemically unstable and rapidly oxidised upon release to form NO_2. Reducing levels of NOx emissions therefore reduces levels of NO_2. As a consequence, the source apportionment study has considered the emissions of NOx which are assumed to be representative of the main sources of NO_2.

The following sections describe the source apportionment results in each of the AQMAs. A breakdown of NO_x is given according to vehicle class within the AQMAs and based on the following criteria:

- Contributions based on average NO_x levels across all monitored locations;
- Contributions based on NO_x levels across all modelled locations where NO_2 concentrations exceed 40µg/m^3 (where applicable); and
- Contributions based on NO_x levels at the highest NO_2 concentration receptor in the AQMA.

3.3.1 AQMA No.10 Sevenoaks High Street

Table 3.5 provides a breakdown in NO_x emissions according to vehicle class within AQMA No.10, with Figure 3.6 and Figure 3.7 illustrating the average NO_x emissions across all modelled receptors within AQMA No.10 where the modelled annual mean NO_2 concentration was greater than 40µg/m^3. Figure 3.6 shows the general breakdown, including the regional background, which the Council is unable to influence, the local background, which the Council should have some influence over, and the total road NO_x (explicitly modelled), which the Council should be able to directly influence with policy intervention.

At modelled locations where the annual mean NO_2 concentration exceeds 40µg/m^3, the average NO_x emissions are predominantly associated with diesel cars whereby they contribute 55.7% of the total road NO_x 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.

Specific measures identified to help reduce NO_x emissions from the main sources identified (predominantly diesel cars and LGVs) include road/junction improvements along the A225 Sevenoaks High Street in order to improve traffic flows and reduce congestion, promoting travel alternatives such as bike rental schemes and improving cycle infrastructure, improving public transport infrastructure and promoting active modes of travel in order to reduce the number of private vehicles being used throughout this AQMA. Additionally, by improving the Electric Vehicle infrastructure across the District, as well as transitioning the Council's fleet to low emissions vehicles, this will hopefully continue to encourage other road users to switch from diesel vehicles to cleaner, low or zero emissions vehicles.

Table 3.5 – NO_x 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				
Average across all modelled receptors											
NO_x Concentration ($\mu g/m^3$)	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_x	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_x	100.0%	8.0%	55.5%	0.0%	0.1%	24.6%	0.0%	5.9%	5.7%	0.2%	-
Average Across All Receptors With NO2 Concentration exceeding the AQS Annual Mean Objective											
NO_x Concentration ($\mu g/m^3$)	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_x	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_x	100.0%	8.0%	55.7%	0.0%	0.1%	24.4%	0.0%	5.9%	5.7%	0.2%	-
At the Receptor With the Maximum Road NOx Concentration (ID 32)											
NO_x Concentration ($\mu g/m^3$)	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_x	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_x	100.0%	8.3%	58.4%	0.0%	0.0%	21.8%	0.0%	4.8%	6.4%	0.2%	-

Figure 3.6 – Average NO_x Contribution General Breakdown, where Modelled Annual NO_2 Concentrations are >40µg/m^3 within AQMA No.10

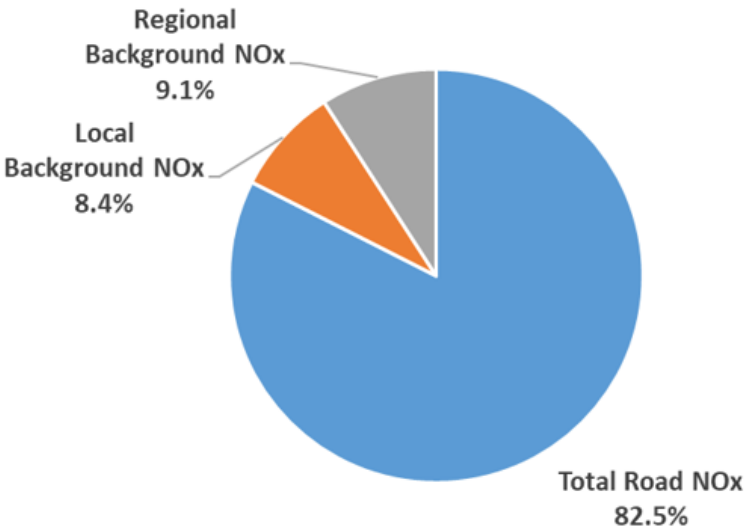
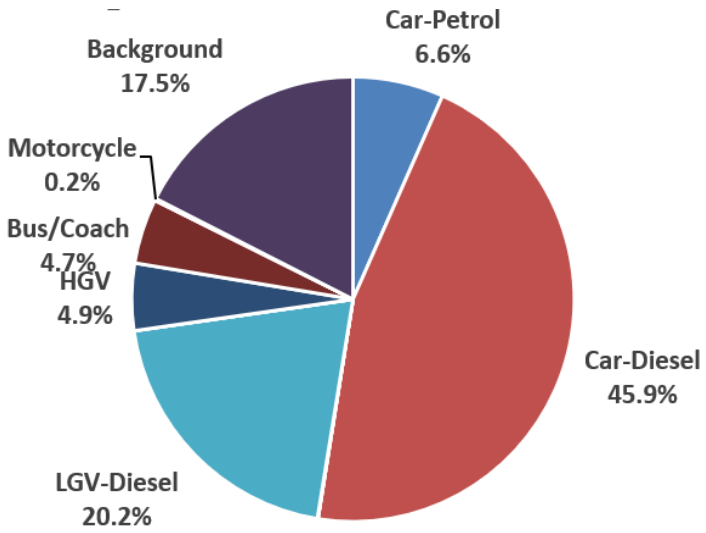


Figure 3.7 – Average NO_x Contribution by Vehicle Class, where Modelled Annual NO_2 Concentrations are >40µg/m^3 within AQMA No.10



3.3.2 AQMA No.13 A25

Table 3.6 provides a breakdown in NO_x emissions according to vehicle class within AQMA No.13, with Figure 3.8 and Figure 3.9 illustrating the average NO_x emissions across all modelled receptors within AQMA No.13 where the modelled annual mean NO_2 concentration was greater than 40µg/m^3. Figure 3.8 displays the general breakdown with the regional background, local background and explicitly modelled total road NO_x.

The majority of NO_x emissions at locations where annual average NO_2 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.

Similarly to AQMA No.10, specific measures to help reduce NO_x emissions from the predominant sources have been identified, and largely include encouraging a behavioural shift to using more active and sustainable modes of transport, but also to

switch to low or zero emissions vehicles. A number of congestion hotpots have been identified throughout AQMA No.13, therefore road/junction improvements at the Bat & Ball junction, A224/A25 in Riverhead, A25 in Seal and A25 in Brasted will be carried out in order to improve traffic flows and reduce congestion in these areas. The Council will also look to work with businesses, including HGV operators, to identify ways to reduce emissions from their activities.

Table 3.6 – NO_x 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				
Average across all modelled receptors											
NO_x Concentration ($\mu g/m^3$)	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_x	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_x	100.0%	6.3%	46.8%	0.0%	0.1%	30.7%	0.0%	12.6%	3.3%	0.2%	-
Average Across All Receptors With NO2 Concentration exceeding the AQS Annual Mean Objective											
NO_x Concentration ($\mu g/m^3$)	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_x	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_x	100.0%	6.5%	47.2%	0.0%	0.1%	29.2%	0.0%	13.2%	3.5%	0.2%	-
At the Receptor With the Maximum Road NOx Concentration (ID 268)											
NO_x Concentration ($\mu g/m^3$)	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_x	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_x	100.0%	7.0%	50.3%	0.0%	0.1%	28.9%	0.0%	11.9%	1.6%	0.2%	-

Figure 3.8 – Average NO_x Contribution General Breakdown, where Modelled Annual NO_2 Concentrations are >40µg/m^3 within AQMA No.13

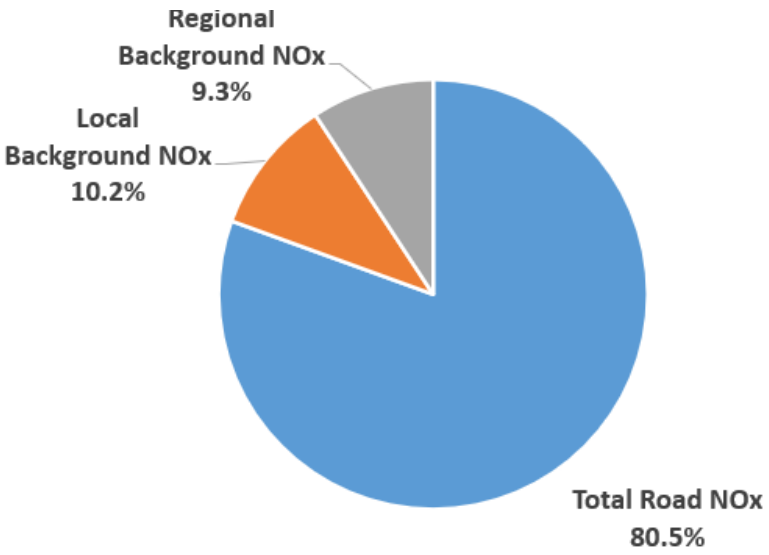
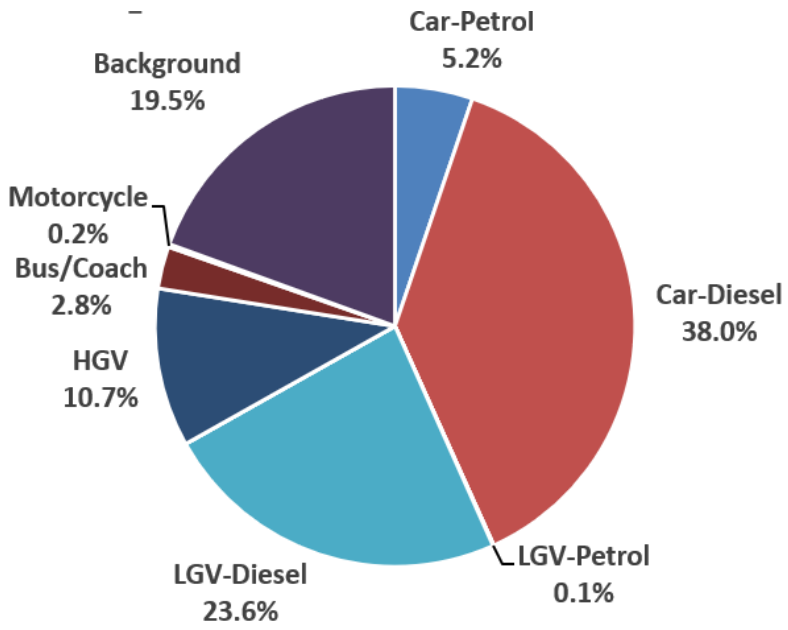


Figure 3.9 – Average NO_x Contribution by Vehicle Class, where Modelled Annual NO_2 Concentrations are >40µg/m^3 within AQMA No.13



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_x 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_x emissions from vehicles will in turn reduce NO_2

concentrations, there is a non-linear relationship between NO_x and NO_2 concentrations and therefore a greater relative reduction in NO_x may be required.

3.4.1 AQMA No.10 Sevenoaks High Street

The road NO_x concentration required to achieve an NO_2 concentration of 39.9µg/m^3 (therefore considered compliant) within AQMA No.10 at the worst-case receptor and across the entire AQMA is 59.0µg/m^3. The worst-case receptor within this AQMA is located along the High Street between Dorset Street and Locks Yard, which has a total road NO_x concentration of 121.9µg/m^3. The reduction in NO_x required to achieve compliance with the annual mean NO_2 objective of 40µg/m^3 at this location is therefore **62.9µg/m^3**, **51.6%** of the current total road NO_x concentration.

Across all modelled receptors where an annual average NO_2 concentration of 40µg/m^3 or greater was reported, there is an average total road NO_x concentration of 78.6µg/m^3. Therefore, a reduction of **19.6µg/m^3** NO_x is required (**25.0%** of the current total road NO_x), 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_x reduction of between 25% and 52% will have improvements on NO_2 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. To achieve an NO_2 concentration of 39.9µg/m^3, a NO_x concentration of 54.8µg/m^3 is required. The reduction in NO_x required to achieve compliance with the annual mean NO_2 objective at this location is therefore **53.1µg/m^3**, **49.2%** of the current total road NO_x.

Across all modelled receptors where the annual average NO_2 objective was exceeded, a NO_x concentration of 56.6µg/m^3 is required to achieve compliance. Therefore, a reduction of **19.6µg/m^3** NO_x emissions is required (**25.8%** of the current total road NO_x), however similarly as noted in Section 3.4.1, this will not achieve compliance at the worst-case location. A target NO_x reduction of between 26% and 49% is therefore required to have improvements on NO_2 concentrations throughout this AQMA.

3.5 Key Priorities

- **Priority 1 – Ensure and Maintain Compliance of AQS Objectives**
    - Within Sevenoaks District, as discussed in previous sections, there are currently exceedances of the annual mean NO_2 AQS objective being reported. The Council therefore intends to bring the entire district into compliance with all AQS objectives, and to maintain this once achieved.
- **Priority 2 – 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 3 - 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 4 - 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 exacerbate any areas of existing poor air quality and provide appropriate mitigation measures where this is unavoidable.
- **Priority 5 - 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 2021 requires local authorities to consult the bodies listed in Table 4.7.

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

Table 4.7 – 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.

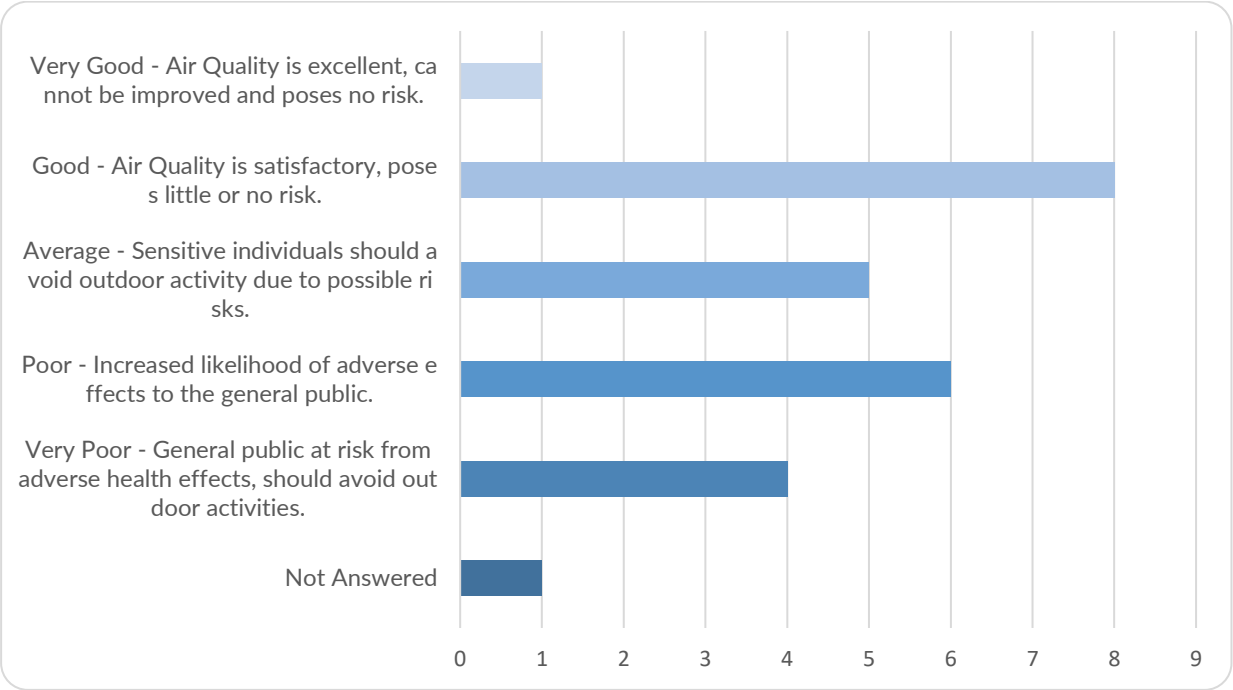
4.2 Consultation Outcomes

A consultation of the Air Quality Action Plan took place between 24 February 2022 and 24 March 2022. We received 25 responses through our engagement portal https://engagement.sevenoaks.gov.uk/net-zero/aqap a summary is shown below

What is your current view on Air Quality in Sevenoaks District?

There were 24 responses to this part of the question.

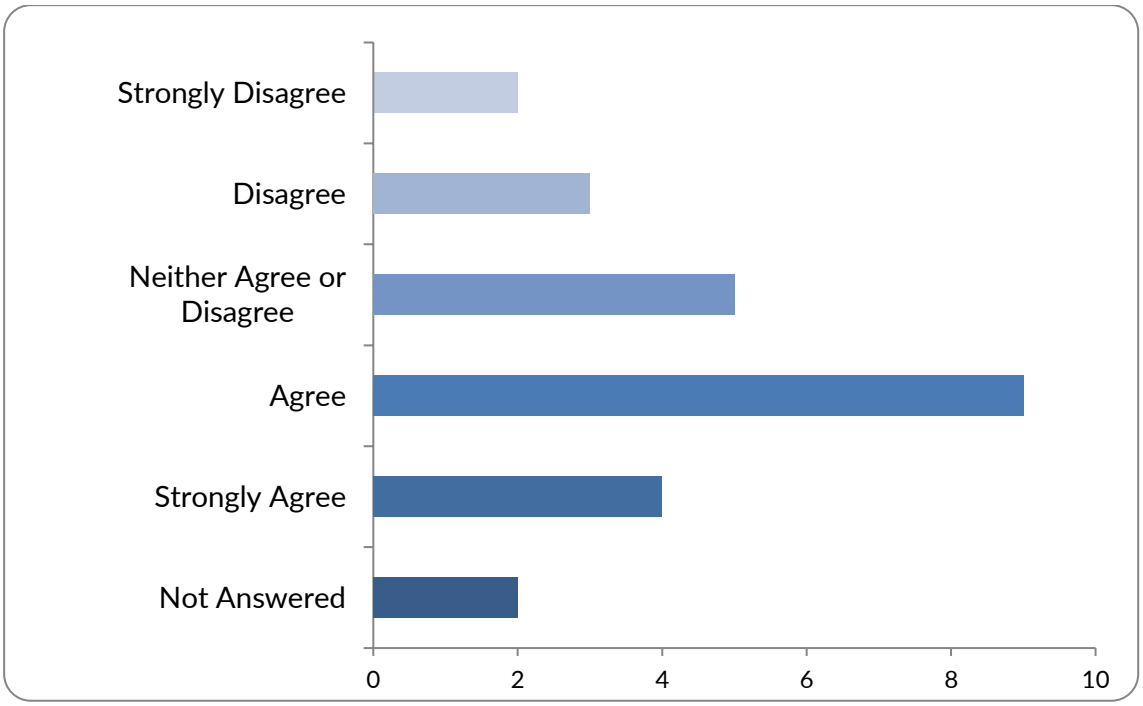
Air Quality within Sevenoaks is predominately viewed as good (32%) however responses have varied quite significantly based on location within the district, which highlights the need to prioritise specific areas with AQMA's.



Option	Total	Percent
Very Good - Air Quality is excellent, cannot be improved and poses no risk.	1	4%
Good - Air Quality is satisfactory, poses little or no risk.	8	32%
Average - Sensitive individuals should avoid outdoor activity due to possible risks.	5	20%
Poor - Increased likelihood of adverse effects to the general public.	6	24%
Very Poor - General public at risk from adverse health effects, should avoid outdoor activities.	4	16%
Not Answered	1	4%

The Sevenoaks Air Quality Action Plan has identified the areas of work needed to improve Air Quality in the District.

To what extent do you agree?



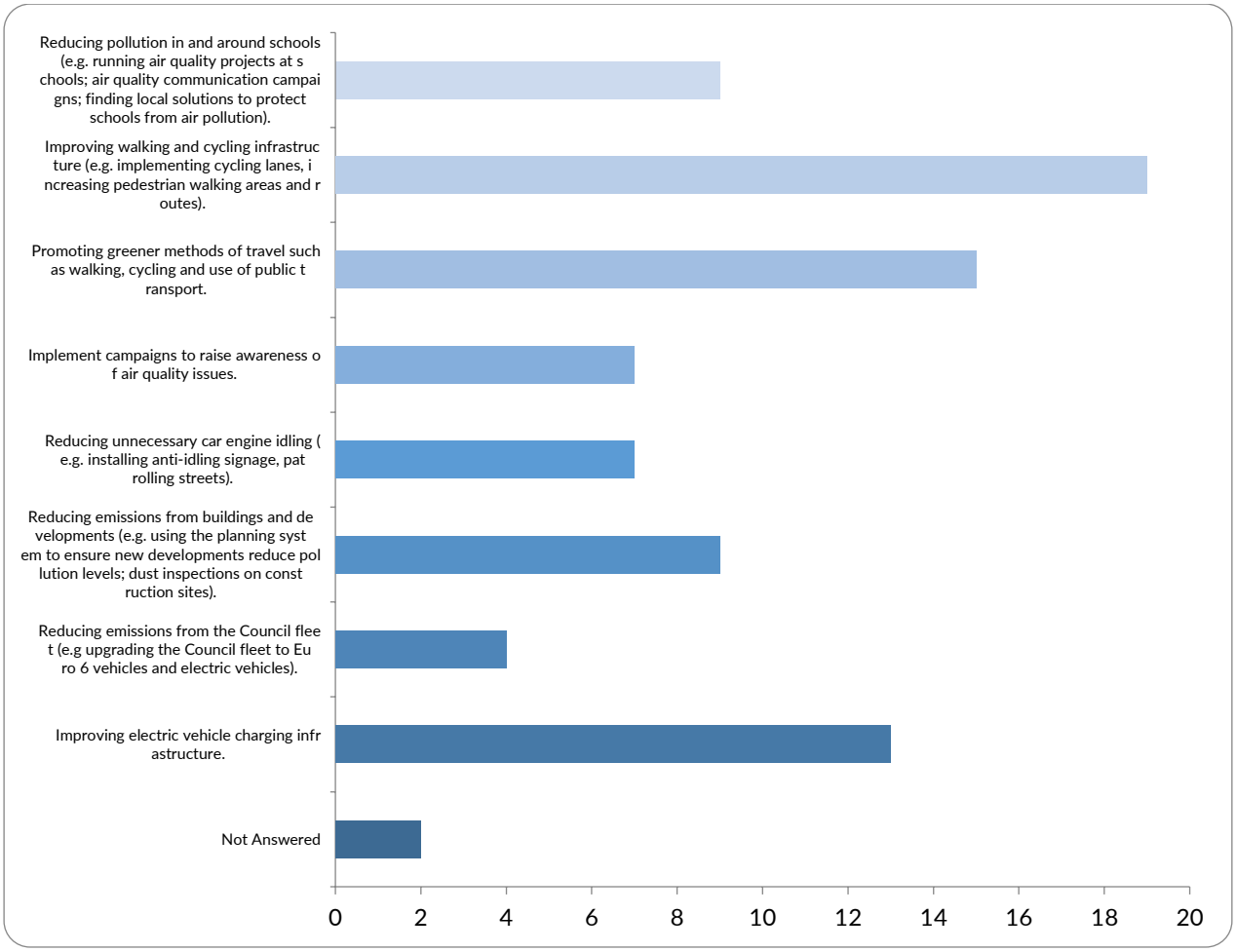
Option	Total	Percent
Strongly Disagree	2	8%
Disagree	3	12%
Neither Agree or Disagree	5	20%
Agree	9	36%
Strongly Agree	4	16%
Not Answered	2	8%

There were 23 responses to this part of the question.

Based on responses, the largest proportion of respondents (52%) believe the AQAP has identified the areas of work needed to improve air quality within the district.

However, responses did vary on this answer depending on location and personal preferences.

Which of the following areas do you think should be prioritised in the 2022-27 Air Quality Plan?



Option	Total	Percent
Reducing pollution in and around schools (e.g. running air quality projects at schools; air quality communication campaigns; finding local solutions to protect schools from air pollution).	9	36%
Improving walking and cycling infrastructure (e.g. implementing cycling lanes, increasing pedestrian walking areas and routes).	19	76%

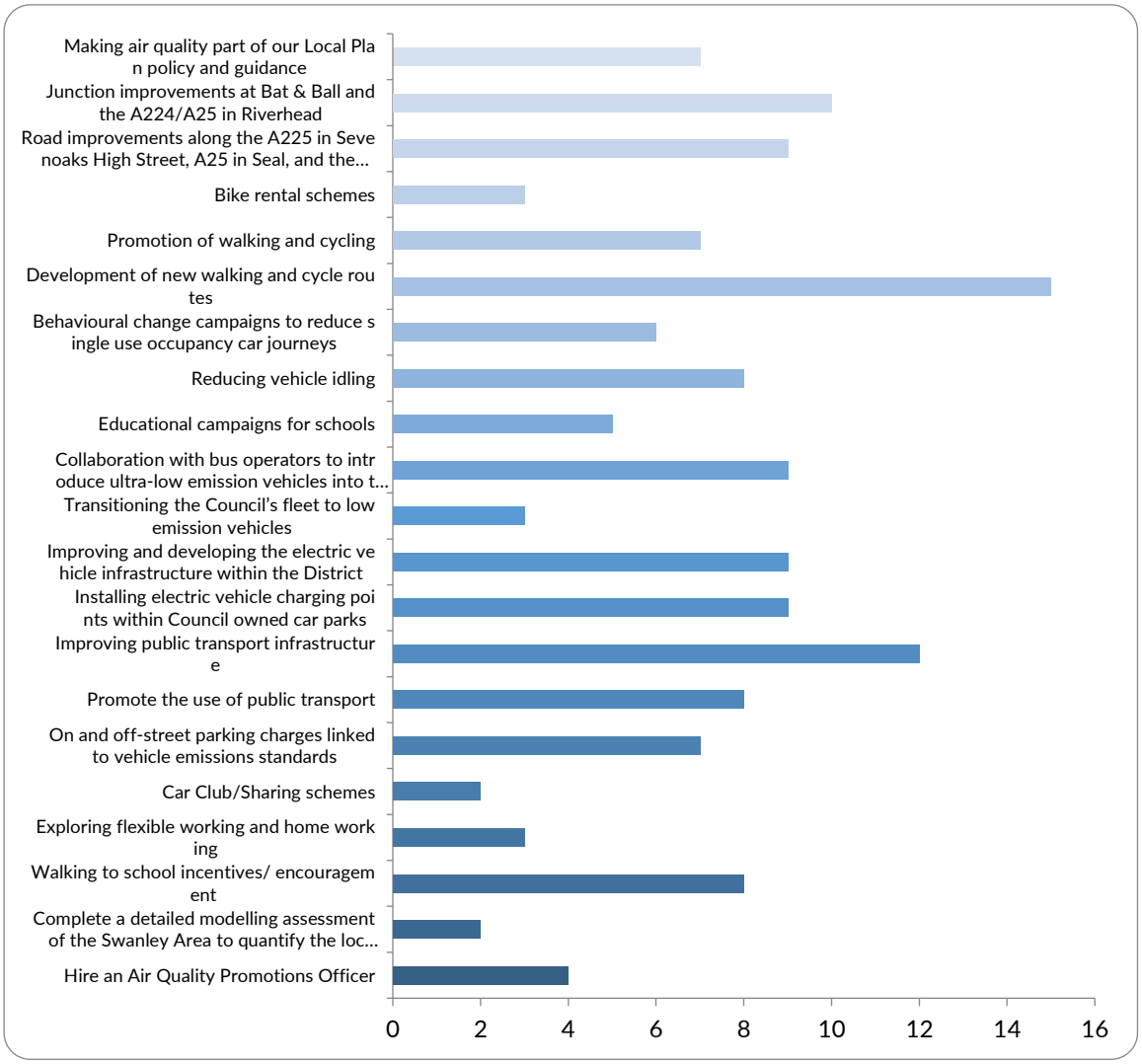
Option	Total	Percent
Promoting greener methods of travel such as walking, cycling and use of public transport.	15	60%
Implement campaigns to raise awareness of air quality issues.	7	28%
Reducing unnecessary car engine idling (e.g. installing anti-idling signage, patrolling streets).	7	28%
Reducing emissions from buildings and developments (e.g. using the planning system to ensure new developments reduce pollution levels; dust inspections on construction sites).	9	36%
Reducing emissions from the Council fleet (e.g upgrading the Council fleet to Euro 6 vehicles and electric vehicles).	4	16%
Improving electric vehicle charging infrastructure.	13	52%
Not Answered	2	8%

There were 23 responses to this part of the question.

Responses to this question were wide-ranging, although two were the most evident. These were improving walking and cycling infrastructure (76%) and promoting greener methods of travel (60%). These areas were also both commonly commented on throughout the consultation showing a clear demand for a focus on active travel and these areas in particular. There is also a strong desire amongst responses to see improvements in electric vehicle charging infrastructure (52%) which again has been highlighted throughout the consultation. The lowest responses were given to reducing emissions from council fleet vehicles (16%) showing this is not seen as a significant priority amongst respondents.

Which specific measures do you feel should be prioritised? (Tick all that apply)

There were 25 responses to this part of the question.



Option	Total	Percent
Making air quality part of our Local Plan policy and guidance	7	28%
Junction improvements at Bat & Ball and the A224/A25 in Riverhead	10	40%
Road improvements along the A225 in Sevenoaks High Street, A25 in Seal, and the A25 in Brasted	9	36%
Bike rental schemes	3	12%
Promotion of walking and cycling	7	28%
Development of new walking and cycle routes	15	60%

Option	Total	Percent
Behavioural change campaigns to reduce single use occupancy car journeys	6	24%
Reducing vehicle idling	8	32%
Educational campaigns for schools	5	20%
Collaboration with bus operators to introduce ultra-low emission vehicles into the fleets	9	36%
Transitioning the Council's fleet to low emission vehicles	3	12%
Improving and developing the electric vehicle infrastructure within the District	9	36%
Installing electric vehicle charging points within Council owned car parks	9	36%
Improving public transport infrastructure	12	48%
Promote the use of public transport	8	32%
On and off-street parking charges linked to vehicle emissions standards	7	28%
Car Club/Sharing schemes	2	8%
Exploring flexible working and home working	3	12%
Walking to school incentives/ encouragement	8	32%
Complete a detailed modelling assessment of the Swanley Area to quantify the local air quality	2	8%
Hire an Air Quality Promotions Officer	4	16%
Not Answered	0	0%

As highlighted previously, the largest responses are focused on prioritising active travel and the development of new walking and cycle routes (60%) throughout the district.

More than one response could be recorded for this question so we had a number of other measures also indicating a preference for priority. These included:

- Junction improvements at Bat & Ball and the A224/A25 in Riverhead (40%),
- Road improvements along the A225 in Sevenoaks High Street, A25 in Seal, and the A25 in Brasted (36%),
- Reducing vehicle idling (32%),
- Collaboration with bus operators to introduce ultra-low emission vehicles into the fleets (36%),
- Installing electric vehicle charging points within Council owned car parks (36.36%)
- Improving public transport infrastructure (48%).

Car Club/Sharing schemes received the lowest response (8%) suggesting this method is not highly prioritised amongst respondents along with a complete a detailed modelling assessment of the Swanley Area to quantify the local air quality (8%).

Additional questions asked for comments on the AQAP. These are summarised in Appendix A.

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_2 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 5.8 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 5.8 – Air Quality Action Plan Measures

No.	Measure	Category	Classification	Estimated Year Measure to be Introduced	Estimated / Actual Completion Year	Organisations Involved	Funding Source	Defra AQ Grant Funding	Funding Status	Estimated Cost of Measure	Measure Status	Target Reduction in Pollutant / Emission from Measure	Key Performance Indicator	Progress to Date	Comments / Potential Barriers to Implementation
1	Local Plan policy and guidance – Ensure that developers take account of onsite and offsite air quality when assessing the environmental impact of their proposals. That suitable onsite and offsite air quality mitigation measures are included (including financial contributions to strategic air quality improvement measures) as part of a proposal such that future air quality is either improved or sustained at a level that would be achieved without the development.	Policy Guidance and Development Control	Air Quality Planning and Policy Guidance	2022	Ongoing	SDC/ KCC	Internal/ Existing	No	Fully Funded	Low	Planning	NO_2 Whilst guidance already exists, it is important to keep these up-to-date as policies and strategies evolve.	Implementation of policy	Draft policies and allocations	Considering a Supplementary Planning Document on Air Quality to set out how air quality will be assessed and the implementation of existing policy The emerging Local Plan will include a more detailed policy on Air Quality. Air Quality will be considered in the site selection for allocations.
2	Junction improvements at Bat & Ball Junction (A25/ A225 Junction)	Traffic Management	UTC, Congestion management, traffic reduction	2025	2030	SDC/ KCC/ STC	CIL / KCC / S106 Funding	No	Not Funded	Very High	Planning	NO_2 To be confirmed by further assessment once appropriate	Reduction in NO_2 concentrations (amount to be determined by scenario testing once	Initial discussions	The Local Plan will consider the impact of development on these junctions and

No.	Measure	Category	Classification	Estimated Year Measure to be Introduced	Estimated / Actual Completion Year	Organisations Involved	Funding Source	Defra AQ Grant Funding	Funding Status	Estimated Cost of Measure	Measure Status	Target Reduction in Pollutant / Emission from Measure	Key Performance Indicator	Progress to Date	Comments / Potential Barriers to Implementation
												scheme is determined by partners.	suitable scheme is identified) / Reduced congestion and journey times		potential improvements. Cost of works likely to be significant and to cause significant disruption during implementation phase. Funding not secured.
3	Junction improvements at A224/A25 in Riverhead	Traffic Management	UTC, Congestion management, traffic reduction	2025	2030	SDC/ KCC/ STC	CIL / KCC / S106 Funding	No	Not Funded	Very High	Planning	NO_2 To be confirmed by further assessment once appropriate scheme is determined by partners.	Reduction in NO_2 concentrations (amount to be determined by scenario testing once suitable scheme is identified) / Reduced congestion and journey times	Initial discussions	The Local Plan will consider the impact of development on these junctions and potential improvements. Cost of works likely to be significant and to cause significant disruption during implementation phase. Funding not secured.
4	Road/ Junction improvements along A225 Sevenoaks High Street	Traffic Management	UTC, Congestion management, traffic reduction	2025	2030	SDC/ KCC/ STC	CIL / KCC /S106 Funding	No	Not Funded	Medium to high	Planning	NO_2 To be confirmed by further assessment once appropriate scheme is determined by partners.	Reduction in NO_2 concentrations (amount to be determined by scenario testing once suitable scheme is identified) / Reduced congestion and journey times	Initial discussions	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. Possible junction works at entrance to Knole Park +

No.	Measure	Category	Classification	Estimated Year Measure to be Introduced	Estimated / Actual Completion Year	Organisations Involved	Funding Source	Defra AQ Grant Funding	Funding Status	Estimated Cost of Measure	Measure Status	Target Reduction in Pollutant / Emission from Measure	Key Performance Indicator	Progress to Date	Comments / Potential Barriers to Implementation
															A224/ A225 Junction Possible introduction of 20mph speed limit in Sevenoaks High Street. / Consideration of removing loading/ parking bays.
5	Road improvements along the A25 in Seal, and the A25 in Brasted	Traffic Management	UTC, Congestion management, traffic reduction	2025	2030	SDC/ KCC/ STC/ SPC/ WTC/ BPC	CIL / KCC /S106 Funding	No	Not Funded	Medium to high	Planning	NO_2 To be confirmed by further assessment once appropriate scheme is determined by partners.	Reduction in NO_2 concentrations (amount to be determined by scenario testing once suitable scheme is identified) / Reduced congestion and journey times	Initial discussions	No Scheme currently being considered however 20mph zones have been suggested by Town and Parish Councils. Impact to be scenario tested. Costs likely to be significant depending on nature of changes
6	Bike rental schemes	Promoting Travel Alternatives	Promotion of cycling	2022	Ongoing	SDC	CIL/ Grant/ Commercial Income	No	Not Funded	Medium	Planning and feasibility	NO2 Small impact upon NO2 concentrations from measure individually, estimated to be less than 1µg/m3 based upon a low to medium uptake.	Number of bikes available and rentals	Currently being considered for feasibility	Linked to Net Zero 2030 Ambitions.
7	Promotion of active travel schemes	Promoting Travel Alternatives	Intensive active travel campaign & infrastructure	2022	Ongoing	SDC/KCC	Internal/ Existing	No	Funded	Low	Planning	NO_2 Measure is more an awareness raising tool to encourage uptake and	Movement Strategy to be adopted Spring 2022 Recruitment of an Air Quality	Movement strategy is in development for adoption Spring 2022	Promotion of measures to wider audience using dedicated AQPO resource

No.	Measure	Category	Classification	Estimated Year Measure to be Introduced	Estimated / Actual Completion Year	Organisations Involved	Funding Source	Defra AQ Grant Funding	Funding Status	Estimated Cost of Measure	Measure Status	Target Reduction in Pollutant / Emission from Measure	Key Performance Indicator	Progress to Date	Comments / Potential Barriers to Implementation
												use of existing schemes	Promotions Officer		
8	Development of new walking and cycle routes	Transport Planning and Infrastructure	Cycle Network	2022	2027	SDC/ KCC	Internal/ Existing to develop plan + CIL/ Grant to develop infrastructure	No	Partially Funded	Medium/High LCWIP – approx. £25-30k each	Planning	NO_2 Small impact upon NO_2 concentrations from measure individually, estimated to be less than 1µg/m^3 based upon a low to medium uptake.	Development of the Local Cycling and Walking Strategy Completion of cycle routes	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. .
9	District wide promotion of active travel	Promoting Travel Alternatives	Intensive active travel campaign & infrastructure	2022	2027	SDC	Internal/ Existing	No	Funded	Low	Planning	NO_2 Measure to increase public awareness	Number of promotion events	Part of the Movement Strategy and the Net Zero 2030 work	
10	Behavioural change campaigns to reduce single use occupancy car journeys	Alternatives to private vehicle use	Other	2023	2027	SDC	Internal/ Existing	No	Funded	Low	Planning	NO_2 Measure to increase public awareness	Number of campaigns	Recruitment of the AQPO to lead on this area	Part of the Net Zero 2030 work Would need to consider how best to reach audiences
11	Reducing vehicle idling	Traffic Management	Anti-idling enforcement	2022	2025	SDC	Internal/ Existing	No	Funded	Low	Planning	NO_2 Measure largely to increase public awareness, but will help reduce pollutant levels in key hotspot areas	Reduction in NO_2 concentrations Quantitative assessments undertaken before and after initiatives	Recruitment of the AQPO to lead on this area	Development of program under development. To be primarily used as an educational program around primary schools etc
12	Educational campaigns for schools	Public Information	Other	2022	2027	SDC	Internal/ Existing	Yes	Funded	Low	Planning	NO2 Measure to increase public awareness	Number of campaigns	Recruitment of the AQPO to lead on this area	DEFRA grant has been received in Kent for the production of educational resources Educate on the alternatives for private vehicle use within

No.	Measure	Category	Classification	Estimated Year Measure to be Introduced	Estimated / Actual Completion Year	Organisations Involved	Funding Source	Defra AQ Grant Funding	Funding Status	Estimated Cost of Measure	Measure Status	Target Reduction in Pollutant / Emission from Measure	Key Performance Indicator	Progress to Date	Comments / Potential Barriers to Implementation
															AQMAs (38.1% NO_2 emissions)
13	Collaboration with bus operators to introduce ultra-low emission vehicles into the fleets	Vehicle Fleet Efficiency	Promoting Low Emission Public Transport	2022	2027	SDC/ KCC/ Private operators	Internal/ Existing + CIL/Grant as necessary	No	Partially Funded	High	Planning	NO_2 Value to be confirmed by scenario testing	Fleet Composition (% using LEV)	Initial discussions with KCC following the national bus strategy. Proposal for scenario testing being developed	Working with KCC to consider how we can work together to bring forward low emission schemes. Cost likely to be significant for bus operators. SDC unlikely to be able to fund initiatives without CIL/ developer contributions or grants. AQPO to promote benefits to bus operators of sustainable technologies Reduce emissions of Busses 4.7% within AQMAs
14	Transitioning the Council's fleet to low emission vehicles	Promoting Low Emission Transport	Public Vehicle Procurement - Prioritising uptake of low emission vehicles Company Vehicle Procurement - Prioritising uptake of low emission vehicles	2021	2030	SDC	Internal	No	Partially Secured	High – To be identified through the forthcoming Carbon Reduction Plan	Feasibility and Implementation	NO_2 Scenario Testing to be undertaken to assess the impact of the measure on NO_2 depending on fleet composition	Change in fleet composition to less polluting vehicles.	Fleet composition considered by SDC Low Emission and Electric Vehicle Strategy.	Vehicle Replacement Plan to be considered by Members in 2022 Reduce emissions of HGVs 4.9% within AQMAs
15	Improving and developing the	Promoting Low Emission	Procuring alternative	2022	2030	SDC/KCC	Internal/ Existing to	No	Secured for study	Medium / Very High	Planning	NO_2	Undertake a study to	EV Technical Study to be	Part of the recently

No.	Measure	Category	Classification	Estimated Year Measure to be Introduced	Estimated / Actual Completion Year	Organisations Involved	Funding Source	Defra AQ Grant Funding	Funding Status	Estimated Cost of Measure	Measure Status	Target Reduction in Pollutant / Emission from Measure	Key Performance Indicator	Progress to Date	Comments / Potential Barriers to Implementation
	EV infrastructure within the district	Transport	Refuelling infrastructure to promote Low Emission Vehicles, EV recharging, Gas fuel recharging				initiate study of probable EV Charging locations. External funding to be identified for installation/ working with district partners		/ Funding for EV sites to be identified			Small impact upon NO_2 concentrations from measure individually, estimated to be less than 1µg/m^3 based upon a low to medium uptake.	identify suitable locations (demand and infrastructure) for the installation of EV Charging Points Number of EV charging points	undertaken in 2022 and funded from appropriate s106 money (already held by SDC)	published Low Emission and Electric Vehicle Strategy. Reduce % NO_2 emissions from private vehicles (38%)
16	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	2022	2027	SDC/KCC	Internal	No	Study of suitable locations ongoing	High	Planning	NO_2 Small impact upon NO_2 concentrations from measure individually, estimated to be less than 1µg/m^3 based upon a low to medium uptake.	Number of EV charging points within District Area	Part of the recently published Low Emission and Electric Vehicle Strategy	Future use of land assets. Issues with Network Power Infrastructure Reduce % NO_2 emissions from private vehicles (38%)
17	Improving public transport infrastructure	Transport Planning and Infrastructure	Public transport improvements -interchanges stations and services	2022	2027	SDC/KCC	External	No	Not funded	Very High	Planning	NO_2 Small impact upon NO_2 concentrations from measure individually, estimated to be less than 1µg/m^3 based upon a low to medium uptake.	Increased use of Public transport. Additional routes public transport facilities.	Movement Strategy to be adopted Spring 2022	Additional routes for public transport are unlikely to be viable unless commercially sustainable. Reduce % NO_2 emissions from private vehicles (38%)
18	Promote the use of public transport	Promoting Travel Alternatives	Promote use of rail and inland waterways	2022	2027	SDC/ KCC/ Rail Operators	Internal/ External	No	Partially Funded	Medium	Implementation	NO_2 Measure is more an awareness raising tool to encourage uptake and use of available infrastructure	Number of promotional events. Number of passengers on public transport	Rail Projects Community Officer has been employed-funded from existing budgets Work to improve signage	Public transport within SDC is fragmented, but initiatives are currently underway to encourage use of rail Reduce % NO_2 emissions from private vehicles (38%)

No.	Measure	Category	Classification	Estimated Year Measure to be Introduced	Estimated / Actual Completion Year	Organisations Involved	Funding Source	Defra AQ Grant Funding	Funding Status	Estimated Cost of Measure	Measure Status	Target Reduction in Pollutant / Emission from Measure	Key Performance Indicator	Progress to Date	Comments / Potential Barriers to Implementation
														around rural stations.	
19	On and off-street parking charges linked to vehicle emissions standards	Promoting Low Emission Transport	Priority parking for LEV's	2021	Ongoing	SDC	Internal/ Existing	No	Funded	Low	Implementation	NO_2 Small impact upon NO_2 concentrations from measure individually, estimated to be less than 1µg/m^3 based upon a low to medium uptake.	Number of discounted permits	Residential on-street permits are already discounted for hybrid vehicles. Review of the impact if changed to EV only.	Part of the Net Zero 2030 work Reduce % NO_2 emissions from private vehicles (38%) by encouraging LEV
20	Car Club / Sharing schemes	Alternatives to private vehicle use	Car Clubs	2022	2027	SDC	External Funding/ CIL	No	Not funded/ feasibility study	Medium	Planning	NO_2 Small impact upon NO_2 concentrations from measure individually, estimated to be less than 1µg/m^3 based upon a low to medium uptake	Number of car sharing individuals	Car Club schemes to be encouraged in new development through the Local Plan. Included within the Movement Strategy	Cost of implementation / May not be commercially viable within Sevenoaks Reduce % NO_2 emissions from private vehicles (38%) by reducing number within AQMAs
21	Exploring flexible working and home working	Promoting Travel Alternatives	Facilitate flexible and home-working	2022	Ongoing	SDC	Internal	No	Funded	Low	Implementation	NO_2 Measure to increase public awareness	Levels of home working/ number of vehicle journeys removed from road network	Local Plan to facilitate flexible working options. Working with businesses to explore how flexible working can contribute to reducing emissions Policy developed for SDC staff	Reduce % NO_2 emissions from private vehicles (38%) by reducing number within AQMAs
22	Walking to school incentives/	Promoting Travel Alternatives	School Travel Plans	2022	2027	SDC/ KCC	Internal/ Existing Budgets +	No	Partially Funded	Low	Planning	NO_2 Measure to increase	Reduction in school vehicle drop-offs / pick-ups.	Employed an AQPO to develop and	Could have a big impact and is supported by Councillors

No.	Measure	Category	Classification	Estimated Year Measure to be Introduced	Estimated / Actual Completion Year	Organisations Involved	Funding Source	Defra AQ Grant Funding	Funding Status	Estimated Cost of Measure	Measure Status	Target Reduction in Pollutant / Emission from Measure	Key Performance Indicator	Progress to Date	Comments / Potential Barriers to Implementation
	encouragement						External funding					public awareness	Reduced congestion around school opening and closing times	undertake initiatives	Reduce % NO_2 emissions from private vehicles (38%) by reducing number within AQMAs
23	Complete a detailed modelling assessment of the Swanley Area to quantify the local air quality	Traffic Management	Other	2022	2027	SDC	Internal/ Existing Budgets	No	Funded	Low	Planning	TBC	Completion of the report	Quote received/ scoping exercise commenced	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. Survey to be funded from existing budgets within Environmental Health
24	Hire an Air Quality Promotions Officer	Public Information	Other	2022	ongoing	SDC	Internal/ Existing Budgets	No	Funded	Low	Implementation	N/A	Number of educational campaigns		Action to form part of the AQPO duties and role. Initiatives may include reducing emissions from home heating etc
25	To provide information and education in respect of personal emissions and how they may be reduced	Public Information	Other	2022	2027	SDC	Internal/ Existing Budgets	No	Funded	Medium	Implementation	N/A	Recruitment of AQPO	Suitable candidate identified and employed	This role will be specific to focusing efforts on achieving the measures as set out within this action plan
26	To work with businesses to identify ways to reduce emissions from their activities	Public Information	Other	2022	2027	SDC	Internal/ Existing Budgets	No	Funded	Low	Planning	N/A	Number of educational campaigns		Action to form part of the AQPO duties and role.

No.	Measure	Category	Classification	Estimated Year Measure to be Introduced	Estimated / Actual Completion Year	Organisations Involved	Funding Source	Defra AQ Grant Funding	Funding Status	Estimated Cost of Measure	Measure Status	Target Reduction in Pollutant / Emission from Measure	Key Performance Indicator	Progress to Date	Comments / Potential Barriers to Implementation
															Part of the Net Zero 2030 work
27	To discourage the use of bonfires as a means of waste disposal.	Public Information	Regulatory activities / statutory duties r	2022	Ongoing	SDC	Internal/ Existing Budgets	No	Funded	Low	Implementation	PM10/ PM2.5	Number of interventions to provide advice and information to residents. Total number of enforcement actions undertaken	Forms part of current statutory duties	Environmental Health have an enforcement role for bonfires that constitute a statutory nuisance and offences under s2 Clean Air Act
28	To reduce emissions from activities with Environmental Permits	Environmental Permits	Measures to reduce pollution through IPPC Permits going beyond BAT	2022	Ongoing	SDC	Internal/ Existing Budgets	No	Funded	Low	Implementation	NO_2 PM10/ PM2.5	Increased compliance with Environmental Permitting Regulations. Number of premises identified as 'low risk; (%)	All relevant activities hold relevant permits.	EH regulate activities that pollute to air. Risk based regime.
29	To work with Highways England to identify measures which will reduce the need for HGV and LGV vehicles to use the A25	Traffic Management	UTC, Congestion management, traffic reduction	2024	Ongoing	SDC/KCC/ Highways England	External	No	Not-Funded	Very High	Planning	NO_2 PM10/ PM2.5	Identification of schemes that may have AQ benefit along the A25 (AQMA 13)	Previous discussions held	Focus on reducing emissions from LGV/ HGV along A25
30	To review the effectiveness of introducing 20mph zones within areas where AQS objective levels are highest (Sevenoaks High Street, A25 Seal, Bat & Ball Junction, Riverhead, Westerham)	Traffic Management	Reduction of speed limits, 20mph zones	2023	2025	SDC/KCC	Internal	No	Funded	Low	Planning	NO_2 PM10/ PM2.5	Undertake scenario testing to assess impact of measure	Parish and Town Councils independently seeking 20mph zones	Focus on reducing emissions of all sources within AQMAs.

No.	Measure	Category	Classification	Estimated Year Measure to be Introduced	Estimated / Actual Completion Year	Organisations Involved	Funding Source	Defra AQ Grant Funding	Funding Status	Estimated Cost of Measure	Measure Status	Target Reduction in Pollutant / Emission from Measure	Key Performance Indicator	Progress to Date	Comments / Potential Barriers to Implementation
31	To work with business operators to increase the % composition of LEV within private fleets	**Promoting Low Emission Transport**	Company Vehicle Procurement - Prioritising uptake of low emission vehicles	2023	2027	SDC/ KCC	Internal	No	Funded	Low	Planning	NO_2	Number of businesses approached by AQPO. Uptake of LEVs by businesses		Reduction of emissions from HGV and LGV within AQMA 13 Promotion of the Kent REVs scheme and the buying of the Kent REVs electric vehicles.
32	To increase the number of Taxi operators using LEV and EV vehicles	**Promoting Low Emission Transport**	Company Vehicle Procurement - Prioritising uptake of low emission vehicles Taxi emission incentives Taxi Licensing conditions	2023	2027	SDC	Internal/ External	No	TBC	Low	Planning	NO_2	Number of vehicles within the taxi fleet changing to LEV/ EV alternatives	Promotion of energy saving trust Electric vehicle (EV) training courses for taxi and private hire drivers	Reduction in emissions of Private diesel and petrol vehicles within AQMAs

Appendix A: Response to Consultation

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

Consultee	Category	Response
DEFRA	Statutory Consultee	More information on the data supporting the source apportionment exercise should be provided, for example the year from which the assessment has been derived, and details of the build and verification of the dispersion model.
DEFRA	Statutory Consultee	Source apportionment should also be more explicitly referenced in the measures themselves, to ensure that the most significant sources are being effectively targeted. There is little reference within the measures, for example, of the different sources within the different AQMAs.
DEFRA	Statutory Consultee	Source apportionment can also include both local and regional background contributions, for a clearer understanding of the make-up of total ambient concentrations. The addition of source apportionment across a range of different points of interest is a good addition.
DEFRA	Statutory Consultee	The calculations supporting the estimated road NOx reductions required to achieve compliance should be provided to ensure these have been robustly calculated.
DEFRA	Statutory Consultee	In respect of priorities, the first priority within any AQAP should be to bring about compliance with the AQS objectives.
DEFRA	Statutory Consultee	The AQAP determines qualitatively that the actions are likely to be effective, but doesn't accurately quantify any of the specific measures' impacts, which would help the reader to understand the relative merits of particular interventions
DEFRA	Statutory Consultee	It is not very clear how the qualitative target pollution reductions listed for each measure have been determined.
DEFRA	Statutory Consultee	With the exception of measures 2 & 3, which focus on junction and road improvements, the measures are generally more strategic / policy led in nature, with the potential exception of the park and ride measure. Some more specific, hyper local measures may also be beneficial.
DEFRA	Statutory Consultee	The measures would also benefit from a more detailed cost/benefit analysis, as it is currently unclear to the lay person which of the measures will be most cost effective, and which will achieve the greater pollutant reductions.
DEFRA	Statutory Consultee	Expected costs of the measures are often vague. Details of funding sources could also be more clearly determined, as at present this throws some doubt on the likelihood of the implementation of the measures.
DEFRA	Statutory Consultee	Whilst the composition of the Steering Group has been discussed, more detail could be provided.
Member of the public	Resident	"There is ever increasing traffic. Lots of building projects are in planning/progress, further increasing traffic. Swanley is also impacted by the traffic on the M25 which is often at a standstill at Swanley interchange. School buses are increasingly unaffordable and public buses are being scaled back. These actions lead to more car journeys."
Member of the public	Resident	There needs to be less cars. Many people can't afford electric cars so there needs to be regular, reliable, affordable, public transport.
Member of the public	Resident	Improve the Dartford crossing to reduce accidents and holdups to prevent traffic backing up to junction 3 or 4 of M25.
Member of the public	Non-Resident	More buses at useable times eg from Eynsford a bus that goes to sevenoaks and one that comes back a few hours later
Member of the public	Resident	We cannot have a war on motorists because it will hit old people particularly, and we are a rural community where it is simply not practical to have a distributed public transport system. You are, as is frequently common, focusing on woke things rather than practical or correct things.
Member of the public	Resident	Reorganising entry and exit of the M25 and moving businesses that use diesel truck in high residential areas would have a massive impact, as would banning heavy lorries from High Streets.
Member of the public	Resident	Walking to school is just not practical for many people, we are a collection of villages and not everyone goes to school in their village school.
Member of the public	Resident	Discourage people from buying diesel and 4x4 cars.

Consultee	Category	Response
Member of the public	Resident	Ban the use of bonfires across the region, add the cost of garden refuse collection into council tax,
Member of the public	Resident	Set up / liaise with a log distribution business that sells logs that meet emission standards for water content. Licence log sellers in the region so they meet standards.
Member of the public	Resident	Bike rental is contingent on safe bike routes, but I'd have thought most people who want to ride a bike will buy one.
Member of the public	Resident	Car clubs/sharing has an adverse impact on car insurance and could easily render insurance invalid.
Member of the public	Resident	Parking linked to emission is unlikely to be cost effective and is a war on motorists. If also negatively affects classic car usage - unless the intention is to remove all fun/leisure activities in cars.
Member of the public	Resident	Could an air quality promotions officer visit schools are pick up and drop offs occasionally to explain the dangers of car idling to parents and that it's illegal?
Member of the public	Resident	In Eynsford from the station it's not safe to walk to the school due to the lack of safe places to cross the road so many parents will drive. Improving paths may help but speed cameras/ crossings would make it possible
Member of the public	Resident	Safer road crossing in villages (Eynsford) so that parents can walk children to school. I won't walk mine to school because it's so dangerous and neither will other parents for that reason. Would lesson car idling and traffic.
Member of the public	Resident	Bonfire notices explaining the dangers to health and encourage people not to have them at all. I'd like to think that one day they'll be banned and might encourage more greenery, safer levels of PM and allow people to ventilate their homes while cooking etc and keep radon levels down.
Member of the public	Resident	I think educating people especially on the impact on children's health and making cycling and walking safe options is important.
Member of the public	Non-Resident	More buses at useable times eg from Eynsford a bus that goes to Sevenoaks and one that comes back a few hours later!!
Member of the public	Resident	There is no mention of the impacts of log burners/open fires on air quality and yet these are one of the biggest contributors to poor air quality
Member of the public	Resident	I would also like to see a Sevenoaks Council commitment to support the campaign to introduce east facing slip roads at J5 of the M26.
Member of the public	Resident	Active travel, not only promotes clean air but has health benefits and reduces congestion.
Member of the public	Resident	Campaigns are pointless without improving the infrastructure to enable and encourage people to do what you would like them to do. Improve safe, clean routes for pedestrians and cyclists, make road crossings safe and accessible so that children can walk or take public transport to school SAFELY.
Member of the public	Resident	Create a cycle network so that people can get from one place to another safely, without having to share the same bit of road as enormous lorries.
Member of the public	Resident	Priority for measures facilitating walking and cycling within our small town. Not wasting money on posters and campaigns if there are no actual improvements to help people to make changes

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.

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_2	Nitrogen Dioxide
NO_x	Nitrogen Oxides
PM_{10}	Airborne particulate matter with an aerodynamic diameter of 10µm (micrometres or microns) or less
$PM_{2.5}$	Airborne particulate matter with an aerodynamic diameter of 2.5µm or less
SDC	Sevenoaks District Council
KCC	Kent County Council

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