



# **Southend-on-Sea City Council**

## **Air Quality Action Plan**

In fulfilment of Part IV of the Environment Act 1995

Local Air Quality Management

December 2022

## Southend-on-Sea City Council

Information	Southend-on-Sea City Council Details
Local Authority Officer	Elizabeth Georgeou
Department	Regulatory Services
Address	Civic Centre, Victoria Avenue, Southend-on-Sea, Essex, SS2 6ER
E-mail	<a href="mailto:airquality@southend.gov.uk">airquality@southend.gov.uk</a>
Report Reference Number	AQAP_AQMA 2
Date	December 2022

## Executive Summary

This Air Quality Action Plan (AQAP) has been produced as part of our statutory duties required by the Local Air Quality Management (LAQM) framework. It outlines the action we will take to improve air quality in Southend-on-Sea between 2023-2027.

The purpose of this action plan is to address the air quality concerns associated with the Air Quality Management Area (AQMA) along Victoria Avenue and the junctions of East Street, West Street, Priory Crescent and Fairfax Drive. The AQMA 2 Victoria Avenue was declared in 2020 for exceedances of the annual mean limit for nitrogen dioxide (NO<sub>2</sub>); NO<sub>2</sub> emissions in this area are predominantly derived from road traffic.

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

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

This action plan primarily aims to tackle the main causes of poor air quality within Southend-on-Sea, namely emissions from combustion engines, particularly diesel vehicles. We have developed actions that can be considered under various topics:

- Promoting alternatives to private vehicle use;
- Policy guidance and development control;

---

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

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

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

- Promoting low emission transport;
- Public information;
- Transport planning and infrastructure;
- Traffic management; and
- Vehicle fleet efficiency.

Southend-on-Sea City Council have identified a number of priorities to help achieve these actions, which are aligned with the corporate Southend 2050 vision, containing themes of “Pride and Joy”, “Safe and Well”, “Active and Involved”, “Opportunity and Prosperity”, and “Connected and Smart”. These priorities involve the following:

- **Promoting Public Health and Wellbeing:** Providing information and guidance so that people are educated and understand the impacts of poor air quality, as well as actions they can take to bring about improvements in air quality.
- **Reducing the Need to Travel:** Supporting sustainable development/initiatives that support the local economy, services and facilities.
- **Active Travel, Public Transport and Low Emission Vehicles:** Encouraging people to use their private vehicle less by improving infrastructure to promote walking/cycling, supporting sustainable public transport, car clubs, and travel plans. Improvements are also to be made to electrical vehicle (EV) charging infrastructure, to encourage the uptake of EVs.
- **Local Planning Policy and Development Management:** Ensure that any new development does not have an adverse negative impact on air pollution and, where this is unavoidable, adequate mitigation measures must be provided.
- **Transport Planning and Traffic Management:** Work with partners to mitigate existing areas of traffic and transport.

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 that are beyond the direct influence of Southend-on-Sea City Council.

## Responsibilities and Commitment

This AQAP was prepared by Bureau Veritas and the Regulatory Services department of Southend-on-Sea City Council, with the support and agreement of the following officers and departments:

- Neil Hoskins (Head of Civil Engineering)
- Sharon Harrington (Head of Traffic, Asset Management & Highways Network)
- Denise Wenn (Health Improvement Practitioner)
- Jo Gay (Interim Head of Waste and Climate Change)

This AQAP has been approved by:

- Cllr Carole Mulroney (Cabinet Member Environment, Culture and Tourism)
- John Burr (Executive Director for Neighbourhoods and Environment)

This AQAP has been signed off by a Director of Public Health.

This AQAP will be subject to an annual review, appraisal of progress and The Air Quality Steering Group. Progress each year will be reported in the Annual Status Reports (ASRs) produced by Southend-on-Sea City Council, as part of our statutory LAQM duties.

If you have any comments on this AQAP please send them to Elizabeth Georgeou at:

Southend-on-Sea City Council

Civic Centre, Victoria Avenue, Southend-on-Sea, Essex SS2 6ER

[airquality@southend.gov.uk](mailto:airquality@southend.gov.uk)

## Table of Contents

<b>Executive Summary</b> .....	
Responsibilities and Commitment .....	ii
<b>1 Introduction</b> .....	<b>1</b>
<b>2 Summary of Current Air Quality in Southend-on-Sea City Council</b> .....	<b>2</b>
2.1 NO <sub>2</sub> Concentrations within Southend-on-Sea .....	2
<b>3 Southend-on-Sea City Council’s Air Quality Priorities</b> .....	<b>5</b>
3.1 Public Health Context .....	5
3.2 Planning and Policy Context .....	7
3.2.1 Association of South Essex Local Authorities .....	8
3.2.2 Southend-on-Sea City Council Local Plan .....	8
3.2.3 Southend-on-Sea City Council Local Transport Plan .....	9
3.2.4 Transport East Transport Strategy .....	9
3.2.5 Land Use Planning – Air Quality Assessments .....	10
3.2.6 Green City Action Plan .....	10
3.2.7 Financial Air Quality Improvement Schemes .....	11
3.2.8 Planning Development (‘Better Southend’) .....	12
3.2.9 Additional Policies .....	14
<b>4 Source Apportionment</b> .....	<b>15</b>
4.1 Required Reduction in Emissions .....	18
<b>5 Key Priorities</b> .....	<b>20</b>
5.1 Priority 1 – Road Transport .....	20
5.2 Priority 2 – Land Use Planning .....	20
5.3 Priority 3 – Connected & Smart City .....	21
5.4 Priority 4 – Public Health & Raising Awareness .....	21
5.5 Priority 5 – Climate Resilience & Sustainable Innovation .....	22
5.6 Priority 6 – Air Quality Monitoring .....	22

<b>6</b>	<b>Development and Implementation of Southend-on-Sea City Council’s AQAP</b> .....	<b>23</b>
6.1	Consultation and Stakeholder Engagement.....	23
6.2	Steering Group.....	24
<b>7</b>	<b>AQAP Measures</b> .....	<b>25</b>
	<b>Appendix A: Response to Consultation</b> .....	<b>32</b>
	<b>Appendix B: Reasons for Not Pursuing Action Plan Measures</b> .....	<b>33</b>
	<b>Glossary of Terms</b> .....	<b>34</b>
	<b>References</b> .....	<b>35</b>

## List of Tables

Table 2.1	– Monitored NO <sub>2</sub> Concentrations within Southend-on-Sea .....	3
Table 4.1	– NO <sub>x</sub> Reduction Required within AQMA 2 Victoria Avenue .....	19
Table 6.1	– Consultation Undertaken by Southend-on-Sea City Council .....	23
Table 7.1	– Air Quality Action Plan Measures.....	26
Table B.1	– Action Plan Measures Not Pursued and the Reasons for that Decision ..	33

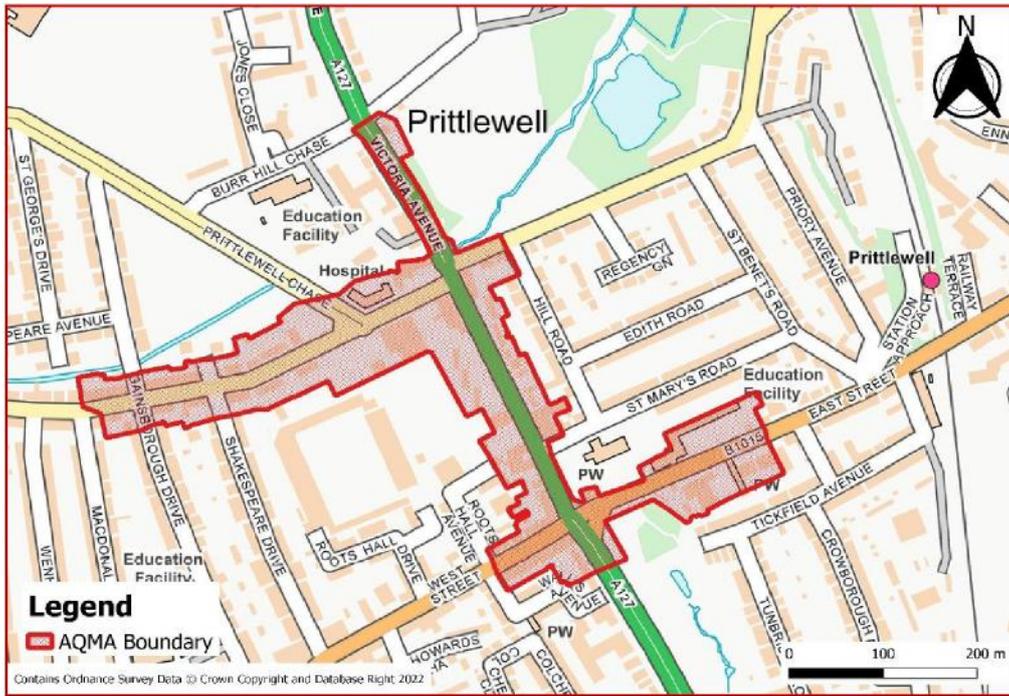
## List of Figures

Figure 1.1	– AQMA 2 Victoria Avenue .....	1
Figure 4.1	– Source Apportionment of NO <sub>x</sub> (All Receptors) .....	16
Figure 4.2	– Source Apportionment of NO <sub>x</sub> (NO <sub>2</sub> > 40 µg/m <sup>3</sup> & Maximum NO <sub>x</sub> ) .....	17

# 1 Introduction

- 1.1 This report outlines the actions that Southend-on-Sea City Council will deliver between 2023-2027 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 Southend-on-Sea. It has been developed in recognition of the legal requirement on the local authority to work towards Air Quality Strategy (AQS) objectives under Part IV of the Environment Act 1995 and relevant regulations made under that part and to meet the requirements of the Local Air Quality Management (LAQM) statutory process.
- 1.2 It should be noted that the Environment Act 1995 has recently been amended (2021). The Environment Act 2021 establishes a legally binding duty on government to bring forward at least two new air quality targets in secondary legislation by 31 October 2022. New legally binding targets are to be set for PM<sub>2.5</sub>. 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 Southend-on-Sea City Council's air quality Annual Status Report (ASR).
- 1.3 The main focus of this action plan is on reducing concentrations of NO<sub>2</sub> in [AQMA 2 Victoria Avenue](#) (illustrated in Figure 1.1 below). However, the measures will also help reduce NO<sub>2</sub> across wider areas of Southend-on-Sea and in [AQMA 1 The Bell Junction](#).

**Figure 1.1 – AQMA 2 Victoria Avenue**



Southend-on-Sea City Council Air Quality Action Plan (2023-2027)

## 2 Summary of Current Air Quality in Southend-on-Sea City Council

- 2.1 Southend-on-Sea is located in south-east Essex, 42 miles from London, and has a population of 180,700 (2021 census), largely living in the main urban areas of Southend, Westcliff and Leigh-on-Sea. The main source of air pollution within these areas originates from road traffic emissions from major roads, notably the A13, A127 and A1159. Other pollution sources that contribute to the background concentration include commercial, industrial and domestic sources.
- 2.2 Southend-on-Sea City Council has declared two AQMAs, both for exceedances of the NO<sub>2</sub> annual mean. These include:
- [AQMA 1](#): Centred at the junction between Prince Avenue, Hobblythick Lane, and Rochford Road (known as ‘The Bell Junction’) – declared 2016.
  - [AQMA 2](#): Short section of the A127 Victoria Avenue, adjacent to the junctions with Priory Crescent, Fairfax Drive, East and West Street – declared 2020.
- 2.3 This AQAP is designed to tackle the exceedance of the NO<sub>2</sub> annual mean identified within with AQMA 2 Victoria Avenue.
- 2.4 In accordance with LAQM Policy Guidance (22)), the approximate population within the boundary of AQMA 2 Victoria Avenue is 353 people, based on the total area of the AQMA being approximately 0.08 km<sup>2</sup> and the population density<sup>4</sup> of Southend-on-Sea being 4,336 per km<sup>2</sup>.

### 2.1 NO<sub>2</sub> Concentrations within Southend-on-Sea

NO<sub>2</sub> is the primary pollutant of concern for Southend-on-Sea City Council, due to the known health effects of exposure to high concentrations. During 2021, NO<sub>2</sub> was passively monitored at 45 diffusion tube sites and one automatic site, which is operated as part of the Automatic Urban and Rural Network (AURN). The monitoring network

---

<sup>4</sup> Office for National Statistics. (2022). Population and Household Estimates, England and Wales.

## Southend-on-Sea City Council

serves as an ongoing indicator for changing NO<sub>2</sub> trends to identify any hotspot areas and is essential for the assessment of the implementation of the measures detailed within this AQAP. The monitoring network also provides an initial evidence base for consideration of the requirement to revoke, amend or declare any AQMAs.

With regards to the AQMA of interest in this AQAP (AQMA 2 Victoria Avenue), there are two diffusion tube sites located within the AQMA boundary: SOU38 and SOU39. Monitoring data for the past five years (2017-2021) is presented in Table 2.1 so that the trends and the frequency of any exceedances can be identified. The numbers in bold indicate an exceedance of the 40 µg/m<sup>3</sup>. It should be noted that there is a degree of uncertainty with regard to the 2020 and 2021 monitoring data, owing to the impact that the COVID-19 pandemic had on the level of traffic activity during lockdown periods.

**Table 2.1 – Monitored NO<sub>2</sub> Concentrations within Southend-on-Sea**

Site ID	Location	Annual Mean NO <sub>2</sub> Concentration (µg/m <sup>3</sup> )				
		2017	2018	2019	2020	2021
<b>Within AQMA 2 Victoria Avenue</b>						
SOU38	West Street	<b>40.9</b>	38.5	33.7	37.4	36.8
SOU39	Victoria Avenue 3	<b>41.5</b>	<b>42.0</b>	38.4	39.1	32.6
<b>Within AQMA1 The Bell Junction</b>						
SOU32	Victoria Avenue 2	27.1	27.0	23.9	23.9	20.1
SOU33	Prince Avenue 1A	<b>49.2</b>	<b>49.3</b>	<b>45.2</b>	<b>44.6</b>	35.5
SOU46	3 Prince Avenue	31.4	33.5	30.5	29.5	23.4
SOU51	88 Prince Avenue	-	-	-	-	21.4
SOU52	170 Prince Avenue	-	-	-	-	19.9
SOU53	201 Prince Avenue	-	-	-	-	20.5
SOU55	20 Rochford Road	-	-	-	-	19.7
SOU56	21 Larke Rise	-	-	-	-	17.2
<b>Outside of AQMAs</b>						
SOU21	Victoria Avenue 1	34.8	32.4	30.9	24.2	27.3
SOU22	West Road	28.6	26.9	24.7	20.1	22.7
SOU24	Eastern Avenue	33.5	30.6	30.0	23.6	25.5
SOU25	Heygate Avenue	30.2	25.7	24.5	21.3	24.4
SOU26	London Road 2	37.2	34.4	30.8	24.9	27.4
SOU27	London Road 1	21.7	19.1	19.9	15.0	16.5
SOU28	Prince Avenue 2	34.1	30.5	27.6	23.3	25.0
SOU29	Abbotts Close	25.2	21.8	21.0	16.5	17.5
SOU30	Manners Way	26.1	25.7	21.1	16.0	17.0
SOU31	Boston Avenue	27.8	26.3	24.9	19.8	22.1
SOU34	Parsons Corner	25.1	24.7	22.3	21.7	18.3
SOU35	Bournes Green Chase	24.8	27.4	20.9	22.1	19.1
SOU36	Eastern Esplanade	28.9	29.3	27.8	25.5	21.0
SOU37	Marine Parade	28.9	29.4	23.9	22.8	20.5
SOU40	London Road 3	33.6	33.2	28.1	27.8	23.5
SOU41	London Road 4	31.8	35.7	29.6	30.0	26.8

## Southend-on-Sea City Council

Site ID	Location	Annual Mean NO <sub>2</sub> Concentration (µg/m <sup>3</sup> )				
		2017	2018	2019	2020	2021
SOU42	Broadway, Leigh	28.3	28.2	26.8	24.2	22.4
SOU43	London Road 5	36.5	33.8	31.1	29.1	25.3
SOU44	Hamlet Court Road 1	37.6	38.3	31.8	30.1	27.4
SOU45	Hamlet Court Road 2	28.4	30.8	27.0	22.5	21.2
SOU47	568 Prince Avenue	-	-	-	-	18.7
SOU48	33 The Fairway	-	-	-	-	15.5
SOU49	250 Hamstel Road	-	-	-	-	18.3
SOU50	115 Wells Avenue	-	-	-	-	14.5
SOU54	111 Hobblythick Road	-	-	-	-	16.5
SOU57	285 Sutton Road	-	-	-	-	21.5
SOU58	Greenways School	-	-	-	-	13.8
KE1	Library, 1 Rayleigh Road, Leigh	27.7	26.0	24.7	19.9	21.5
KE2	Health Centre, 1 Rayleigh Road, Leigh	30.2	28.4	29.3	21.6	19.9
KE3	55 Broomfield Ave, Leigh	23.0	19.9	20.5	15.6	16.5
KE4	332 Bridgewater Drive	32.5	29.1	27.4	23.8	25.1
KE5	326-328 Bridgewater Dr	25.7	24.9	22.6	18.7	22.7
KE6	327 Bridgewater Drive	31.6	26.9	25.9	20.8	24.0
KE7	685 Prince Ave, Westcliff	38.8	35.2	34.1	27.8	30.1
KE8	Essex Auto Group	28.5	27.3	26.7	20.6	22.1
AURN	Chalkwell Park (UKA00409)	21.0	20.0	19.0	14.0	15.4

From the monitoring undertaken by Southend-on-Sea City Council, it is evident that there have been exceedances of the NO<sub>2</sub> annual mean within both AQMAs over the last five years, and no exceedances outside of the current AQMA boundaries. With regards to AQMA 2 which this AQAP, there were exceedances in 2017 and 2018, and no exceedances since. However, this is likely due to the impact of the COVID-19 pandemic severely reducing vehicular emissions during lockdown periods. However, even during 2020 when vehicle activity was significantly reduced, the NO<sub>2</sub> concentration measured at the diffusion tube site SOU39 within AQMA 2 was still within 10% of the annual mean objective of 40 µg/m<sup>3</sup>. Therefore, based on current monitoring, it is evident that the current designation for AQMA 2 Victoria Avenue should remain, hence the purpose of this AQAP is to outline measures to ensure future compliance.

## 3 Southend-on-Sea City Council's Air Quality Priorities

This section presents the main drivers and the approach taken by Southend-on-Sea City Council for the development and subsequent selection of measures included within this AQAP. Reference is also made in this section to the existing strategies and policies that are in place and have an impact on air quality within Southend-on-Sea.

The Council's priorities have also been informed by results from an air quality assessment. As part of this, a source apportionment study has been completed across the modelled area, focusing particularly on AQMA 2 Victoria Avenue. This study has allowed the most significant sources of oxides of nitrogen (NO<sub>x</sub>) vehicle contributors to be identified. Primarily, NO<sub>x</sub> is emitted into the atmosphere in the form of nitric oxide (NO) which is then converted to nitrogen dioxide (NO<sub>2</sub>) through chemical processes in the atmosphere. Under most atmospheric conditions, the dominant pathway for NO<sub>2</sub> formation is via the reaction of NO with ozone (O<sub>3</sub>).

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

### 3.1 Public Health Context

There is increasing scientific evidence that poor air quality has a significant negative impact on human health. Research shows that the most common pollutants of concern (NO<sub>2</sub>, PM<sub>10</sub>, and PM<sub>2.5</sub>) are linked to various health complications, primarily impacting the cardiovascular and respiratory systems, but also impacting other bodily organs. Short-term exposure to these pollutants can bring about symptoms such as nose and throat irritation, followed by bronchoconstriction and dyspnoea, alongside increased reactivity to natural allergens, increasing the risk of respiratory infections through the interaction of pollutants with the immune system. Long-term exposure may lead to reduced lung function, hampering development in young children, alongside reducing life expectancy due to cardiovascular and respiratory diseases.

Local authorities are under pressure from members of the public to demonstrate that action is being taken to actively tackle and reduce air pollution in their area. Previously, Southend-on-Sea City Council Air Quality Action Plan (2023-2027)

there had been no deaths linked to air pollution, however in 2020 the first person in the UK had 'air pollution' listed as the cause of death. Although there are currently no legislative outcomes as a result of this, it further increases the pressure and duty of care that local authorities have in order to protect their residents.

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 guidance on taking appropriate action to reduce exposure and improve the health of everyone within Southend-on-Sea.

The Air Quality Indicator in the Public Health Outcomes Framework (England) provides further impetus to join up action between various local authority departments which impact on the delivery of air quality improvements. The "Air Quality – A Briefing for Directors of Public Health" document (published 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 their area<sup>5</sup>. It also provides advice for local authorities on how to appropriately prioritise air quality alongside other public health priorities to ensure it is on the local agenda.

The document comprises the following key guides:

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

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

---

<sup>5</sup> Local Government Association, Air Quality: A Briefing for Directors of Public Health, March 2017. Available at: <<https://www.local.gov.uk/publications/air-quality-briefing-directors-public-health>>

The Public Health Outcomes Framework data tool<sup>6</sup> compiled by Public Health England quantifies the mortality burden of PM<sub>2.5</sub> within England on a county and local authority

The 2020 fraction of mortality attributable to PM<sub>2.5</sub> in Southend-on-Sea is 6.1%, which is above both the national and regional (East of England) averages of 5.6% and 5.8%, respectively. It should be noted that this figure only accounts for one pollutant (PM<sub>2.5</sub>) for which stronger scientific evidence on links with mortality exist, and not NO<sub>2</sub>, for which the AQMA of interest (AQMA 2 Victoria Avenue) is declared.

With regards to the health impacts as a result of air pollution within Southend-on-Sea, (particularly within AQMA 2 Victoria Avenue) this is predominantly associated to the concentrations of NO<sub>2</sub> exceeding the annual mean AQS objective. It is expected that some of the measures implemented in this AQAP for the achievement of reductions in NO<sub>2</sub> will have co-benefits in additionally reducing concentrations of PM<sub>10</sub> and PM<sub>2.5</sub>.

### 3.2 Planning and Policy Context

This AQAP outlines Southend-on-Sea City Council's plan to effectively tackle air quality issues within its control. There are numerous existing and impeding policies adopted at all levels (local, regional, and national) that can exert significant effects, both positive and negative, on air quality across Southend-on-Sea. 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 actions for improving air quality can be implemented. Whilst certain policies and/or strategies may be outside of the influence of Southend-on-Sea City 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 primary air quality focus, whilst others relate to transportation issues and therefore have the additional benefit of contributing to overall improvements in air quality across Southend-on-Sea.

---

<sup>6</sup> Public Health Outcomes Framework: D01 – Fraction of Mortality Attributable to Particulate Air Pollution. Available at: <https://fingertips.phe.org.uk/profile/public-health-outcomes-framework/data#page/1/gid/1000043/pat/15/ati/402/are/E06000033/iid/93861/age/230/sex/4/cat/-1/ctp/-1/yrr/1/cid/4/tbm/1>

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 pollutant concentrations within the city. Given their importance, most measures listed below have been included as action measures within this AQAP. The most relevant policies are detailed in the following:

### 3.2.1 Association of South Essex Local Authorities

Southend-on-Sea City Council are currently working together with the five other local authorities in South Essex (Basildon, Brentwood, Castle Point, Rochford and Thurrock) and Essex County Council across local authority boundaries. In January 2018, the local authorities formed the Association of South Essex Local Authorities (ASELA) to ensure implementation of the ambition has strong leadership and is managed on a truly collaborative basis. This collective effort addresses a range of strategic issues and initiatives.

### 3.2.2 Southend-on-Sea City Council Local Plan

A local plan that is shaped through community engagement provides an important tool to help manage future development proposals which may negatively impact air quality.

The plan is divided into three parts: (1) Aims and Objectives, (2) Spatial Strategy, and (3) Southend Neighbourhoods. Consultation has been undertaken in 2019 and 2021 on 'Issues and Options' and 'Refining the Plan Options', respectively. A consultation will be undertaken in the third quarter of 2023 (Q3) on the 'Preferred Approach', with full public consultation on the proposed submission taking place in the third quarter (Q3) of 2024, and submission of the final adopted local plan in the final quarter of the same year.

Once adopted, the local plan sets out the long-term planning strategy and forms the main basis for Southend-on-Sea City Council making decisions on any future planning application. The local plan includes detailed policies and site proposals for housing, employment, leisure and infrastructure up to 2040.

Consideration of air quality issues at the plan-making stage can provide a strategic overview and help to secure net improvements in overall air quality. It can identify the

type, scale and location of development most appropriate to the area, the potential cumulative impact of smaller developments on air quality and opportunities to improve air quality or mitigate impacts.

### 3.2.3 Southend-on-Sea City Council Local Transport Plan

The local transport plan (LTP) steers the implementation of national transport policies at the local level. As a strategic document the LTP does not contain details of schemes, but sets out a long-term transport strategy, a shorter-term implementation plan and several supporting strategies. Air quality is closely linked to how people and goods travel, and how we would like them to travel in the future. The transport strategy and air quality teams will work closely to ensure policies and plans align.

To reduce the potential for the transport sector to negatively impact air quality, links need to be made to the wider economic, social, and environmental objectives. The LTP3 has therefore been developed within the context provided by a range of policy documents, including the Southend Core Strategy. The LTP3 implementation plan 2021/22 has been extended to cover 2022/23 and updated to state how it achieves the Southend 2050 vision. The actions in the plan will achieve the following outcomes:

- It is easier for residents, visitors, and workers to get around the city.
- People have a wide choice of transport options.
- Leading the way in making public and private travel smart, clean and green.
- More people have physically active lifestyles, including through the use of local open space.

Local Transport Plan (LTP4) is currently under preparation with an aim of completion by the end of 2023. This will include a range of policies and proposals that it is anticipated will include measures to manage the impacts of congestion on air quality, promotion of active travel and facilitation of electric vehicles.

### 3.2.4 Transport East Transport Strategy

Transport East is the sub-national transport body for Norfolk, Suffolk, Essex, Thurrock and Southend-on-Sea, providing a single voice for councils on the region's transport strategy and strategic transport investment priorities. The transport strategy has an overarching framework of decarbonising transport to reach net-zero emissions.

### **3.2.5 Land Use Planning – Air Quality Assessments**

A key priority for Southend-on-Sea City Council is to integrate air quality considerations into other policy areas such as land use planning. Primarily, this is because many new developments have the potential to increase the pollution burden and it is appropriate that these developments are required to mitigate or offset this to help to achieve an overall reduction in air pollution. Therefore, it is clear that there is a need to identify air quality considerations in the planning process at the earliest possible stage. It is no longer satisfactory to simply demonstrate that a development is no worse than the existing or previous land use on a particular site.

Where a development is proposed to take place in or adjacent to an AQMA or could have a significant impact on air quality, an air quality assessment (AQA) is required, and the resultant mitigation measures must be considered as standard practice. This is particularly the case where the development is new and does not simply replace an existing use, and has the provision for parking spaces that will significantly increase the number of vehicle trips. Where relevant, guidance for dust management on construction sites and medium combustion plant should be incorporated. In some cases, it may be necessary to recommend refusal when a development is so contrary to the objectives of the AQAP and Low Emission Strategy (LES). The LES provides a comprehensive plan detailing mechanisms for reducing road transport emissions across hotspot areas in Southend-on-Sea.

### **3.2.6 Green City Action Plan**

Southend-on-Sea City Council is launching a new set of strategies, which combined will help support the ambition of becoming a green city and the 2050 vision. A new Green City Action Plan has been created, together with a programme of energy and greening projects that target our school estate and would have the co-benefit of improving air quality. In addition will be the Climate Resilience and Urban Green Strategy 2021-2025. The strategy identifies how the Council can build resilience to the future impacts of climate change and will prioritise action to deliver an ambitious urban greening programme. This will also have the added benefit of helping to improve air quality and reduce the impact of pollutants by increasing the amount of vegetation, green infrastructure and green spaces within Southend-on-Sea.

In urban areas, some research suggests trees, vegetation and green spaces can help to reduce the level of pollutants and improve air quality by absorbing gaseous pollutants, lowering ambient temperatures and by producing oxygen during photosynthesis. In addition to using green infrastructure to mitigate the effects of poor air quality, opportunities exist for individuals to change their transport behaviours and adopt a modal shift by utilising walking and cycling network, or consider travelling around Southend-on-Sea by public transport. Green infrastructure therefore has a twofold benefit in terms of air pollution: (1) directly absorbing gaseous pollutants and (2) encouraging changes in travel patterns by encouraging cycling and walking. Southend-on-Sea City Council are seeking funding for the following green infrastructure projects:

- Chalkwell Avenue;
- Victoria Circus; and
- Phase one of 'Better Queensway' – a multi-million pound regeneration scheme.

Southend-on-Sea City Council directly manages thousands of trees growing along its roads, in its parks and gardens, and woodlands. The new tree policy (2020-2030) reaffirms Southend-on-Sea City Council's ongoing commitment to responsible tree management and to maintaining and enhancing tree canopy covers, along with other green planting.

There will be a continuation of street tree planting to help maintain and extend the tree canopy cover across Southend-on-Sea, with a target to increase overall canopy cover from 12% to 15% by 2050 by planting more trees each year than are removed. The policy will be reviewed and updated regularly to reflect changes in national legislation.

### 3.2.7 Financial Air Quality Improvement Schemes

Southend-on-Sea City Council are in the process of creating a public procurement framework and facilitation service that will enable local authorities and other public sector bodies to procure 'healthy' buildings (including indoor air quality) and net-zero retrofits. By combining 'healthy' buildings with net-zero targets it provides local authorities with an opportunity to bundle investments together, enabling air quality to become an integral aspect of all net-zero investments and decarbonation programmes. This approach is designed to overcome a major barrier for local authority led air quality improvement schemes, specifically how air quality programmes can be funded without



the need for government grants or subsidies. By linking air quality to the net-zero agenda, the project will create routes to finance that local authorities have previously not had access to, linking it to national targets to become net-zero carbon by 2050.

The project is intended to address the critical issues of reducing carbon emissions to support national, regional, and local net-zero targets; it takes positive actions to make buildings 'healthy' and create safe environments for education and working. Moreover, local authorities have considerable property estates which will need upgrading to meet net-zero targets. This upgrade is likely to inadvertently bring about an improvement to air quality. The project will establish a clear pathway for local authorities to deliver an investment programme that combined the net-zero and 'healthy' building retrofits, resulting in projects that achieve high levels of carbon reduction and improvements in air quality, and will initially focus on school buildings. Project partners will develop the public procurement framework to identify how air quality improvement projects can be linked to existing net-zero programmes. Enabling the integration of air quality schemes with existing net-zero programmes is key to facilitating the most efficient strategy to achieve the required reductions. This will enable the new framework and facilitation service to be developed in line with planned energy efficiency, and renewable generation projects in four initial primary schools in Southend-on-Sea. Each pilot will integrate air quality improvement solutions into the net-zero carbon project, highlighting how the model can work in practice and be replicated by local authorities throughout the Southeast Local Enterprise Partnership region, and will be supported by the development of a new air quality modules for Better Planet Schools.

In 2019, Southend-on-Sea City Council declared a climate emergency which was a commitment to leading action to becoming net-zero by 2030. This requires substantial energy efficiency work across Southend-on-Sea City Council's property estate, whilst working with communities, residents and business to identify opportunities to increase the volume of renewable energy in Southend-on-Sea. Shifting to renewable energy and electric vehicles will have a significant impact on improving air quality and will be a strong feature throughout the Net-Zero Carbon Strategy (released in early 2021).

### 3.2.8 Planning Development ('Better Southend')

Southend-on-Sea City Council received £25 million from central government to use on key projects to help with any regeneration and redevelopment work. There are many

transport policies, projects, and schemes that have been developed and implemented already to improve the travel activity. The projects cover driving, public transport, cycling, and walking – all of which, if improved, can have a positive effect on air quality.

***Kent Elms Project:*** The completed Kent Elms project junction improvements have provided maximum benefit with three lanes heading eastward, and a right-hand turn lane providing improved capacity through the junction. An additional lane is provided heading westward, again increasing the capacity through the junction. These changes make it easier for people with reduced mobility and those with pushchairs to cross the highway to access amenities. The majority of the funding for the Kent Elms junction improvement (£5.1 million) was from the Local Growth Fund via the South East Local Enterprise Partnership, with the remainder coming from the Southend-on-Sea’s capital budget. Together, with a new footbridge, the scheme helps to deliver an improved local environment and contributes positively towards sustainable transport objective.

***The Bell:*** The Local Growth Fund, via the South East Local Enterprise Partnership, has provided £4.3 million in support of improvements to The Bell junction. There is also a £720,000 contribution from Southend-on-Sea City Council, meaning the total funding for the project is approximately £5 million. The junction improvement works involved:

- A new dedicated left-hand turn onto Rochford Road;
- Extending the right-hand turn onto Hopleythick Lane;
- Better pedestrian facilities on Rochford Road by providing a traffic-signal pedestrian crossing;
- Better pedestrian facilities on Hopleythick Lane by providing a new pedestrian island;
- Preventing a right-hand turn onto Rochford Road in order to free up more “green light” time for motorists going straight ahead along the A127 in both directions, and improve pedestrian facilities; and
- Removing the footbridge which does not comply with disability discrimination legislation because of the lack of ramps.

For more information, please email [bettersouthend@southend.gov.uk](mailto:bettersouthend@southend.gov.uk).

### 3.2.9 Additional Policies

**Core Strategy (2007) Policy KP2 (Development Principles):** This policy seeks to ensure that all new developments, including transport infrastructure, contributes to economic, social, physical and environmental regeneration in a sustainable way, including:

- Reducing the need to travel;
- Respecting, conserving, enhancing and, where required, adequately mitigating the effects on the natural environment;
- Facilitating the use of travel modes other than the private vehicle;
- Promoting improved and sustainable modes of travel, including appropriate measure in design, layout, operation and materials to achieve, avoidance or appropriate mitigation of actual and potential pollution impacts of development enhancements to the ecological and amenity value of the environment.

**Core Strategy Policy KP3 (Implementation and Resources):** This policy states that in planning obligations, Southend-on-Sea City Council will enter the discussion to ensure the provision of infrastructure and transportation measures (that have an air quality benefit) such as improvements to:

- Cycling, walking and passenger transport facilities and services, open spaces, and green grid enhancements; and
- Requiring all developments to have regard to and, where appropriate, contribute to the delivery of the Southend Local Transport Plan.

**Core Strategy Policy KP3 (Transport and Accessibility):** This policy makes provision for improvements to transport infrastructure and services, in partnership, to secure a step change in provision to achieve a modern integrated transport system, necessary to unlock key development sites and secure sustainable regeneration and growth. This includes Policy CP3.6 'Safeguarding and Enhancing the Environment of Environmental Rooms', as defined in the Local Transport Plan.

## 4 Source Apportionment

Source apportionment is the process by which different pollutant sources in relation to existing ambient concentrations are quantified. A source apportionment exercise was carried out using a baseline year prior to 2020 to discount any changes arising as a result of the effects of COVID-19 restrictions causing significant changes in vehicle patterns, which may not be representative of future year concentrations. Therefore, using pre-pandemic traffic levels would more likely represent the normalised level of vehicle activity in Southend-on-Sea. However, on the professional recommendation of the transport consultant (Mott MacDonald), 2018 data was used instead of 2019. The measures presented within this AQAP are targeted towards the predominant sources of emissions within Southend-on-Sea.

The source apportionment process has been completed in order to:

- Quantify the proportions of NO<sub>x</sub> that are attributable to both background concentrations and to local road emissions. The total concentration of a pollutant comprises those from explicit local emission sources such as roads, chimney stacks, etc., and those that are transported into an area by the wind.
- Determination of the relative contributions from different vehicle types (cars, heavy good vehicles (HGVs), light good vehicles (LGVs), buses and coaches, and motorcycles).
- Determination of whether action plan measures would need to be on a local, regional, and/or national scale to have a significant impact upon reducing NO<sub>x</sub> emissions within the AQMA.

The source apportionment exercise was carried out using detailed dispersion modelling software (ADMS-Roads Version 5.0) to identify and assess the emission profile of vehicles within Southend-on-Sea, based upon traffic data and sensitive receptors. To complete this exercise, NO<sub>x</sub> and NO<sub>2</sub> concentrations have been predicted at a number of receptors within, and close to AQMA 2 Victoria Avenue. This was undertaken to determine which vehicle type(s) represent the most significant source of NO<sub>x</sub> pollution within the AQMA. The study used the split of vehicle fleet emissions contained in the Emissions Factors Toolkit provided by Defra and are in line with predictions from the National Air Emissions Inventory.

Emission sources of NO<sub>2</sub> are dominated by a combination of different NO<sub>2</sub> (f-NO<sub>2</sub>) and oxides of nitrogen (NO<sub>x</sub>), the latter of which is chemically unstable and rapidly oxidised upon release to form NO<sub>2</sub>. NO<sub>x</sub>, once emitted from vehicles, undergoes a number of chemical reactions and disperses to form the NO<sub>2</sub> concentrations that are measured at roadside monitoring locations. Reducing levels of NO<sub>x</sub> emissions therefore reduces the levels of NO<sub>2</sub>. As a consequence, the source apportionment study has considered NO<sub>x</sub> emissions which are assumed to be representative of the main sources of NO<sub>2</sub>.

The findings of the above are summarised in Figure 4.1 and Figure 4.2

below. **Figure 4.1 – Source Apportionment of NO<sub>x</sub> (All Receptors)**

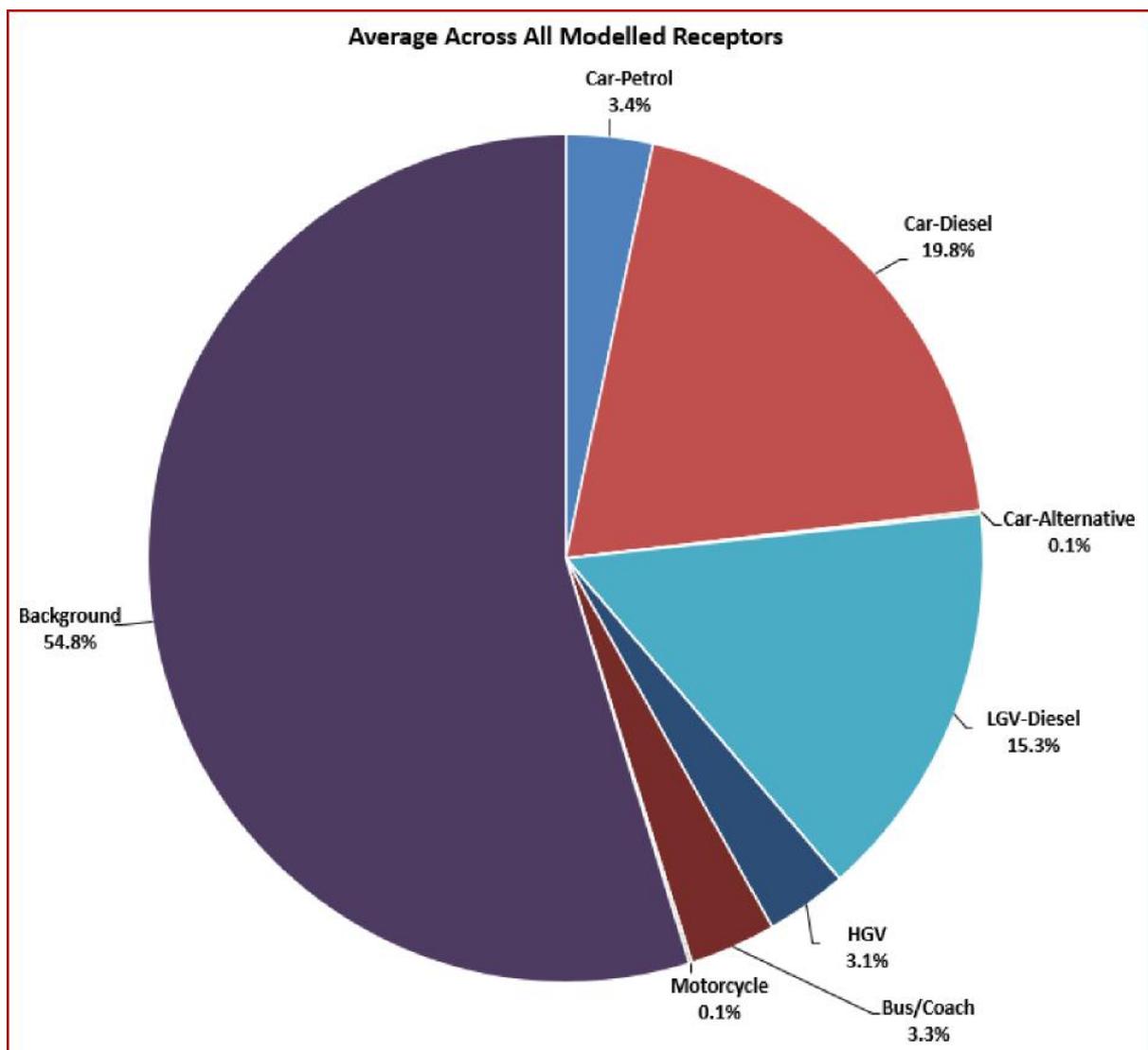
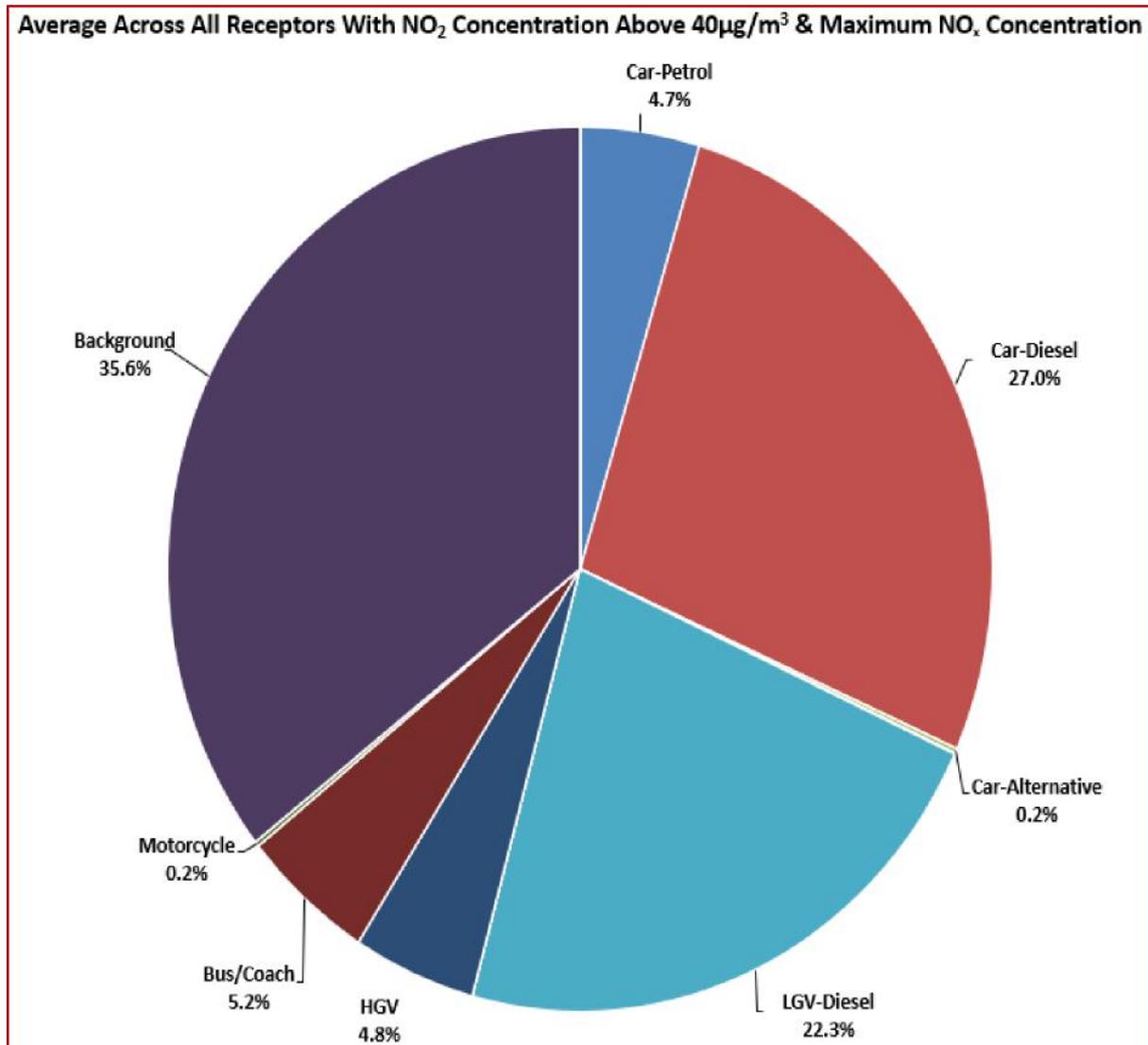


Figure 4.2 – Source Apportionment of NO<sub>x</sub> (NO<sub>2</sub> > 40 µg/m<sup>3</sup> & Maximum NO<sub>x</sub>)



The figures detail the source apportionment results for NO<sub>x</sub> concentrations at modelled receptors for three scenarios:

- The average NO<sub>x</sub> contributions across all modelled locations representative of sensitive human exposure (called ‘receptors’). This provides useful information when considering possible action measures to test and adopt.
- The locations where the NO<sub>2</sub> annual mean objective of 40 µg/m<sup>3</sup> has been predicted to be exceeded. This will inform potential prominent NO<sub>x</sub> contributors present within the identified area of exceedances and, therefore, be useful when testing and adopting action measures.

- The location where the maximum road NO<sub>x</sub> concentration has been predicted within the AQMA. This is likely to be in the area of most concern within the AQMA and so acts as a good place to test and adopt action measures. Any gains predicted by the action measures are likely to be greatest at this location and so would not represent the greatest gains across the whole modelled area.

As the NO<sub>2</sub> annual mean concentration of 40 µg/m<sup>3</sup> was only predicted to have been exceeded at one modelled receptor location, the source apportionment analysis results are the same for receptor locations where the NO<sub>2</sub> concentration is above 40 µg/m<sup>3</sup> and the receptor location of the maximum NO<sub>x</sub> concentration.

The percentage contributions of each vehicle class are relatively similar for the average of all modelled receptors and at receptor locations where the annual mean is predicted to exceed the 40 µg/m<sup>3</sup> annual limit. As the annual mean threshold was only exceeded at one receptor location, the source apportionment results for receptor locations above 40 µg/m<sup>3</sup> also applies to the receptor location with the maximum NO<sub>x</sub> concentration.

The NO<sub>x</sub> source apportionment exercise demonstrates a relative consistent ranking of contributing vehicle classes exhibited through each scenario, with diesel cars and diesel LGVs found to be the main contributors to total road NO<sub>x</sub> concentrations across Southend-on-Sea. This suggests that the volume of traffic is considered to be the key contributor to elevated levels of NO<sub>2</sub> annual mean concentrations within the AQMA.

### 4.1 Required Reduction in Emissions

In line with the methodology presented in Box 7.6 of Technical Guidance(22), the necessary reduction in road NO<sub>x</sub> emissions required to bring the current AQMA into compliance is shown in Table 4.1. This has been completed at the maximum annual mean concentration location, either monitored or modelled within the AQMA. The procedure calculates the required reduction of road NO<sub>x</sub> to achieve a total NO<sub>2</sub> concentration of 40 µg/m<sup>3</sup>. However, to account for uncertainties with dispersion modelling and the degree of potential inaccuracy with diffusion tube monitoring, a more stringent figure of 36 µg/m<sup>3</sup> has been used (10% lower than the annual mean AQS objective). This will ensure that the AQMA 2 Victoria Avenue is revoked once Southend-on-Sea City Council are confident that the NO<sub>2</sub> concentrations are sufficiently below the AQS objective. In order to achieve a concentration of 36 µg/m<sup>3</sup>,

the road NO<sub>x</sub> concentration needs a reduction of 20.2 µg/m<sup>3</sup> (37.0%). The calculation to obtain such value is shown in Table 4.1.

**Table 4.1 – NO<sub>x</sub> Reduction Required within AQMA 2 Victoria Avenue**

<b>Metric</b>	<b>Concentration (µg/m<sup>3</sup>)</b>
Background NO <sub>2</sub> Concentration	18.8
Road NO <sub>x</sub> at 45 µg/m <sup>3</sup> NO <sub>2</sub>	54.5
Road NO <sub>x</sub> at 36 µg/m <sup>3</sup> NO <sub>2</sub>	34.3
Required Reduction	20.2 (37.0%)

## 5 Key Priorities

Based on the information presented within Section 4, and the measures listed within Section 7, the following have been defined by Southend-on-Sea City Council as key areas for action.

### 5.1 Priority 1 – Road Transport

The main source of air pollution leading to the declaration of AQMA 2 Victoria Avenue is road transport emissions. Therefore, reducing the emissions from road transport is the key priority. The approach focuses on areas that Southend-on-Sea City Council have direct control over, so that measures can be implemented without restriction.

Although the roads contributing to high pollutant levels which result in exceedances of the annual average NO<sub>2</sub> objective are not managed by National Highways, this relevant public authority has been engaged with whilst for the purposes of preparing this AQAP.

Transport planning and infrastructure improvements can be achieved through both the Association of South Essex Local Authorities and 'A Better Southend'. Workplace and school travel plans are also to be promoted by Southend-on-Sea City Council. In order to directly reduce the emissions from road transport, alternative forms of transport are to be encouraged (i.e., walking/cycling) and facilitated through infrastructure improvements (i.e., installation of electrical vehicle (EV) charging points to promote the uptake of EVs). Emissions from road transport are also reduced through measures contained within the local transport plan, which ensures air quality and transport policies are aligned. In specific relation to AQMA 2 Victoria Avenue, the aim is to reduce vehicle emissions by enforcing an anti-idling policy. This is to be specifically effective along areas of Victoria Avenue, in particular the section adjacent to Roots Hall Football Stadium, where there is a section along the road for vehicles to park and idle their engines. This area is likely to be frequently used by vehicles idling their engines as the Smartway Driving School is located along this section of road.

### 5.2 Priority 2 – Land Use Planning

The local plan and its policies set out the considerations that will be applied by Southend-on-Sea City Council for all development proposals. Southend-on-Sea City

Council will work with developers and partner organisations to ensure the delivery of infrastructure, services and community facilities necessary to develop and maintain sustainable communities. This will not only apply to air quality but also all other relevant environmental aspects. Furthermore, Southend-on-Sea City Council will look to secure funding support for initiatives aimed at reducing air pollution either directly or indirectly via S106 agreements and the Community Infrastructure Levy.

### 5.3 Priority 3 – Connected & Smart City

Southend-on-Sea City Council are exploring the use of future network technologies, which will form the foundation of future smart service and smart city developments. Full fibre technology is being installed by City Fibre, in partnership with Vodafone, in over 64,000 homes across Southend-on-Sea. Key to this is the implementation of the strategic platform, which will form the basis of future deployments and be the prime enabler for moving towards a smart, digital city, whilst hosting and analysing the data feeding into the Smart Southend Portal.

Initiatives that have a beneficial impact on air quality include measures such as ‘smart parking’. By being able to find a parking space with ease reduces the need for driving around looking for somewhere to park, which therefore reduces the emissions from road traffic. Smart solutions such as this are effective measures that, although not primarily designed to, indirectly reduces the pollutant concentration.

### 5.4 Priority 4 – Public Health & Raising Awareness

As detailed within Section 3.1, air pollution has a detrimental impact on public health. Therefore, improving air quality within the borough is a key priority. The main sources of air pollution in areas of existing exposure in Southend-on-Sea are from vehicle emissions. Aside from restricting vehicle usage through measures such as Clean Air Zones and Low Emission Zones, the most effective way to achieve a reduction in the level of vehicle activity is to influence, and change, the attitudes and behaviours of the population towards travel. By raising awareness of the health impacts of an individual’s choice of travel (i.e., private vehicle use over public transport), Southend-on-Sea City Council hope the residents of Southend-on-Sea will be motivated to change their mode of transport to a more sustainable form of travel. Raising awareness of the health impacts of air pollution, especially to high risk and vulnerable groups, will be done

through Southend-on-Sea City Council's website and social media pages, as well as via the 'Livewell Southend' page. Southend-on-Sea City Council also plan to issue alerts and messages to people on poor air quality days.

Measures will include education and awareness raising, alongside schemes which incentivise change. Improving air quality to protect public health requires changes to be made across the whole of Southend-on-Sea, not just within the AQMA.

### **5.5 Priority 5 – Climate Resilience & Sustainable Innovation**

Southend-on-Sea City Council are committed to building resilience and facilitating sustainable innovation against the impacts of future climate change. Key to this is the implementation of the 'Green City Action Plan' and the 'Climate Resilience and Urban Green Strategy (2021-2025)'. These two strategies are a key priority in delivering an ambitious urban greening programme to resilience to climate change. Despite the fact that increasing the number of green spaces is primarily to reduce the impacts of climate change, there is also an additional co-benefit to air quality. This can be either directly through absorbing gaseous pollutants or indirectly by encouraging a modal shift in travel behaviour (i.e., green spaces to encouraging walking and cycling).

### **5.6 Priority 6 – Air Quality Monitoring**

Currently, the concentration of NO<sub>2</sub> is monitored by Southend-on-Sea City Council across a passive diffusion tube network at 45 locations and an automatic monitoring station at Chalkwell Park, which forms part of the Automatic Urban and Rural Network (AURN). Air quality monitoring is a useful way to continually assess the extent of air pollution and identify any area of concern within Southend-on-Sea. It also helps to measure the success of the measures implemented as part of this AQAP, and thus acts as an evidence base for the AQMA to be revoked once the monitoring shows compliance with the AQS objective for which the AQMA was declared for.

## 6 Development and Implementation of Southend-on-Sea City Council’s AQAP

### 6.1 Consultation and Stakeholder Engagement

In developing this AQAP, Southend-on-Sea City Council have worked with other local authorities, agencies, businesses and the local community to improve air quality. Schedule 11 of the Environment Act 2021 requires local authorities to consult the bodies listed in Table 6.1. The responses provided to Southend-on-Sea City Council’s consultation stakeholder engagement on the development of this AQAP are given in Appendix A.

**Table 6.1 – Consultation Undertaken by Southend-on-Sea City Council**

Consultee	Consultation Undertaken
The Secretary of State	Yes
The Environment Agency	Yes
The highways authority	Yes
All neighbouring local authorities	Yes
Other public authorities as appropriate, such as Public Health officials	Yes
Bodies representing local business interests and other organisations as appropriate	Yes

Given the size and nature of the AQMA 2 Victoria Avenue, the above consultation is considered appropriate, engaging with the relevant bodies as necessary. In addition, Southend-on-Sea City Council also undertook the following stakeholder engagement:

- Public opinion via Southend-on-Sea City Council’s website.
- Letters distributed directly to households within AQMA 2 Victoria Avenue.

## 6.2 Steering Group

Once the AQAP has been adopted, a new Steering Group will be established, and will be composed mainly of Southend-on-Sea City Council officers from those services with an interest or potential impact on air quality. The Steering Group will also include those who may have an influence on the measures being considered. The members of the Steering Group will include:

- Senior officers from strategic transport planners;
- Local highway authorities;
- Land use planners;
- Environmental protection; and
- Climate Change officers.

It is the aim of this steering group to continue to communicate at regular intervals following the adoption of the AQAP. This is essential to provide progress reports on individual actions in relation to the AQAP measures, discuss any key lessons learnt from the continual implementation of the measures and continue to discuss any new ideas in terms of future measures and actions. Of utmost importance, the steering group should discuss and reasons for why some actions are not working as effectively as intended or why some actions are proving more difficult to implement than expected.

## 7 AQAP Measures

Through the development of the AQAP, a wide range of measures aimed at improving air quality within AQMA 2 Victoria Avenue have been considered. It is important to note that although the primary focus is on the AQMA, these measures should contribute to improving air quality across wider areas of Southend-on-Sea and in AQMA 1 The Bell Junction. TG(22) states that an AQAP should be adapted to every local situation and, most importantly, should be seen as part of an integrated package of measures, particularly in relation to linking with other key policy areas.

After having undertaken a source apportionment exercise to determine the vehicle classes which are predominantly responsible for air pollution within the AQMA, the resultant action measures contained within this AQAP are considered to be the most effective. These measures are also the most feasible to implement and cost-effective to pursue in terms of the potential air quality improvements within the AQMA and across wider areas of Southend-on-Sea. Given that road traffic has been identified as the principal source of NO<sub>x</sub> emissions and, therefore, NO<sub>2</sub> concentrations within the AQMA, the measures presented within Table 7.1 focus on the promotion of sustainable transport, traffic management improvements and improving community awareness to facilitate behavioural changes.

Table 7.1 shows the Southend-on-Sea City Council AQAP measures. 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 emissions and/or concentration reduction, where possible;
- The timescale for implementation; and
- How progress will be monitored.

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

Table 7.1 – Air Quality Action Plan Measures

Measure 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
<b>Strategic Transport Policy</b>															
1	Association of South Essex Local Authorities	Regional Transport Planning and Infrastructure	Regional Transport Planning and Infrastructure	2022	2022	Basildon, Brentwood, Castle Point, Rochford, Southend, and Thurrock	Internal, DfT	No	Funded	£100k	Implementation	Indirect	Internal PI	Planning phase Transport East Transport Strategy	Aims to reduce air pollution and ensure improvements in air quality
2	“A Better Southend” Better Sustainable Transport and Mobility Management	Traffic Management, Transport Planning and Infrastructure	Promoting Travel Alternatives	2021	Ongoing	SCC	Internal	No	Funded	£100k	Implementation	Indirect	Internal KP2	Ongoing	Corporate priority action
3	Better Networks and Traffic Management Schemes	Traffic Management	Transport Planning and Infrastructure	2022	Ongoing	SCC	Internal, DfT	No	Funded	£1m	Implementation	Not quantifiable	Internal KP2	Ongoing	LTP3 priority action
4	Better Partnership, Engagement and Sponsorship to Support Greater Efficiencies in Funding and Delivery	Transport Planning and Infrastructure	Promoting Travel Alternatives	2021	Ongoing	SCC	Internal, External	No	Funded	£50k	Implementation	Not quantifiable	Completion of Projects KP2	Ongoing	LTP priority action
5	Better Operation of Traffic Control, Information and Communication Systems including Intelligent Transport Systems and Urban Traffic Management Control (UTMC)	Traffic Management	UTC, Congestion Management, Traffic Reduction	2020	Ongoing	SCC, Siemens	Internal, DfT	No	Funded	£500k	Ongoing	Expected but not quantifiable	Internal KP2	Ongoing	Corporate priority action

Measure 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
6	A127 AQMA Strategic Highway Improvement, The Bell Junction	Traffic Management, Transport Planning and Infrastructure	UTC, Congestion Management, Traffic Reduction	2021	2022	SCC, DfT	SCC, DfT	No	Funded	£1m	Completed	Medium-concentration determined by modelling study commissioned	Completion of project	Modelling and monitoring of air quality and traffic	Corporate priority action
7	Promote Workplace, School and Personalised Travel Plans	Traffic Management, Transport Planning and Infrastructure	Promoting Travel Alternatives	2021	Ongoing	SCC, Schools, Businesses	SCC, DfT	No	Funded	£50k	Ongoing	Indirect	Monitoring adoption rate	Implementation	Corporate priority action
8	Forward Motion – South Essex Active Travel Project”	Promoting Low Emission, Sustainable Transport and Travel Alternatives	Promoting Travel Alternatives	2020	Ongoing	SCC, Essex County Council, Thurrock Council	Completion of projects	No	Funded	£3m	Implementation	Expected but not quantifiable	Implementation	Ongoing	£3m funding source secured in 2017
9	Promote and Encourage Cycling and Walking	Promoting Travel Alternatives	Promoting Travel Alternatives	2019	Ongoing	SCC, Local Businesses	Internal, DfT	No	Funded	£500k	Ongoing	Not quantifiable	Uptake levels	Ongoing	Implemented via “Forward Motion”, Cycle2Work, Trial a Mile, Forward Motion initiatives
10	Promote Train Travel	Alternatives to Private Vehicle Use	Promoting Travel Alternatives	2020	Ongoing	SCC, DfT	Internal, DfT	No	Funded	£100k	Implementation	Not quantifiable	Uptake levels	Ongoing	Implemented via “Forward Motion”
11	Encourage and Facilitate Home Working	Promote Travel Alternatives	Encourage and Facilitate Home Working	2022	Ongoing	SCC	Internal	No	Funded	£10k	Implementation	Not quantifiable	Uptake levels	Ongoing	N/A
12	Encourage Development of Car Clubs via Section 106 Agreements and Motion Hub	Alternatives to Private Vehicle Use	Promoting Travel Alternatives, Car Clubs	2020	Ongoing	SCC	Internal	No	Funded	£10k	Ongoing	Not quantifiable	Uptake levels	Ongoing	N/A
13	Promote Uptake of Sustainable Transport such as Electric Vehicles and Installation of EV Charging Points	Promoting Low Emission Transport	Procuring Alternative Refuelling Infrastructures to Promote Low Emission Vehicles and Electric Vehicle Charging Points	2021	Ongoing	SCC	Internal	No	Funded	£50k	Implementation	Low – a reduction in NO <sub>2</sub> concentrations of 0.4-0.6 µg/m <sup>3</sup>	Uptake levels	Promotional events completed. Two EV charging points installed. Working with local businesses.	N/A

Measure 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
14	Provision of Electric Cars for Staff Business and Private Use	Promoting Low Emission Transport	Procuring Alternative Refuelling Infrastructures to Promote Low Emission Vehicles and Electric Vehicle Charing Points	2021	Ongoing	SCC	Internal	No	Funded	£100k	Implementation	Low – a reduction in NO <sub>2</sub> concentrations of 0.4-0.6 µg/m <sup>3</sup>	Uptake and number of vehicles	Two cars currently available	Looking to increase number of cars available to 5 cars Green Fleet Strategy
15	Introduce Green Zones outside Schools ('School Streets')	Transport Planning and Infrastructure	Promoting Travel Alternatives	2021	Ongoing	SCC, Schools	Internal	No	Funded	£50k	Implementation	Basic indicative air quality monitoring, remote sensors	Number of zones implemented	Adopted by 3 schools	Schemes to be expanded
16	Anti-Idling Zone introduced along Victoria Avenue	Traffic Management	Anti-Idling Enforcement	2023	Ongoing	SCC	Internal	No	Funded	< £10k	Planning	Reduction in NO <sub>2</sub> concentration	Number of fixed penalty notices issued NO <sub>2</sub> concentration	Planning	N/A
17	Bus Service Improvement Plan	Promoting Low Emission Transport	Public Vehicle Procurement – Prioritising Uptake of Low Emission Vehicles	2023	Ongoing	SCC	Internal	No	Funded	< £10k	Planning	Percentage contribution of bus fleet to NO <sub>2</sub> concentrations	Number of buses being Euro 6 with stop-start technology	Working with bus operators through the Bus Service Improvement Plan and Enhanced Partnership	N/A
<b>Land Use Planning</b>															
18	Secure Funding for Air Quality Action Planning, Monitoring and Initiatives aimed at Reducing Air Pollution Directly or Indirectly via Section 106 Agreements and the Community Infrastructure Levy	Policy Guidance and Development Control	Air Quality Planning and Policy Guidance	2021	Annual, Ongoing	SCC	Internal	No	Funded	£10k	Implementation	N/A	N/A	Implementation	N/A
19	Promote Green Infrastructure Initiatives	Policy Guidance and Development Control	Green Infrastructure, Other	2022	Ongoing	SCC	Internal	No	Funded, Partially Funded	£10k	Implementation	Not quantifiable	Uptake	Implementation	N/A

Measure 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
<b>Connected and Smart</b>															
20	Intelligent Hub-Smart Connected Cities	Transport Planning and Infrastructure	Other	2018	2018	SCC	Internal, BT	No	Funded	£1m	Implementation	Not quantifiable	Corporate policy	-	Full fibre technology is in place, being implemented by City Fibre. The project to provide full fibre to the home solution for up to 64,000 homes within Southend-on-Sea is underway by City Fibre in partnership with Vodafone, and due for completion by March 2021
21	Provision of Future Network Technologies	Transport Planning and Infrastructure	Other	2021	2022	LPWAN PoC	Internal, Local Business Consortium	No	Funded	£1m	Implementation	Not quantifiable	Corporate policy	Discussions around participation in an IoT for LAs / mobile networks around 5G deployment	Enable deployment of IoT solutions, such as air quality sensors or smart traffic management based on real-time air quality data.
<b>Public Health and Raising Awareness</b>															
22	DfT APDS Smart Parking Project	Transport Planning and Infrastructure	Other	2019	2022	SCC, ICT, Highways	Internal	No	Funded	£50k	Potential air quality impact low. This will act as an enabler for smart parking services, potentially reducing the time vehicles spend either looking, or idling whilst waiting for parking spaces	-	-	Review of all relevant transport data standards Review of parking data within existing systems System / data-flow mapping to understand the system landscape Best practice research including understanding of how best-practice use cases are currently being achieved (e.g. utilising ANPR/DVLA database)	Ability to pull data from existing parking systems and share publicly in an open format

Measure 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
23	Implement Domestic Solid Fuel Regulations.  Raising Awareness with regard to Air Pollution in General (e.g. Domestic Biomass Burners, Health Effects, Travel Choices, Behavioural Changes etc) via Social Media, SCC's Website, and Clear Message Health Alerts	Promoting Sustainable Travel and Public Health Information	Public Information	2021	Ongoing	SCC	Internal	No	Funded	£10k	Implementation	Not quantifiable	N/A	Updates at air quality meetings and in annual public health report	Links to Defra and SEAT Active Travel Plan
24	Raising Awareness of High Risk Groups via e.g. Social Media, Live-Well Southend and Health Alerts such as on Poor Air Quality Days	Public Health Information on Using Air Quality Information	Public Information	2021	Ongoing	SCC	Internal	No	Funded	£10k	Implementation	Not quantifiable	N/A	Introduce digital air quality information tool	Target low-cost alternative and linkage to GP disease register  Potential air quality impact – behavioural change
25	Raise Awareness and Provide Practical Guidance for Domestic Solid Fuel Burning	Public Health Information on Using Air Quality Information	Public Information	2021	Ongoing	SCC	Internal	No	Funded	£10k	Implementation	Not quantifiable	N/A	Social media campaigns	Potential air quality impact – behavioural change
26	Promote National Clean Air Day Annually	Promoting Travel Alternatives and Public Health Campaign	Public Information	2021	Annual, Ongoing	SCC, Public Schools, GAP	Internal	N/A	Funded	£10k	Potential air quality impact – changing your people's behaviour	Not quantifiable	N/A	Uptake, school participation in campaigns  Promoted through <a href="#">Clean Air Hub – Your Say Southend</a>	GAP resources
27	Promote Global Action Planning Clean Air Framework for Schools	Policy Guidance (Public Health)	Public Information	2021	2022	SCC, GAP	Internal	No	Funded	£10k	Potential air quality impact – behavioural change	Not quantifiable	Completion update in annual public health report	Planning	N/A

Measure 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
<b>Climate Resilience and Sustainable Innovation</b>															
28	Implementation of the Green City Action Plan	Policy Guidance	Other	2021	2023	SCC	Internal	No	Funded	£10k	Implementation	Not quantifiable	Adoption and implementation	Ongoing	Climate resilience, cool towns, nature smart cities
29	Net Zero Strategy	Policy Guidance	Other	2022	2023	SCC	Internal	No	Funded	£10k	Implementation	Not quantifiable	Adoption and implementation	Adoption	N/A
30	Climate Resilience and Urban Greening Strategy	Policy Guidance	Other	2023	2023	SCC	Internal	No	Funded	£10k	Implementation	Not quantifiable	Adoption and implementation	Adoption and implementation	N/A
31	Nature Smart Cities (Interreg 2 Seas)	Policy Guidance	Other	2019	2023	SCC and wider UK	Interreg 2 Seas and SCC	No	Funded	>£10k	Delivery of high quality green infrastructure that has a positive impact on air quality	Not quantifiable	Adoption and implementation	Pilot project (Launchpad) with green infrastructure integrated into the building. Business model finalised	Business model has been introduced over 30 local authorities and its use will improve air quality across the U
32	Cool Towns (Interreg 2 Seas)	Policy Guidance	Other	2019	2022	SCC	Interreg 2 Seas and SCC	No	Funded	>£10k	Delivery of high quality green infrastructure that has a positive impact on air quality	Not quantifiable	Adoption and implementation	Pilot project complete and community engagement ongoing	N/A
33	Apply for Green Infrastructure Funding Bids to help towards Establishing Southend-on-Sea as a 'Nature Smart City'	Policy Guidance and Development Control	Other	2021	Ongoing	SCC	Level of Funding Secured	No	Funded	£10k	Implementation	Not quantifiable	Number of bids secured	Ongoing	Climate resilience, cool towns, nature smart cities

## Appendix A: Response to Consultation



### Length of Consultation

7 May – 12 August 2021



### People Viewing Document

431



### Responses to Consultation

183 (33 online)



### No Response to Consultation

333

### Key Questions:

**1)** Are any significant actions/initiatives already being undertaken or committed to that could improve air quality? **No = 76%**

Majority answering no shows limited awareness. Of those saying yes, mention of road improvements, such as ‘The Bell Junction’ and ‘Kent Elms Project’.

**3)** Are any significant actions/initiatives missing that could improve air quality? **Yes = 91%**

Suggested measures for inclusion included encourage uptake of EVs, better cycle lanes, and preserving/enhancing the number of green spaces.

**5)** Are any of the actions listed within the AQAP no longer of any relevance? **Yes = 9%**

Majority answering no indicates need for a range of new measures to be considered as public feel current measures not working or are not applicable.

**7)** Are there any barriers that need to be overcome for us to take up these measures in the plan? **Yes = 70%**

Barriers that need to be overcome included road infrastructure improvements to ease traffic flow and public awareness of air quality issues is very low.

# 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
Sustainable Innovation	Urban Innovation Action (UIA) Innovate Air Quality Initiatives	Funding Bid Unsuccessful
Public Health	Health Impact Assessment	Effective Alternative Exists

## 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
HGV	Heavy Goods Vehicles
LAQM	Local Air Quality Management
LGV	Large Goods Vehicles
NO <sub>2</sub>	Nitrogen Dioxide
NO <sub>x</sub>	Nitrogen Oxides
PM <sub>10</sub>	Airborne particulate matter with an aerodynamic diameter of 10µm (micrometres or microns) or less
PM <sub>2.5</sub>	Airborne particulate matter with an aerodynamic diameter of 2.5µm or less

## References

- Local Air Quality Management Technical Guidance LAQM TG(22). August 2022. Published by Defra in partnership with the Scottish Government, Welsh Assembly Government and Department of the Environment Northern Ireland.
- Local Air Quality Management Policy Guidance LAQM PG(22). August 2022. Published by Defra in partnership with the Scottish Government, Welsh Assembly Government and Department of the Environment Northern Ireland.
- Public Health England - Public Health Outcomes Framework (D01). Available at: <https://fingertips.phe.org.uk/profile/public-health-outcomes-framework>
- Southend-on-Sea City Council Annual Status Report (2022). Published by Southend-on-Sea City Council.
- Southend-on-Sea City Council Green City Action Plan (2021). Available at: <https://democracy.southend.gov.uk/documents/s42573/18%20-%20Appendix%201%20-%20Green%20City%20Action%20Plan.pdf>