




**Southend-on-Sea**  
City Council

# 2024 Air Quality Annual Status Report (ASR)

In fulfilment of Part IV of the Environment Act 1995  
Local Air Quality Management, as amended by the  
Environment Act 2021

Date: June 2024

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## Executive Summary: Air Quality in Our Area

The 2024 Annual Status Report is designed to provide the public with information relating to local air quality in Southend, to fulfil Southend City Council's statutory duty to review and assess air quality within its area, and to determine whether or not the air quality objectives are likely to be achieved.

In 2023, Southend City Council measured **no** exceedances of the Air Quality Objectives at relevant exposure.

### Air Quality in Southend

Breathing in polluted air affects our health and costs the NHS and our society billions of pounds each year. Air pollution is recognised as a contributing factor in the onset of heart disease and cancer and can cause a range of health impacts, including effects on lung function, exacerbation of asthma, increases in hospital admissions and mortality. In the UK, it is estimated that the reduction in healthy life expectancy caused by air pollution is equivalent to 29,000 to 43,000 deaths a year<sup>1</sup>.

Air pollution particularly affects the most vulnerable in society, children, the elderly, and those with existing heart and lung conditions. Additionally, people living in less affluent areas are most exposed to dangerous levels of air pollution<sup>2</sup>.

Table ES 1 provides a brief explanation of the key pollutants relevant to Local Air Quality Management and the kind of activities they might arise from.

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<sup>1</sup> UK Health Security Agency. Chemical Hazards and Poisons Report, Issue 28, 2022.

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

**Table ES 1 - Description of Key Pollutants**

Pollutant	Description
Nitrogen Dioxide (NO <sub>2</sub> )	Nitrogen dioxide is a gas which is generally emitted from high-temperature combustion processes such as road transport or energy generation.
Sulphur Dioxide (SO <sub>2</sub> )	Sulphur dioxide (SO <sub>2</sub> ) is a corrosive gas which is predominantly produced from the combustion of coal or crude oil.
Particulate Matter (PM <sub>10</sub> and PM <sub>2.5</sub> )	<p>Particulate matter is everything in the air that is not a gas.</p> <p>Particles can come from natural sources such as pollen, as well as human made sources such as smoke from fires, emissions from industry and dust from tyres and brakes.</p> <p>PM<sub>10</sub> refers to particles under 10 micrometres. Fine particulate matter or PM<sub>2.5</sub> are particles under 2.5 micrometres.</p>

Southend is located in south-east Essex, forty-two 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 in the City is road traffic emissions from major roads, notably the A13, A127 and A1159. Other pollution sources including commercial, industrial and domestic emissions make a contribution to background pollutant concentrations.

Southend-on-Sea City Council has declared two Air Quality Management Areas (AQMA).

- AQMA1: centred at the junction between Prince Avenue, Hobblythick Lane and Rochford Road (also known as “The Bell Junction”) that was declared in 2016.

There have been no exceedances of the air quality objectives for four years but it is not yet appropriate to undertake revocation of the AQMA.

- AQMA2: a short section of the A127 Victoria Avenue and adjacent to the junctions with Priory Crescent, Fairfax Drive, East and West Street that was declared in 2020.

There have been no exceedances of the air quality objectives for six years and we are to carry out assessment of the historical and current monitoring data and outstanding actions within the air quality action plan with a view to undertaking revocation.

## Actions to Improve Air Quality

### Clean Air for Schools Project

We were awarded a DEFRA grant of £256,285 to take on an air quality project over the next two years. It is part of our commitment to improving air quality across Southend.

The project focuses on eleven schools that sit along the main A13 and A127, and within the Air Quality Management Areas (AQMAs)

#### Project Aims

- air quality monitoring to determine PM2.5 and NO2 levels at these schools.
- web linked information at schools showing and providing data to schools.
- school air quality audits and assessments of specific school activities and interventions.
- engagement with schools on actions, intervention options and campaigns on air quality, reducing pollution exposure, safer, more active travel, modal shift.
- funding for interventions, activities and local campaigns for schools
- wider anti-idling campaign for schools.
- review post campaign and intervention impacts through a final measurement campaign.

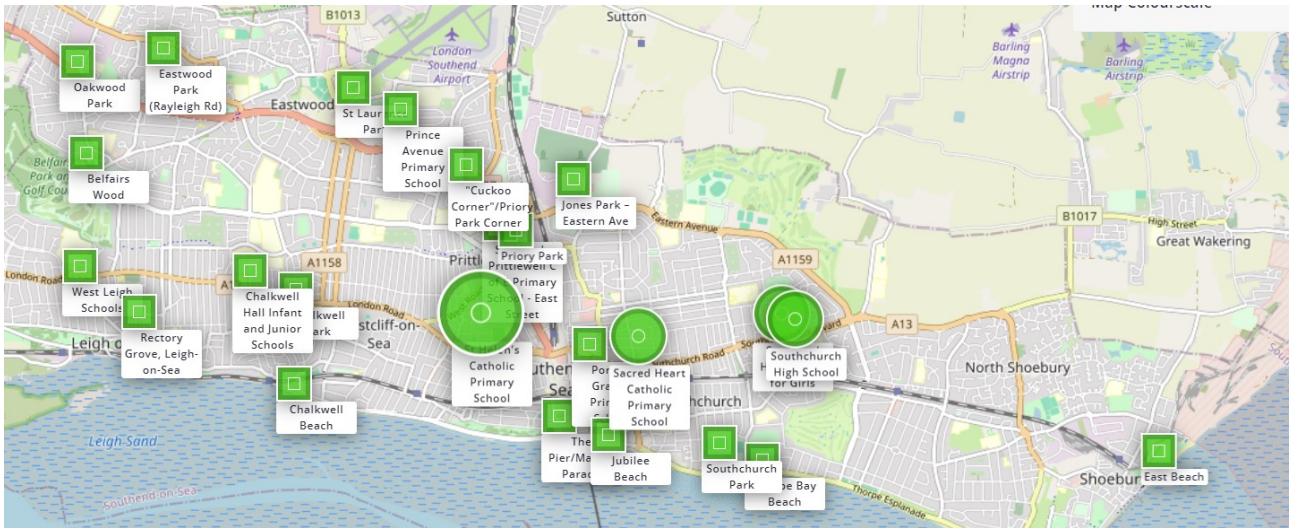
**Figure i.1 – Clean Air for Schools Location of Air Quality Sensor**





The installed devices will collect baseline air quality data which can be accessed via our web [portal](#).

**Figure i.2 - Southend-on-Sea Clean Air for Schools Web Portal**



We have sent out a Travel Survey to all participating schools. This will be shared with parents to gain an insight into travel habits.

We will be putting together a report from each school. This will be made up of:

- the data obtained from the monitoring devices
- information from the site-specific air quality audits

It will also, include looking at what potential mitigation measures could be installed, if necessary.

We will be delivering an anti-idling campaign as part of the project.

We will be working with the participating schools and our Parks Team to apply for the Woodland Trust's free trees for schools program. This scheme is open to all schools and community groups.

### **School Streets Scheme**

Southend-on-Sea City Council has implemented the School Streets scheme permanently at the West Leigh Junior School and West Leigh Infants Schools.

A School Street restricts access to motorised traffic on the roads outside schools during school drop-off and pick-up times during term time only. The scheme aims to create a safer and less congested street around the school and encourages active modes of transport and reduced pollution.

There have been calls for the scheme to be extended to other Southend schools.

## Clean Air Day 2023

Clean Air Day is the UK's largest air pollution campaign since 2017, engaging thousands of people at hundreds of events, and reaching millions more through the media.

In Southend, the aim of the campaign is to inform as many residents and visitors as possible about the sources and health impacts of air pollution, what they can do to protect their health, and to encourage people to do something to reduce air pollution on Clean Air Day and in the future.

Here's why Clean Air Day matters



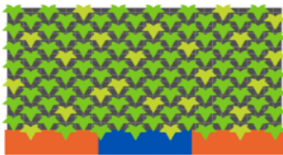
Focuses attention on air pollution.

By all acting together on the same day, Clean Air Day cuts through to new audiences.



Helps to improve public understanding and increase levels of air pollution busting behaviours.

Most people (90%) now report doing at least one thing to help reduce outdoor air pollution.



Showcases that a cleaner air future is both possible and desirable.

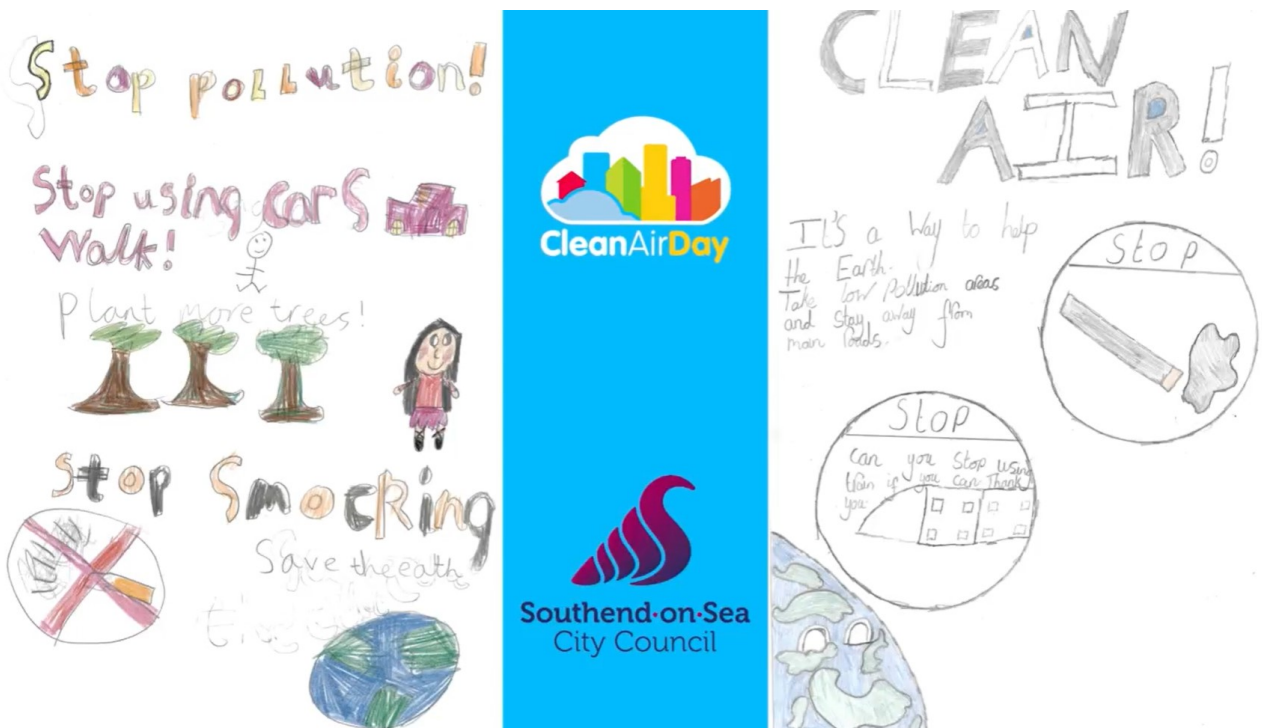
As well as more EV charging points and e-bikes on the roads, we are also seeing other innovative new ways of doing things, such as the NHS riverboat delivery service



Demonstrates large-scale support for clean air, giving decision-makers a mandate to implement the system changes required.

82% of people think that air pollution should be a **priority** for the UK an increase of 11% over the last three years.

Clicking on the image below will play a video which shows children across Southend sharing their pledges, ideas and hopes for Clean Air Day 2023.



## Conclusions and Priorities

Southend-on-Sea City Council have concluded that:

- There are no new developments that will have a significant impact on air quality.
- No exceedances of the air quality objectives have been measured.
- AQMA1 The Bell Junction has had no measured exceedances for four years and the maximum measured annual mean NO<sub>2</sub> concentration within the AQMA was 34.1ug/m<sup>3</sup>.
- The Southend-on-Sea City Council AQAP (AQMA No.1 – The Bell Junction) Detailed Modelling Study has modelled the maximum annual mean NO<sub>2</sub> concentration at relevant exposure within the AQMA to be 39.8ug/m<sup>3</sup> and that it is not yet appropriate to revoke the AQMA.
- AQMA2 Victoria Avenue has had no exceedances for six years.

For 2024, Southend-on-Sea City Council's priority is to:

- Expand the diffusion tube network along Priory Crescent, adjacent to the residential properties is expanded due to elevated modelled concentrations in this area.
- Focus on delivering the air quality measures that form the Air Quality Action Plan
- Continue operating the Clean Air for Schools project
- We are to carry out assessment of the historical and current monitoring data within AQMA2, outstanding actions within the air quality action plan with a view to undertaking revocation.

## Local Responsibilities and Commitment

This Annual Status Report was prepared by Public Health and Protection Services of Chelmsford City Council on behalf of Southend-on-Sea City Council.

This ASR has been approved by Director for Public Protection

This ASR has been signed off by the Director of Public Health.

If you have any comments on this ASR please send them to Southend-on-Sea City Council at:

[Comments and Compliments](#) 01702 215000

Southend-on-Sea City Council

Civic Centre

Victoria Avenue,

Southend-on-Sea, Essex, SS2 6ER

LAQM Annual Status Report 2024



## Local Engagement and How to get Involved

### Essex Air

Southend-on-Sea City Council is a member of the Essex Air Quality consortium which along with Essex County Council launched the new Essex Air [website](#) on 28th November 2023 to raise awareness about air pollution in Essex. The website provides a pollution monitoring map and highlights simple actions that people can take to reduce emissions.

The website features a dedicated school zone with resources, activities, and games, an air pollution map, tips to reduce exposure to air pollution, and advice on changing travel habits to lessen exposure to pollution.

The [@EssexAir](#) feed provides localised weekly air pollution, weather and pollen forecasts.

**Essex Air**  
@EssexAir

Essex Air Quality 3 Day Forecast: MODERATE [#ozone](#) [#airpollution](#) forecast for Thursday and Saturday

Health advice: [airtext.info/health](http://airtext.info/health)

Always expect localised pollution alongside busy roads

	Thursday 09 May	Friday 10 May	Saturday 11 May
Air Pollution	<b>Moderate</b> Action may be required. Health effects are unlikely to require action. If unwell, contact GP.	<b>Low</b> No action required. Effects unlikely to be noticed.	<b>Moderate</b> Action may be required. Health effects are unlikely to require action. If unwell, contact GP.
UV	<b>Moderate</b> Protection required. Seek shade during midday hours, cover up and wear sunscreen.	<b>High</b> Protection Required. Seek shade during midday hours, cover up and wear sunscreen.	<b>High</b> Protection Required. Seek shade during midday hours, cover up and wear sunscreen.
Pollen	<b>Low</b>	<b>Low</b>	<b>Low</b>
Temperature	Max. Day 21°C/69°F	Max. Day 23°C/73°F	Max. Day 23°C/73°F
	Min. Night 12°C/53°F	Min. Night 12°C/53°F	Min. Night 12°C/53°F

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# 1 Local Air Quality Management

This report provides an overview of air quality in Southend during 2023. It fulfils the requirements of Local Air Quality Management (LAQM) as set out in Part IV of the Environment Act (1995), as amended by the Environment Act (2021), and the relevant Policy and Technical Guidance documents.

The LAQM process places an obligation on all local authorities to regularly review and assess air quality in their areas, and to determine whether or not the air quality objectives are likely to be achieved. Where an exceedance is considered likely the local authority must declare an Air Quality Management Area (AQMA) and prepare an Air Quality Action Plan (AQAP) setting out the measures it intends to put in place in order to achieve and maintain the objectives and the dates by which each measure will be carried out. This Annual Status Report (ASR) is an annual requirement showing the strategies employed by Southend-on-Sea City Council to improve air quality and any progress that has been made.

The statutory air quality objectives applicable to LAQM in England are presented in Table E.1.

## 2 Actions to Improve Air Quality

### 2.1 Air Quality Management Areas

Air Quality Management Areas (AQMAs) are declared when there is an exceedance or likely exceedance of an air quality objective. After declaration, the authority should prepare an Air Quality Action Plan (AQAP) within 18 months. The AQAP should specify how air quality targets will be achieved and maintained and provide dates by which measures will be carried out.

A summary of AQMAs declared by Southend Borough Council and the amendments for 2024 can be found in Table 2.1. Appendix D: Maps of Monitoring Locations and AQMAs provides maps of 2023 AQMAs and also the air quality monitoring locations in relation to the AQMAs.

The air quality objectives pertinent to the current AQMA designations are as follows:

- NO<sub>2</sub> annual mean objective

**Table 2.1 – Declared Air Quality Management Areas**

AQMA Name	Date of Declaration	Pollutants and Air Quality Objectives	One Line Description	Is air quality in the AQMA influenced by roads controlled by Highways England?	Level of Exceedance: Declaration	Level of Exceedance: Current Year (at Relevant Exposure)	Number of Years Compliant with Air Quality Objective	Name and Date of AQAP Publication	Web Link to AQAP
AQMA1 The Bell Junction A127	01/11/2016	NO <sub>2</sub> Annual Mean	An area encompassing properties at the junction of Prince Avenue, Rochford Road and Hopleythick Lane (THE BELL JUNCTION) extending eastwards including "Cuckoo Corner".	NO	49.55	No Exceedance	4	AQAP for AQMA 1, 2018	Visit <a href="http://www.southend.gov.uk">http://www.southend.gov.uk</a>
AQMA2 Victoria Avenue A127	01/12/2020	NO <sub>2</sub> Annual Mean	An area encompassing properties on Victoria Avenue at the junctions of Priory Crescent, Fairfax Drive, East and West St.	NO	41.45	No Exceedance	6	AQAP 2023-2027	

Southend-on-Sea City Council confirms the information on UK-Air regarding their AQMA(s) is up to date

It is not yet appropriate to revoke AQMA1 The Bell Junction A127. Measured diffusion tube data shows that the AQMA has been compliant with the air quality objectives however as described in Appendix C, an air quality modelling report has identified high NO<sub>2</sub> concentrations at a location where there is no diffusion tube monitoring, For 2024, additional monitoring is due to commence at this location.

We propose to revoke AQMA 2 Victoria Avenue, A127. The AQMA has been compliant with the air quality objectives for six years. The LAQM TG.22 technical guidance sets out that there should not be any declared AQMAs for which compliance with the relevant objective has been achieved for a consecutive five-year period.



## 2.2 Progress and Impact of Measures to address Air Quality in Southend

Defra’s appraisal of last year’s ASR concluded the report is well structured, detailed, and provides the information specified in the Guidance.

Details of all current measures completed, in progress or planned are set out in Table 2.2. Thirteen measures are included within Table 2.2, with the type of measure and the progress Southend-on-Sea City Council have made during the reporting year of 2023 presented. Where there have been, or continue to be, barriers restricting the implementation of the measure, these are also presented within Table 2.2.

**Table 2.2 – Progress on Measures to Improve Air Quality**

Measure No.	Measure Title	Category	Classification	Year Measure Introduced in AQAP	Estimated / Actual Completion Date	Organisations Involved	Funding Source	Defra AQ Grant Funding	Funding Status	Estimated Cost of Measure	Measure Status	Reduction in Pollutant / Emission from Measure	Key Performance Indicator	Progress to Date	Comments / Barriers to Implementation
1	Review and update the Air Quality Action Plan to align with the Council's 2050 and Green City ambitions.	Policy Guidance and Development Control	Air Quality Planning and Policy Guidance	2020	2021	Southend City Council	Southend City Council	NO	Funded	< £10k	Planning	n/a	Completion	Consultation underway to August 2021	
2	Review & Update Air Quality Action Plan - AQMA 1	Policy Guidance and Development Control	Air Quality Planning and Policy Guidance	2018	2024	Southend City Council	Southend City Council	NO	Funded	< £10k	Planning		Adoption of the AQAP	Currently under review for subsequent passage through the committee process	A review of the AQAP for AQMA 1 is now required
3	Air quality audit and sensor monitoring in 10 local schools to develop knowledge about local pollution to improve knowledge and develop interventions that will improve air quality and reduce pupil exposure to pollution.	Public Information	Other	2022	2025	Southend City Council	Defra	YES	Funded	£100k - £500k	Planning	n/a	n/a	Air Quality Grant Successful	
4	Manage and maintain Air Quality Steering Group	Other	Other	2022	2027	Southend City Council	Southend City Council	NO	Funded	< £10k	On-going	n/a	n/a	On-going	On-going
5	Support National Clean Air Day June 2023	Public Information	Other	2022	2023	Southend City Council and Global Action Planning	Southend City Council	NO	Funded	< £10k	Completed	n/a	n/a	Completed	Soft approach due to healthy schools co ordinator to engage with schools toolkit developed and escalated planning for 2024 continues
6	South Essex Councils	Transport Planning and Infrastructure	Other	2022	2022	Castle Point, Rochford, Southend, and Thurrock	Internal, DfT	No	Funded	£100k	Implementation	Indirect	Internal Performance Indicator	Transport East Transport Strategy Adopted by DfT	Aims to reduce air pollution and ensure

Measure No.	Measure Title	Category	Classification	Year Measure Introduced in AQAP	Estimated / Actual Completion Date	Organisations Involved	Funding Source	Defra AQ Grant Funding	Funding Status	Estimated Cost of Measure	Measure Status	Reduction in Pollutant / Emission from Measure	Key Performance Indicator	Progress to Date	Comments / Barriers to Implementation
															improvements in air quality
7	"A Better Southend" Better Sustainable Transport and Mobility Management	Promoting Travel Alternatives	Other	2021	Ongoing	SCC	Internal	No	Funded	£100k	Implementation	Indirect	Internal KP2	Ongoing	Corporate priority action
8	Better Networks and Traffic Management Schemes	Traffic Management	Other	2022	Ongoing	SCC	Internal, DfT	No	Funded	£1m	Implementation	Not quantifiable	Internal KP2	Ongoing	LTP3 priority action
9	Better Partnership, Engagement and Sponsorship to Support Greater Efficiencies in Funding and Delivery	Promoting Travel Alternatives	Other	2021	Ongoing	SCC	Internal, External	No	Funded	£50k	Implementation	Not quantifiable	Completion of Projects KP2	Ongoing	LTP priority action
10	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, Yunex, Swarco	Internal, DfT	No	Funded	£500k	Ongoing	Expected but not quantifiable	Internal KP2	Ongoing	Corporate priority action
11	A127 AQMA Strategic Highway Improvement, The Bell Junction	Traffic Management	UTC, Congestion management, traffic reduction	2021	2021	SCC, DfT	SCC, DfT	No	Funded	£1 million - £10 million	Completed	Medium concentration determined by modelling study commissioned	Completion of project	Complete	Complete
14	Promote and Encourage Cycling and Walking	Promoting Travel Alternatives	Promotion of cycling	2019	Ongoing	SCC, Local Businesses	Internal, DfT	No	Funded	£50k - £100k	Ongoing	Not quantifiable	Uptake levels	Ongoing	Implemented via "Forward Motion", Cycle2Work, Trial a Mile, Forward Motion initiatives
15	Promote Train Travel	Promoting Travel Alternatives	Intensive active travel campaign & infrastructure	2020	Ongoing	SCC, DfT	Internal, DfT	No	Funded	£1 million - £10 million	Implementation	Not quantifiable	Uptake levels	Ongoing	Implemented via "Forward Motion" and DfT Safer Roads fund (£3m)
16	Encourage and Facilitate Home Working	Promoting Travel Alternatives	Encourage / Facilitate home-working	2022	Ongoing	SCC	Internal	No	Funded	£10k	Implementation	Not quantifiable	Uptake levels	Ongoing	N/A

Measure No.	Measure Title	Category	Classification	Year Measure Introduced in AQAP	Estimated / Actual Completion Date	Organisations Involved	Funding Source	Defra AQ Grant Funding	Funding Status	Estimated Cost of Measure	Measure Status	Reduction in Pollutant / Emission from Measure	Key Performance Indicator	Progress to Date	Comments / Barriers to Implementation
17	Encourage Development of Car Clubs via Section 106 Agreements and Motion Hub	Alternatives to private vehicle use	Car Clubs	2020	Ongoing	SCC	Internal	No	Funded	£10k	Ongoing	Not quantifiable	Uptake levels	Ongoing	N/A
18	Promote Uptake of Sustainable Transport such as Electric Vehicles and Installation of EV Charging Points	Promoting Low Emission Transport	Public Vehicle Procurement - Prioritising uptake of low emission vehicles	2021	Ongoing	SCC	Internal	No	Funded	£50k	Implementation	Low – a reduction in NO2 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
19	Provision of Electric Cars for Staff Business and Private Use	Promoting Low Emission Transport	Public Vehicle Procurement - Prioritising uptake of low emission vehicles	2021	Ongoing	SCC	Internal	No	Funded	£100k	Implementation	Low – a reduction in NO2 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
20	Introduce Green Zones outside Schools ('School Streets')	Other	Other	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
21	Anti-Idling Zone introduced along Victoria Avenue	Traffic Management	Anti-idling enforcement	2023	Ongoing	SCC	Internal	No	Funded	< £10k	Planning	Reduction in NO2 concentration	Number of fixed penalty notices issued NO2 concentration	Planning	N/A
22	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 NO2 concentrations	Number of buses being Euro 6 with stop-start technology	Working with bus operators through the Bus Service Improvement Plan and Enhanced Partnership	Work is on-going. Barriers are bus operator cost to procure them and that passenger numbers still less than pre-covid figures.
23	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

Measure No.	Measure Title	Category	Classification	Year Measure Introduced in AQAP	Estimated / Actual Completion Date	Organisations Involved	Funding Source	Defra AQ Grant Funding	Funding Status	Estimated Cost of Measure	Measure Status	Reduction in Pollutant / Emission from Measure	Key Performance Indicator	Progress to Date	Comments / Barriers to Implementation
24	Promote Green Infrastructure Initiatives	Policy Guidance and Development Control	Other policy	2022	Ongoing	SCC	Internal	No	Funded, Partially Funded	£10k	Implementation	Not quantifiable	Uptake	Implementation	N/A
25	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 2Southend-on-Sea is underway by City Fibre in partnership with Vodafone, and due for completion by March 2021
26	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.
27	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	Ability to pull data from existing parking systems and share publicly in an open format

Measure No.	Measure Title	Category	Classification	Year Measure Introduced in AQAP	Estimated / Actual Completion Date	Organisations Involved	Funding Source	Defra AQ Grant Funding	Funding Status	Estimated Cost of Measure	Measure Status	Reduction in Pollutant / Emission from Measure	Key Performance Indicator	Progress to Date	Comments / Barriers to Implementation
														currently being achieved (e.g. utilising ANPR/ DVLA database)	
28	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 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 Low Emission Plant	Other Policy	2021	Ongoing	SCC	Internal	No	Funded	£10k	Implementation	Not quantifiable	N/A	Updates at air quality meetings and in annual public health report quality meetings and in annual public health report	Links to Defra and SEAT Active Travel Plan
29	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 Information	Via other mechanisms	2021	Ongoing	SCC	Internal	No	Funded	£10k	Implementation	Not quantifiable	N/A		Target low-cost alternative and linkage to GP disease register Potential air quality impact – behavioural change
30	Raise Awareness and Provide Practical Guidance for Domestic Solid Fuel Burning	Public Information	Via other mechanisms	2021	Ongoing	SCC	Internal	No	Funded	£10k	Implementation	Not quantifiable	N/A	Social Media Campaigns	Potential air quality - behavioural change
31	Promote National Clean Air Day Annually	Public Information	Other	2021	Annual, Ongoing	SCC, Public Schools, GAP, Public Schools,	Internal	N/A	Funded	£10k	Potential air quality impact – changing your people's behaviour quality impact	Not quantifiable	N/A	Uptake, school participation in campaigns Promoted through Clean Air Hub – Your Say Southend participation in	GAP resources - Soft approach due to healthy schools co ordinator to engage with schools toolkit developed and



Measure No.	Measure Title	Category	Classification	Year Measure Introduced in AQAP	Estimated / Actual Completion Date	Organisations Involved	Funding Source	Defra AQ Grant Funding	Funding Status	Estimated Cost of Measure	Measure Status	Reduction in Pollutant / Emission from Measure	Key Performance Indicator	Progress to Date	Comments / Barriers to Implementation
														campaigns Promoted through Clean	escalated planning for 2024 continues
32	Promote Global Action Planning Clean Air Framework for Schools	Public Information	Other	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
33	Implementation of the Green City Action Plan	Policy Guidance and Development Control	Other policy	2021	2025	SCC	Internal	No	Funded	£10k	Implementation	Not quantifiable	Adoption and implementation	Ongoing	Climate resilience, cool towns, nature smart cities
34	Net Zero Strategy	Policy Guidance and Development Control	Other policy	2022	2025	SCC	Internal	No	Funded	£10k	Implementation	Not quantifiable	Adoption and implementation	Ongoing	N/A
35	Climate Resilience and Urban Greening Strategy	Policy Guidance and Development Control	Other policy	2023	2025	SCC	Internal	No	Funded	£10k	Implementation	Not quantifiable	Adoption and implementation	Ongoing	N/A
38	Apply for Green Infrastructure Funding Bids to help towards Establishing Southend-on-Sea as a 'Nature Smart City'	Policy Guidance and Development Control	Other policy	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
39	Internet of Things	Other	Other	2023	2025	SCC SEC Basildon, Rochford, Castle Point	SEC	NO	Funded	< £10k	Planning	Not quantifiable	N/A	Planning	
40	Finalise & Adopt the Air Quality Action Plan 2023-27	Policy Guidance and Development Control	Air Quality Planning and Policy Guidance	2022	2023	Southend City Council	Southend City Council	NO	Funded	< £10k	Completed		Adoption of the AQAP	Adopted	

## 2.3 PM<sub>2.5</sub> – Local Authority Approach to Reducing Emissions and/or Concentrations

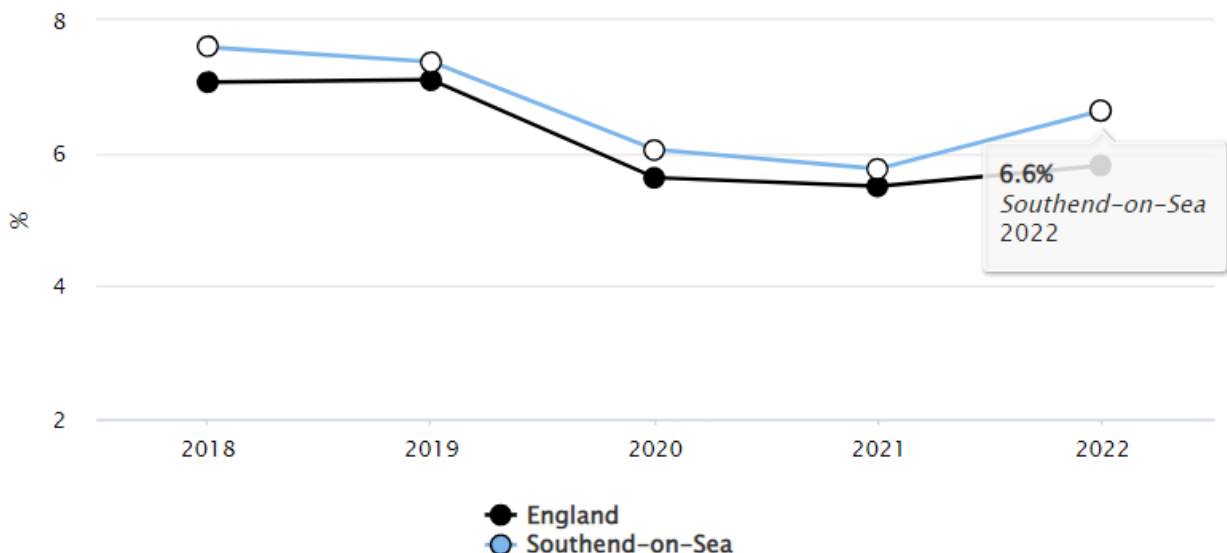
As detailed in Policy Guidance LAQM.PG22 (Chapter 8) and the Air Quality Strategy<sup>3</sup>, local authorities are expected to work towards reducing emissions and/or concentrations of fine particulate matter (PM<sub>2.5</sub>). There is clear evidence that PM<sub>2.5</sub> (particulate matter smaller 2.5 micrometres) has a significant impact on human health, including premature mortality, allergic reactions, and cardiovascular diseases.

Defra currently monitors PM<sub>2.5</sub> at the Chalkwell Park urban background site as part of the national Automatic Urban and Rural Network (AURN) in Southend. For 2022, the measured annual mean concentration was 7.8µg/m<sup>3</sup> which has improved significantly since 2017 (12.3µg/m<sup>3</sup>) and is well below the Environment Act PM<sub>2.5</sub> 2040 annual mean concentration target of 10.0µg/m<sup>3</sup>.

The Local Air Quality Management background maps identify that the maximum PM<sub>2.5</sub> background concentration within the Southend City Council area is 10.0µg/m<sup>3</sup>.

The Public Health Outcomes Framework indicator D01 – Fraction of mortality attributable to particulate (PM<sub>2.5</sub>) air pollution which for 2022 gave a value of 6.6%.

**Figure 2.1 – Public Health Framework Indicator D01 Fraction of all-cause adult mortality attributable to anthropogenic particulate air pollution**



<sup>3</sup> Defra. Air Quality Strategy – Framework for Local Authority Delivery, August 2023

Southend-on-Sea City Council is taking the following measures to address PM<sub>2.5</sub>:

1. Regular inspections of industrial process permitted by the Council under the national Environmental Permitting regime where combustion and non-combustion processes could lead to anthropogenic emissions of PM<sub>2.5</sub>.
2. Working to deliver major infrastructure and traffic management schemes as well as innovative sustainable travel initiatives. In addition to reduced exhaust emissions, these schemes may reduce non-exhaust particulate emissions from e.g. brake and tyre wear by improving traffic flow and reducing queue lengths.
3. The Council's Air Quality Action Plan (AQAP) incorporates both existing initiatives as well as new projects aimed at improving local air quality directly and indirectly. An updated AQAP 2023-2027 focusing on AQMA2 was adopted in 2023.
4. Working with Essex County Council on the Essex Air Quality Strategy, in preparation for the revocation of AQMA2.
5. Promote DEFRA guidance on domestic solid fuel burners, Medium Combustion Plant and the relevant sections of the new National Clean Air Strategy.
6. Alignment of LAQM with the Council's 2050 and Green City ambitions.
7. Prepare for the implementation of the Domestic Solid Fuel Regulations 2021. Phase one of training completed in June 2021.

The success of these actions will depend on close collaboration with several other partners including DEFRA and the DfT.

The Council understands that biomass boilers continue to be proposed for a number of locations within the City and through the development control system, we will ensure that the installation of these will not be to the detriment of local air quality.

## 3 Air Quality Monitoring Data and Comparison with Air Quality Objectives and National Compliance

This section sets out the monitoring undertaken within 2023 by Southend-on-Sea City Council and how it compares with the relevant air quality objectives. In addition, monitoring results are presented for a five-year period between 2019 and 2023 to allow monitoring trends to be identified and discussed.

### 3.1 Summary of Monitoring Undertaken

#### 3.1.1 Automatic Monitoring Sites

Defra currently monitors NO<sub>2</sub>, PM<sub>10</sub>, PM<sub>2.5</sub> and O<sub>3</sub> at the Chalkwell Park urban background site as part of the national Automatic Urban and Rural Network (AURN) in Southend.

Table A.1 in Appendix A shows the details of the automatic monitoring sites.

More information about the Chalkwell Park AURN monitor can be found [https://uk-air.defra.gov.uk/networks/site-info?site\\_id=SEND](https://uk-air.defra.gov.uk/networks/site-info?site_id=SEND)

Details on how the monitors are calibrated and how the data has been adjusted are included in Appendix C.

Maps showing the location of the monitoring sites are provided in Appendix D.

#### 3.1.2 Non-Automatic Monitoring Sites

Southend-on-Sea City Council undertook non-automatic (i.e. passive diffusion tube) monitoring of NO<sub>2</sub> at 44 sites during 2023. This report also presents data for 4 monitoring sites where measurement was undertaken by London Southend Airport.

Table A.2 in Appendix A presents the details of the non-automatic sites.

Maps showing the location of the monitoring sites are provided in Appendix D. Further details on Quality Assurance/Quality Control (QA/QC) for the diffusion tubes, including bias adjustments and any other adjustments applied (e.g. annualisation and/or distance correction), are included in Appendix C.

## 3.2 Individual Pollutants

The air quality monitoring results presented in this section are, where relevant, adjusted for bias, annualisation (where the annual mean data capture is below 75% and greater than 25%), and distance correction. Further details on adjustments are provided in Appendix C.

### 3.2.1 Nitrogen Dioxide (NO<sub>2</sub>)

Table A.3 and Table A.4 in Appendix A compare the ratified and adjusted monitored NO<sub>2</sub> annual mean concentrations for the past five years with the air quality objective of 40µg/m<sup>3</sup>. Note that the concentration data presented represents the concentration at the location of the monitoring site, following the application of bias adjustment and annualisation, as required (i.e. the values are exclusive of any consideration to fall-off with distance adjustment).

Figure A.1 & A.2 represents the annual mean concentrations within AQMA1 & AQMA2.

The full 2023 dataset of monthly diffusion tube values is provided in Appendix B. Note that the concentration data presented in Table B. includes distance corrected values, only where relevant.

The results show that no exceedances of the annual mean or 1-hour (as indicated by an annual mean in excess of 60µg/m<sup>3</sup>) Air Quality Objectives have been measured. The general trend of measured NO<sub>2</sub> is down which can be seen in the charts in Appendix A.

Measured NO<sub>2</sub> concentrations are continuing to fall and in 2023 there was no measured exceedances. As described elsewhere in this report, Southend-on-Sea City Council will carry out assessment of the monitoring data and outstanding actions within the air quality action plan with a view to undertaking revocation.



### 3.2.2 Particulate Matter (PM<sub>10</sub>)

Table A.6 in Appendix A: Monitoring Results compares the ratified and adjusted monitored PM<sub>10</sub> annual mean concentrations for the past five years with the air quality objective of 40µg/m<sup>3</sup>.

The results show that no exceedances of the annual mean Air Quality Objective have been measured and that there is no clear trend.

Table A.7 in Appendix A compares the ratified continuous monitored PM<sub>10</sub> daily mean concentrations for the past five years with the air quality objective of 50µg/m<sup>3</sup>, not to be exceeded more than 35 times per year.

The results show that no exceedances of the 1-hour Air Quality Objective have been measured.

### 3.2.3 Particulate Matter (PM<sub>2.5</sub>)

Table A.8 in Appendix A presents the ratified and adjusted monitored PM<sub>2.5</sub> annual mean concentrations for the past five years.

Figure A.3 sets out this information in a chart.

The results achieve the Annual Mean Concentration Target ('concentration target') - a maximum concentration of 10µg/m<sup>3</sup> to be met across England by 2040 as set out by the Environment Act 2021.

## Appendix A: Monitoring Results

**Table A.1 – Details of Automatic Monitoring Sites**

Site ID	Site Name	Site Type	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Pollutants Monitored	In AQMA? Which AQMA?	Monitoring Technique	Distance to Relevant Exposure (m) <sup>(1)</sup>	Distance to kerb of nearest road (m) <sup>(2)</sup>	Inlet Height (m)
UKA00409	Chalkwell Park	Urban Background	585823	186212	NO <sub>2</sub> , O <sub>3</sub> , PM <sub>10</sub> , PM <sub>2.5</sub>	NO	Chemiluminescent; UV Absorption; TEOM; FDMS	N/A	90	4

**Notes:**

(1) 0m if the monitoring site is at a location of exposure (e.g. installed on the façade of a residential property).

(2) N/A if not applicable

**Table A.2 – Details of Non-Automatic Monitoring Sites**

Diffusion Tube ID	Site Name	Site Type	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Pollutants Monitored	In AQMA? Which AQMA?	Distance to Relevant Exposure (m) <sup>(1)</sup>	Distance to kerb of nearest road (m) <sup>(2)</sup>	Tube Co-located with a Continuous Analyser?	Tube Height (m)
SOU21	Victoria Avenue 1	Roadside	587669	186681	NO <sub>2</sub>		0.0	3.0	No	1.8
SOU22	West Road	Roadside	586780	186233	NO <sub>2</sub>		0.0	4.5	No	1.8
SOU24	Eastern Avenue	Roadside	588339	187425	NO <sub>2</sub>		0.0	6.0	No	1.8
SOU25	Heygate Avenue	Roadside	588469	185352	NO <sub>2</sub>		0.0	5.0	No	1.8
SOU26	London Road 2	Roadside	582524	186541	NO <sub>2</sub>		0.0	4.0	No	1.8
SOU27	London Road 1	Roadside	583532	186566	NO <sub>2</sub>		0.0	12.0	No	1.8
SOU28	Prince Avenue 2	Roadside	584932	188249	NO <sub>2</sub>		0.0	11.0	No	1.8
SOU29	Abbotts Close	Roadside	584141	188238	NO <sub>2</sub>		0.0	10.0	No	1.8
SOU30	Manners Way	Roadside	587396	188670	NO <sub>2</sub>		0.0	14.0	No	1.8
SOU31	Boston Avenue	Roadside	587796	185955	NO <sub>2</sub>		0.0	11.0	No	1.8

Diffusion Tube ID	Site Name	Site Type	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Pollutants Monitored	In AQMA? Which AQMA?	Distance to Relevant Exposure (m) <sup>(1)</sup>	Distance to kerb of nearest road (m) <sup>(2)</sup>	Tube Co-located with a Continuous Analyser?	Tube Height (m)
SOU32	Victoria Avenue 2	Roadside	587393	187577	NO2	AQMA1	0.0	20.0	No	1.8
SOU33	Prince Avenue 1A	Roadside	586954	187841	NO2	AQMA1	0.0	10.0	No	1.8
SOU34	Parsons Corner	Roadside	592731	186553	NO2		0.0	5.0	No	1.8
SOU35	Bournes Green Chase	Roadside	591206	186398	NO2		0.0	15.0	No	1.8
SOU36	Eastern Esplanade	Roadside	589075	185029	NO2		0.0	7.0	No	1.8
SOU37	Marine Parade	Roadside	588858	185029	NO2		0.0	32.0	No	1.8
SOU38	West Street	Roadside	587608	186711	NO2	AQMA2	0.0	4.0	No	1.8
SOU39	Victoria Avenue 3	Roadside	587535	187025	NO2	AQMA2	0.0	5.0	No	1.8
SOU40	London Road 3	Roadside	583077	186509	NO2		0.0	6.0	No	1.8
SOU41	London Road 4	Roadside	584194	186571	NO2		0.0	8.0	No	1.8
SOU42	Broadway, Leigh	Roadside	584163	185863	NO2		0.0	3.0	No	1.8
SOU43	London Road 5	Roadside	585473	186382	NO2		0.0	6.0	No	1.8
SOU44	Hamlet Court Road 1	Roadside	587066	186000	NO2		0.0	6.0	No	1.8
SOU45	Hamlet Court Road 2	Roadside	586992	185830	NO2		0.0	5.0	No	1.8
SOU46	3 Prince Avenue	Roadside	587336	187666	NO2	AQMA1	0.0	5.0	No	1.8
SOU47	568 Prince Avenue	Roadside	585429	188231	NO2		0.0	9.0	No	1.8
SOU48	33 The Fairway	Roadside	583450	187840	NO2		0.0	18.0	No	1.8
SOU49	250 Hamstel Road	Roadside	589804	187211	NO2		0.0	11.0	No	1.8
SOU51	88 Prince Avenue	Roadside	587066	187786	NO2	AQMA1	0.0	11.0	No	1.8
SOU52	170 Prince Avenue	Roadside	586786	187868	NO2	AQMA1	0.0	10.0	No	1.8
SOU53	201 Prince Avenue	Roadside	586948	187842	NO2	AQMA1	0.0	7.0	No	1.8
SOU54	111 Hobleythick Road	Roadside	586919	187689	NO2		0.0	12.0	No	1.8
SOU55	20 Rochford Road	Roadside	586992	187966	NO2	AQMA1	0.0	12.0	No	1.8
SOU56	21 Larke Rise	Suburban	586904	187921	NO2	AQMA1	0.0	38.0	No	1.8
SOU57	285 Sutton Road	Roadside	588408	187844	NO2		N/A	3.0	No	1.8
SOU58	Greenways School	Roadside	590276	185306	NO2		N/A	2.0	No	1.8
KE1	Library, 1 Rayleigh Road, Leigh	Roadside	584843	188299	NO2		0.0	6.0	No	1.8
KE2	Health Centre, 1 Rayleigh Road Leigh	Roadside	584834	188272	NO2		0.0	6.0	No	1.8

Diffusion Tube ID	Site Name	Site Type	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Pollutants Monitored	In AQMA? Which AQMA?	Distance to Relevant Exposure (m) <sup>(1)</sup>	Distance to kerb of nearest road (m) <sup>(2)</sup>	Tube Co-located with a Continuous Analyser?	Tube Height (m)
KE3	55 Broomfield Ave Leigh	Roadside	584786	188183	NO2		0.0	10.0	No	1.8
KE4	332 Bridgewater Drive	Roadside	584864	188229	NO2		0.0	5.0	No	1.8
KE5	326-328 Bridgewater Drive	Roadside	584876	188203	NO2		0.0	6.0	No	1.8
KE6	327 Bridgewater Drive	Roadside	584903	188231	NO2		0.0	6.0	No	1.8
KE7	685 Prince Avenue Westcliff	Roadside	584952	188293	NO2		0.0	4.0	No	1.8
KE8	Essex Auto Group	Roadside	584892	188301	NO2		0.0	10.0	No	1.8
AIR1	Anne Bolyen Drive	Roadside	587636	189309	NO2		6.0	2.5	No	1.8
AIR2	Eastwoodbury Crescent	Kerbside	587282	188749	NO2		15.8	0.5	No	1.8
AIR3	Rochford Road	Kerbside	587399	188693	NO2		8.5	0.5	No	1.8
AIR4	Eastwoodbury Lane	Kerbside	587068	188668	NO2		19.5	0.5	No	1.8

**Notes:**

(1) 0m if the monitoring site is at a location of exposure (e.g. installed on the façade of a residential property).

(2) N/A if not applicable.

**Table A.3 – Annual Mean NO<sub>2</sub> Monitoring Results: Automatic Monitoring (µg/m<sup>3</sup>)**

Site ID	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Site Type	Valid Data Capture for Monitoring Period (%) <sup>(1)</sup>	Valid Data Capture 2023 (%) <sup>(2)</sup>	2019	2020	2021	2022	2023
UKA00409	585823	186212	Urban Background	98.6	98.6	19	14	15.4	15.3	13.1

Annualisation has been conducted where data capture is <75% and >25% in line with LAQM.TG22

Reported concentrations are those at the location of the monitoring site (annualised, as required), i.e. prior to any fall-off with distance correction

Where exceedances of the NO<sub>2</sub> annual mean objective occur at locations not representative of relevant exposure, the fall-off with distance concentration has been calculated and reported concentration provided in brackets for 2023

#### Notes:

The annual mean concentrations are presented as µg/m<sup>3</sup>.

Exceedances of the NO<sub>2</sub> annual mean objective of 40µg/m<sup>3</sup> are shown in **bold**.

All means have been “annualised” as per LAQM.TG22 if valid data capture for the full calendar year is less than 75%. See Appendix C for details.

Concentrations are those at the location of monitoring and not those following any fall-off with distance adjustment.

(1) Data capture for the monitoring period, in cases where monitoring was only carried out for part of the year.

(2) Data capture for the full calendar year (e.g. if monitoring was carried out for 6 months, the maximum data capture for the full calendar year is 50%).



**Table A.4 – Annual Mean NO<sub>2</sub> Monitoring Results: Non-Automatic Monitoring (µg/m<sup>3</sup>)**

Diffusion Tube ID	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Site Type	Valid Data Capture for Monitoring Period (%) <sup>(1)</sup>	Valid Data Capture 2023 (%) <sup>(2)</sup>	2019	2020	2021	2022	2023
SOU21	587669	186681	Roadside	40.4	40.4	30.9	24.2	27.3	26.9	28.3
SOU22	586780	186233	Roadside	100.0	100.0	24.7	20.1	22.7	21.9	20.5
SOU24	588339	187425	Roadside	100.0	100.0	30.0	23.6	25.5	23.8	23.4
SOU25	588469	185352	Roadside	92.3	92.3	24.5	21.3	24.4	22.1	21.6
SOU26	582524	186541	Roadside	100.0	100.0	30.8	24.9	27.4	27.1	22.8
SOU27	583532	186566	Roadside	100.0	100.0	19.9	15.0	16.5	15.6	14.6
SOU28	584932	188249	Roadside	100.0	100.0	27.6	23.3	25.0	23.8	23.9
SOU29	584141	188238	Roadside	100.0	100.0	21.0	16.5	17.5	16.2	15.5
SOU30	587396	188670	Roadside	100.0	100.0	21.1	16.0	17.0	15.9	15.2
SOU31	587796	185955	Roadside	100.0	100.0	24.9	19.8	22.1	22.1	19.7
SOU32	587393	187577	Roadside	100.0	100.0	23.9	18.7	20.1	19.0	17.9
SOU33	586954	187841	Roadside	100.0	100.0	<b>44.6</b>	34.5	35.5	36.2	34.1
SOU34	592731	186553	Roadside	100.0	100.0	21.7	17.9	18.3	18.7	18.0
SOU35	591206	186398	Roadside	100.0	100.0	22.1	17.7	19.1	18.2	17.6
SOU36	589075	185029	Roadside	92.3	92.3	25.5	19.9	21.0	21.1	23.5
SOU37	588858	185029	Roadside	92.3	92.3	22.8	19.4	20.5	18.3	18.0
SOU38	587608	186711	Roadside	100.0	100.0	37.4	30.7	36.8	37.0	30.9
SOU39	587535	187025	Roadside	82.7	82.7	39.1	29.0	32.6	33.0	30.7
SOU40	583077	186509	Roadside	90.4	90.4	27.8	21.7	23.5	21.8	20.2
SOU41	584194	186571	Roadside	100.0	100.0	30.0	24.7	26.8	23.7	24.9
SOU42	584163	185863	Roadside	92.3	92.3	24.2	19.3	22.4	21.7	20.9
SOU43	585473	186382	Roadside	100.0	100.0	29.1	23.6	25.3	25.2	23.5
SOU44	587066	186000	Roadside	100.0	100.0	30.1	26.6	27.4	27.2	34.9
SOU45	586992	185830	Roadside	92.3	92.3	22.5	20.2	21.2	19.5	18.7
SOU46	587336	187666	Roadside	100.0	100.0	29.5	21.9	23.4	23.4	22.5
SOU47	585429	188231	Roadside	100.0	100.0	<b>N/A</b>	<b>N/A</b>	18.7	17.9	17.1
SOU48	583450	187840	Roadside	75.0	75.0	<b>N/A</b>	<b>N/A</b>	15.5	14.3	11.8
SOU49	589804	187211	Roadside	100.0	100.0	<b>N/A</b>	<b>N/A</b>	18.3	18.8	14.6
SOU51	587066	187786	Roadside	92.3	92.3	<b>N/A</b>	<b>N/A</b>	21.4	21.2	19.6
SOU52	586786	187868	Roadside	100.0	100.0	<b>N/A</b>	<b>N/A</b>	19.9	19.1	18.8
SOU53	586948	187842	Roadside	100.0	100.0	<b>N/A</b>	<b>N/A</b>	20.5	19.6	19.1
SOU54	586919	187689	Roadside	100.0	100.0	<b>N/A</b>	<b>N/A</b>	16.5	16.2	15.5

Diffusion Tube ID	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Site Type	Valid Data Capture for Monitoring Period (%) <sup>(1)</sup>	Valid Data Capture 2023 (%) <sup>(2)</sup>	2019	2020	2021	2022	2023
SOU55	586992	187966	Roadside	100.0	100.0	<b><u>N/A</u></b>	<b><u>N/A</u></b>	19.7	18.7	17.8
SOU56	586904	187921	Suburban	92.3	92.3	<b><u>N/A</u></b>	<b><u>N/A</u></b>	17.2	15.9	13.9
SOU57	588408	187844	Roadside	100.0	100.0	<b><u>N/A</u></b>	<b><u>N/A</u></b>	21.5	20.6	19.9
SOU58	590276	185306	Roadside	100.0	100.0	<b><u>N/A</u></b>	<b><u>N/A</u></b>	13.8	14.0	13.8
KE1	584843	188299	Roadside	100.0	100.0	24.7	19.9	21.5	24.4	21.9
KE2	584834	188272	Roadside	92.3	92.3	29.3	21.6	19.9	21.5	18.5
KE3	584786	188183	Roadside	92.3	92.3	20.5	15.6	16.5	15.8	19.1
KE4	584864	188229	Roadside	100.0	100.0	27.4	23.8	25.1	22.9	22.8
KE5	584876	188203	Roadside	100.0	100.0	22.6	18.7	22.7	21.1	19.2
KE6	584903	188231	Roadside	100.0	100.0	25.9	20.8	24.0	20.9	20.9
KE7	584952	188293	Roadside	92.3	92.3	34.1	27.8	30.1	22.0	26.5
KE8	584892	188301	Roadside	100.0	100.0	26.7	20.6	22.1	21.6	21.3
AIR1	587636	189309	Roadside	100.0	100.0	21.9	18.6	17.8	18.3	17.6
AIR2	587282	188749	Kerbside	100.0	100.0	26.8	20.5	21.3	19.9	19.2
AIR3	587399	188693	Kerbside	100.0	100.0	24.9	20.7	21.4	21.6	19.8
AIR4	587068	188668	Kerbside	100.0	100.0	26.7	19.8	19.8	19.3	17.4

Annualisation has been conducted where data capture is <75% and >25% in line with LAQM.TG22

Diffusion tube data has been bias adjusted

Reported concentrations are those at the location of the monitoring site (bias adjusted and annualised, as required), i.e. prior to any fall-off with distance correction

#### Notes:

The annual mean concentrations are presented as  $\mu\text{g}/\text{m}^3$ .

Exceedances of the  $\text{NO}_2$  annual mean objective of  $40\mu\text{g}/\text{m}^3$  are shown in **bold**.

$\text{NO}_2$  annual means exceeding  $60\mu\text{g}/\text{m}^3$ , indicating a potential exceedance of the  $\text{NO}_2$  1-hour mean objective are shown in **bold and underlined**.

Means for diffusion tubes have been corrected for bias. All means have been “annualised” as per LAQM.TG22 if valid data capture for the full calendar year is less than 75%. See Appendix C for details.

Concentrations are those at the location of monitoring and not those following any fall-off with distance adjustment.

(1) Data capture for the monitoring period, in cases where monitoring was only carried out for part of the year.

(2) Data capture for the full calendar year (e.g. if monitoring was carried out for 6 months, the maximum data capture for the full calendar year is 50%).

**Table A.5 – 1-Hour Mean NO<sub>2</sub> Monitoring Results, Number of 1-Hour Means > 200µg/m<sup>3</sup>**

Site ID	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Site Type	Valid Data Capture for Monitoring Period (%) <sup>(1)</sup>	Valid Data Capture 2023 (%) <sup>(2)</sup>	2019	2020	2021	2022	2023
UKA00409	585823	186212	Urban Background	98.6	98.6	0	0	0	0	0

**Notes:**

Results are presented as the number of 1-hour periods where concentrations greater than 200µg/m<sup>3</sup> have been recorded.

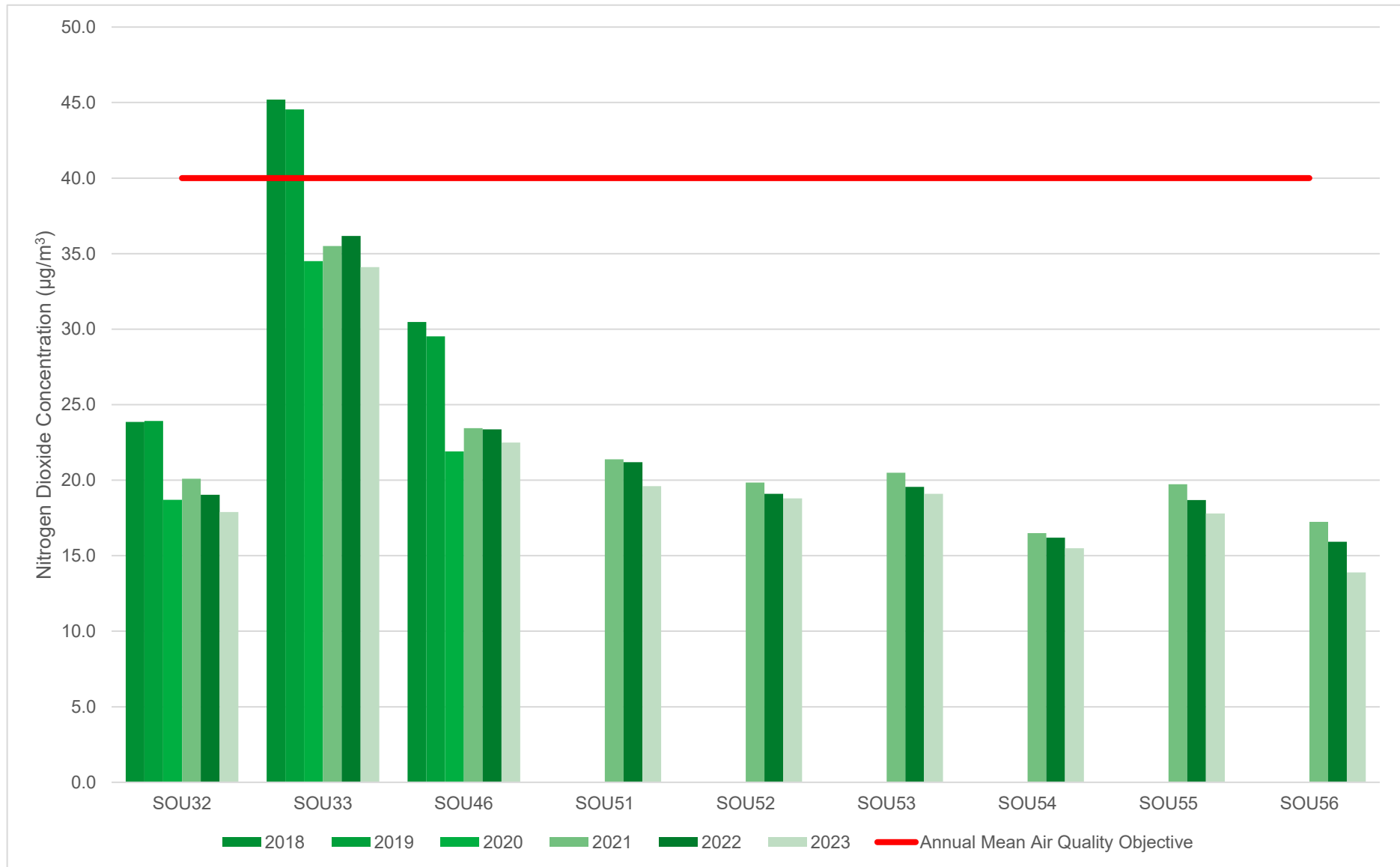
Exceedances of the NO<sub>2</sub> 1-hour mean objective (200µg/m<sup>3</sup> not to be exceeded more than 18 times/year) are shown in **bold**.

If the period of valid data is less than 85%, the 99.8th percentile of 1-hour means is provided in brackets.

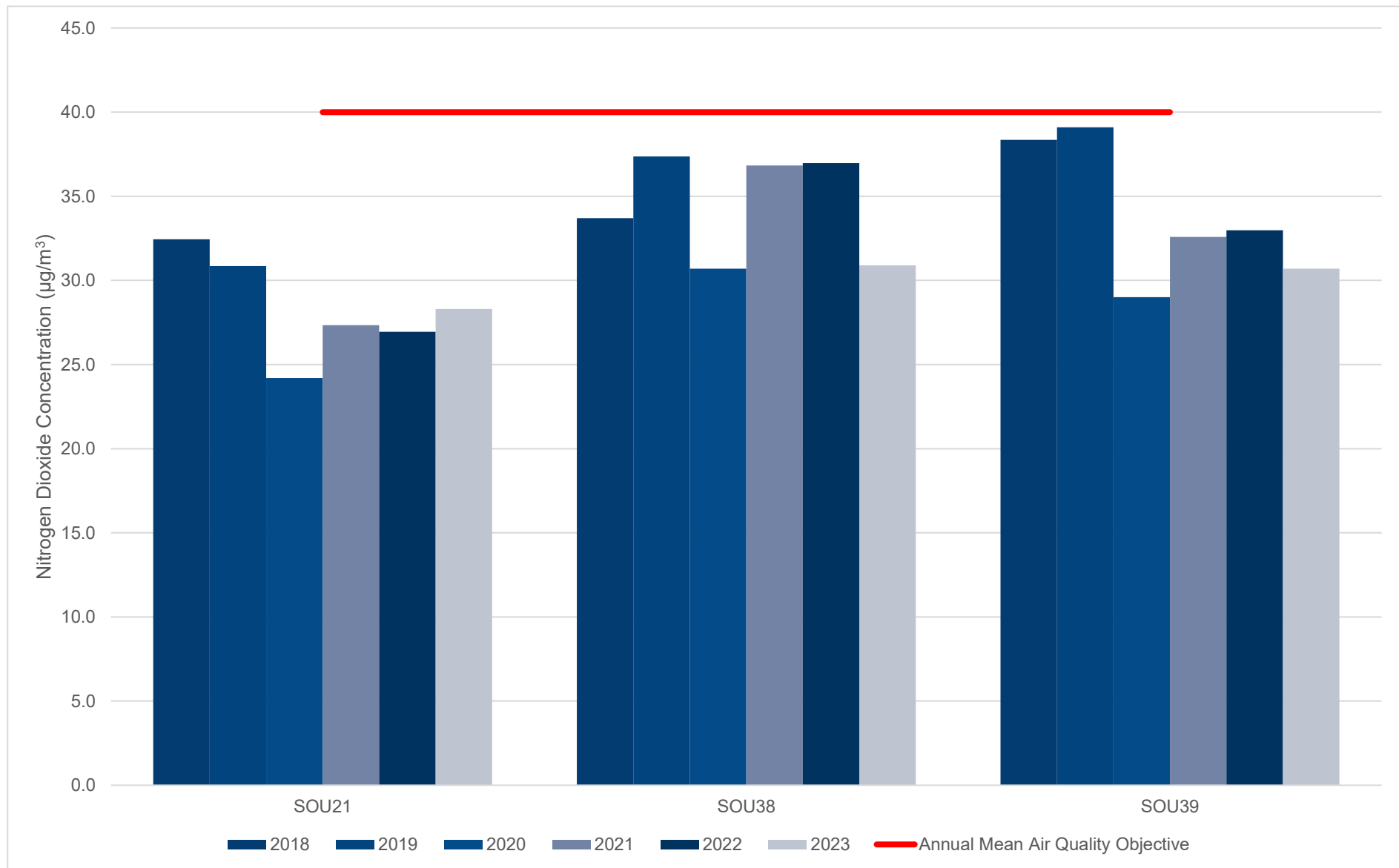
(1) Data capture for the monitoring period, in cases where monitoring was only carried out for part of the year.

(2) Data capture for the full calendar year (e.g. if monitoring was carried out for 6 months, the maximum data capture for the full calendar year is 50%).

**Figure A.1 – Annual Mean NO<sub>2</sub> Trend in AQMA1**



**Figure A.2 – Annual Mean NO<sub>2</sub> Trend in AQMA2**



**Table A.6 – Annual Mean PM<sub>10</sub> Monitoring Results (µg/m<sup>3</sup>)**

Site ID	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Site Type	Valid Data Capture for Monitoring Period (%) <sup>(1)</sup>	Valid Data Capture 2023 (%) <sup>(2)</sup>	2019	2020	2021	2022	2023
UKA0040 9	585823	186212	Urban Background	99.3	99.3	N/A	13.4	13.7	13.8	12

**Annualisation has been conducted where data capture is <75% and >25% in line with LAQM.TG22**

**Notes:**

The annual mean concentrations are presented as µg/m<sup>3</sup>.

Exceedances of the PM<sub>10</sub> annual mean objective of 40µg/m<sup>3</sup> are shown in **bold**.

All means have been “annualised” as per LAQM.TG22 if valid data capture for the full calendar year is less than 75%. See Appendix C for details.

(1) Data capture for the monitoring period, in cases where monitoring was only carried out for part of the year.

(2) Data capture for the full calendar year (e.g. if monitoring was carried out for 6 months, the maximum data capture for the full calendar year is 50%).



**Table A.7 – 24-Hour Mean PM<sub>10</sub> Monitoring Results, Number of PM<sub>10</sub> 24-Hour Means > 50µg/m<sup>3</sup>**

Site ID	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Site Type	Valid Data Capture for Monitoring Period (%) <sup>(1)</sup>	Valid Data Capture 2023 (%) <sup>(2)</sup>	2019	2020	2021	2022	2023
UKA00409	585823	186212	Urban Background	99.3	99.3	<b>N/A</b>	3	0	4	0

**Notes:**

Results are presented as the number of 24-hour periods where daily mean concentrations greater than 50µg/m<sup>3</sup> have been recorded.

Exceedances of the PM<sub>10</sub> 24-hour mean objective (50µg/m<sup>3</sup> not to be exceeded more than 35 times/year) are shown in **bold**.

If the period of valid data is less than 85%, the 90.4th percentile of 24-hour means is provided in brackets.

(1) Data capture for the monitoring period, in cases where monitoring was only carried out for part of the year.

(2) Data capture for the full calendar year (e.g. if monitoring was carried out for 6 months, the maximum data capture for the full calendar year is 50%).

**Table A.8 – Annual Mean PM<sub>2.5</sub> Monitoring Results (µg/m<sup>3</sup>)**

Site ID	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Site Type	Valid Data Capture for Monitoring Period (%) <sup>(1)</sup>	Valid Data Capture 2023 (%) <sup>(2)</sup>	2019	2020	2021	2022	2023
UKA00409	585823	186212	Urban Background	99.3	99.3	10.7	8.5	8.9	8.8	7.8

**Annualisation has been conducted where data capture is <75% and >25% in line with LAQM.TG22**

**Notes:**

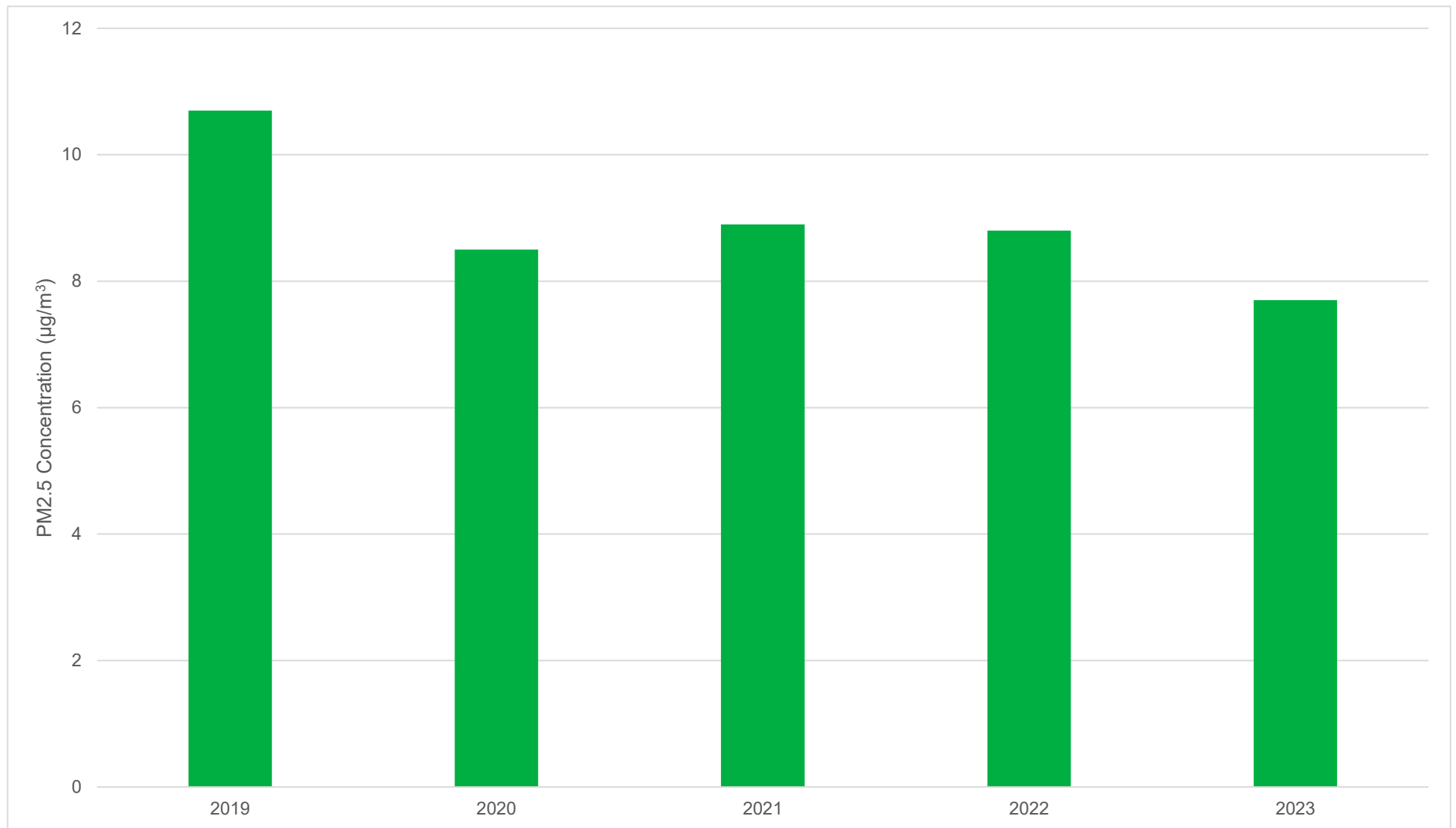
The annual mean concentrations are presented as µg/m<sup>3</sup>.

All means have been “annualised” as per LAQM.TG22 if valid data capture for the full calendar year is less than 75%. See Appendix C for details.

(1) Data capture for the monitoring period, in cases where monitoring was only carried out for part of the year.

(2) Data capture for the full calendar year (e.g. if monitoring was carried out for 6 months, the maximum data capture for the full calendar year is 50%)

**Figure A.3 – Trends in Annual Mean PM<sub>2.5</sub> Concentrations**



## Appendix B: Full Monthly Diffusion Tube Results for 2023

Table B.1 – NO<sub>2</sub> 2023 Diffusion Tube Results (µg/m<sup>3</sup>)

DT ID	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual Mean: Raw Data	Annual Mean: Annualised and Bias Adjusted (0.77)	Annual Mean: Distance Corrected to Nearest Exposure
SOU21	587669	186681	46.7	51.3	36.3	36.2	34.5	Missing	Missing	Missing	Erroneous Datapoint Removed	Missing	Missing	Erroneous Datapoint Removed	41.0	28.3	
SOU22	586780	186233	40.8	41.1	27.1	26.1	21.1	19.8	19.7	20.9	28.1	28.7	28.7	18.1	26.7	20.5	
SOU24	588339	187425	42.6	39.8	23.9	29.5	22.0	32.1	25.3	27.0	33.1	32.8	30.6	25.8	30.4	23.4	
SOU25	588469	185352	41.7	41.9	26.3	23.5	Missing	15.1	20.1	24.3	27.3	30.2	31.3	26.9	28.1	21.6	
SOU26	582524	186541	33.7	42.7	24.9	28.9	19.4	34.1	24.5	29.0	33.9	34.3	30.2	19.1	29.6	22.8	
SOU27	583532	186566	29.8	27.2	18.9	18.6	18.4	13.0	11.6	14.3	18.6	19.1	20.6	17.8	19.0	14.6	
SOU28	584932	188249	39.9	41.3	30.5	26.6	25.2	31.4	24.1	27.2	32.3	32.5	32.3	28.9	31.0	23.9	
SOU29	584141	188238	33.5	29.2	19.1	20.2	19.6	14.8	12.7	12.0	18.5	19.3	22.5	20.3	20.1	15.5	
SOU30	587396	188670	33.7	30.1	19.1	14.5	14.8	15.7	11.9	13.5	20.9	19.4	24.9	19.1	19.8	15.2	
SOU31	587796	185955	29.8	35.7	26.8	25.3	18.1	25.4	22.7	18.7	37.1	29.3	25.0	13.0	25.6	19.7	
SOU32	587393	187577	40.0	32.3	21.9	19.2	19.0	21.3	14.4	18.5	23.8	25.3	22.4	20.1	23.2	17.9	
SOU33	586954	187841	52.9	51.5	48.5	35.9	27.0	47.1	44.0	43.0	48.5	0.9	85.7	46.1	44.3	34.1	
SOU34	592731	186553	32.0	32.7	22.8	17.8	16.7	23.9	17.8	19.2	24.1	26.1	21.4	25.3	23.3	18.0	
SOU35	591206	186398	35.4	32.4	23.6	20.1	19.1	22.4	16.2	17.9	23.8	22.2	25.4	16.1	22.9	17.6	
SOU36	589075	185029	36.6	36.8	20.4	25.7	Missing	84.2	14.5	21.9	26.2	24.9	25.9	18.1	30.5	23.5	
SOU37	588858	185029	36.3	36.5	24.5	17.9	20.9	21.3	18.0	19.6	24.3	Missing	24.5	13.8	23.4	18.0	
SOU38	587608	186711	42.8	50.4	36.3	41.7	36.6	44.6	35.5	37.9	49.1	45.3	26.1	35.7	40.2	30.9	
SOU39	587535	187025	47.2	49.3	31.6	Missing	35.2	Missing	36.8	37.8	43.0	43.3	36.4	38.2	39.9	30.7	
SOU40	583077	186509	32.6	37.1	20.9	25.7	21.1	27.8	19.2	22.0	28.4	27.8	Erroneous Datapoint Removed	25.4	26.2	20.2	
SOU41	584194	186571	44.7	46.9	31.0	29.1	21.5	29.1	26.6	25.8	31.1	34.0	36.2	31.5	32.3	24.9	
SOU42	584163	185863	31.6	40.7	23.9	27.3	23.0	22.1	16.0	18.5	35.0	31.2	29.0	Missing	27.1	20.9	
SOU43	585473	186382	51.7	43.9	23.2	31.9	34.1	27.5	20.2	22.7	32.1	29.5	36.2	13.3	30.5	23.5	
SOU44	587066	186000	194.2	43.2	27.5	27.3	22.2	31.4	30.8	65.8	0.8	39.5	26.6	34.9	45.4	34.9	
SOU45	586992	185830	Missing	37.1	28.4	19.7	21.9	22.5	17.0	18.8	26.1	23.6	29.0	22.9	24.3	18.7	
SOU46	587336	187666	38.4	38.0	31.0	24.2	17.0	28.8	24.4	26.6	30.1	33.9	27.4	31.5	29.3	22.5	
SOU47	585429	188231	31.5	31.1	19.9	23.2	22.0	19.1	13.4	17.3	24.2	25.2	21.2	18.5	22.2	17.1	
SOU48	583450	187840	26.0	Missing	Erroneous Datapoint	Erroneous Datapoint	6.3	13.8	10.0	12.6	16.5	15.9	19.2	17.8	15.3	11.8	

DT ID	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual Mean: Raw Data	Annual Mean: Annualised and Bias Adjusted (0.77)	Annual Mean: Distance Corrected to Nearest Exposure
					nt Removed	nt Removed											
SOU49	589804	187211	35.0	31.7	21.9	8.2	16.6	16.1	16.1	15.8	18.8	15.5	10.7	21.5	19.0	14.6	
SOU51	587066	187786	34.2	34.1	27.0	22.2	Missing	22.6	17.7	21.2	25.6	26.0	26.5	23.6	25.5	19.6	
SOU52	586786	187868	35.7	33.3	25.4	22.3	38.1	17.5	13.9	17.1	25.0	23.5	24.2	17.4	24.5	18.8	
SOU53	586948	187842	34.5	34.6	22.6	27.8	12.1	23.9	16.1	21.0	26.1	28.0	28.7	22.3	24.8	19.1	
SOU54	586919	187689	31.5	29.6	18.0	17.1	14.7	16.4	14.0	13.9	19.7	22.7	22.1	21.3	20.1	15.5	
SOU55	586992	187966	33.9	31.2	21.9	16.4	12.4	21.7	18.2	19.9	24.2	29.2	25.1	24.0	23.2	17.8	
SOU56	586904	187921	Erroneous Datapoint Removed	25.8	21.2	15.1	9.7	18.8	16.6	15.6	20.1	24.7	18.6	12.7	18.1	13.9	
SOU57	588408	187844	42.6	36.1	23.8	19.2	14.9	22.1	21.1	21.7	23.2	30.0	30.5	24.2	25.8	19.9	
SOU58	590276	185306	21.0	29.2	16.7	15.2	9.8	22.9	11.2	13.2	16.8	19.5	20.9	18.4	17.9	13.8	
KE1	584843	188299	34.8	37.5	23.8	30.2	28.5	27.0	19.1	24.7	32.3	33.6	23.4	26.2	28.4	21.9	
KE2	584834	188272	31.2	Missing	18.3	29.9	20.1	21.8	18.1	20.6	27.8	28.5	21.8	26.7	24.1	18.5	
KE3	584786	188183	31.6	25.8	14.7	16.4	Missing	64.1	11.2	13.9	16.6	18.4	30.0	29.5	24.7	19.1	
KE4	584864	188229	44.2	32.0	30.4	28.3	32.4	26.5	18.5	22.6	31.5	31.5	32.6	24.3	29.6	22.8	
KE5	584876	188203	29.5	37.1	27.9	28.7	22.4	19.6	15.5	18.8	26.5	26.2	24.8	22.4	25.0	19.2	
KE6	584903	188231	44.9	39.0	28.1	22.9	21.7	22.9	19.7	22.8	25.6	27.3	30.4	19.7	27.1	20.9	
KE7	584952	188293	46.7	48.9	36.5	37.6	33.5	34.7	28.6	30.1	37.8	10.8	33.7	Erroneous Datapoint Removed	34.4	26.5	
KE8	584892	188301	32.0	36.5	27.3	25.4	16.5	27.5	24.9	20.5	28.0	35.1	29.5	28.2	27.6	21.3	
AIR1	587636	189309	35.7	31.5	24.6	17.1	12.2	18.5	17.8	16.8	20.5	27.3	29.2	23.8	22.9	17.6	
AIR2	587282	188749	34.3	25.1	23.5	25.4	23.9	19.4	17.4	18.7	31.1	28.4	28.2	24.0	25.0	19.2	
AIR3	587399	188693	35.7	35.2	25.3	22.2	13.2	22.8	23.5	22.1	24.3	32.2	25.6	27.2	25.8	19.8	
AIR4	587068	188668	29.7	18.1	21.4	22.5	16.9	26.9	16.6	17.9	24.9	25.8	27.9	23.0	22.6	17.4	

- All erroneous data has been removed from the NO<sub>2</sub> diffusion tube dataset presented in Table B.1
- Annualisation has been conducted where data capture is <75% and >25% in line with LAQM.TG22
- National bias adjustment factor used
- Where applicable, data has been distance corrected for relevant exposure in the final column
- Southend-on-Sea City Council confirms that all 2023 diffusion tube data has been uploaded to the Diffusion Tube Data Entry System

**Notes:**

Exceedances of the NO<sub>2</sub> annual mean objective of 40µg/m<sup>3</sup> are shown in **bold**.

NO<sub>2</sub> annual means exceeding 60µg/m<sup>3</sup>, indicating a potential exceedance of the NO<sub>2</sub> 1-hour mean objective are shown in **bold and underlined**.

See Appendix C for details on bias adjustment and annualisation.

## Appendix C: Supporting Technical Information / Air Quality Monitoring Data QA/QC

### New or Changed Sources Identified Within Southend 2023

Southend City Council confirms that in 2023, no new or changed sources that significantly affect air quality have been identified.

### Additional Air Quality Works Undertaken by Southend-on-Sea City Council During 2023

#### Southend-on-Sea City Council AQAP (AQMA No.1 – The Bell Junction) Detailed Modelling Study

Southend-on-Sea City Council has commissioned a technical report to identify the extent to which the annual mean objective for NO<sub>2</sub> is exceeded within The Bell Junction AQMA, and to determine the exposure at sensitive receptors.

- Detailed modelling has predicted that the maximum NO<sub>2</sub> annual mean concentration within 'The Bell Junction AQMA' is 39.8µg/m<sup>3</sup> at Receptor AG, located at 'Cuckoo Corner'. This is within 10% of the AQO.
- No exceedances of the NO<sub>2</sub> annual mean AQO of 40 µg/m<sup>3</sup> were predicted outside of the current AQMA boundary.

Based upon the analysis of results, it is recommended that the AQMA remains in place with the current boundary and monitoring to continue in this area.

The report recommends that the diffusion tube network along Priory Crescent, adjacent to the residential properties is expanded due to elevated modelled concentrations in this area.

Based upon the analysis of results, it is recommended that the AQMA remains in place with the current boundary and monitoring should continue in this area. It is also recommended that the diffusion tube network should be expanded along Priory Crescent (adjacent to the residential properties) as the modelled NO<sub>2</sub> concentration that receptors along this road are exposed to were the highest of all receptors, beyond those that all located at major junction (i.e. 'The Bell Junction' and 'Cuckoo Corner'). It should also be noted that like with the monitored results, no receptors outside of the AQMA boundary exceeded the AQO in the modelled results.

## QA/QC of Diffusion Tube Monitoring

- Southend-on-Sea City Council undertook monitoring at 44 sites in 2023.
- London Southend Airport undertook monitoring at 4 sites in 2023. The results are included within this report. Note, one of these sites is outside of the Southend boundary.
- Southend-on-Sea City Council adheres with the Diffusion Tube Monitoring Calendar
- The diffusion tubes were supplied by Socotec Didcot (UKAS Testing Laboratory number 1015) with a preparation method of 50% triethanolamine (TEA) in Acetone.
- The AIR NO<sub>2</sub> proficiency testing scheme found that the laboratory achieved the following percentage of results determined as satisfactory for 2023.

### Diffusion Tube Annualisation

Annualisation is required for any site with data capture less than 75% but greater than 25%.

The diffusion tube processing tool is used to complete the annualisation process using background data sourced from regional AURN sites.

**Table C.1 – Annualisation Summary (concentrations presented in µg/m<sup>3</sup>)**

Site ID	Annualisati on Factor Chignal St James	Annualisati on Factor Rochester Stoke	Annualisati on Factor St Osyth	Annualisati on Factor Wicken Fen	Average Annualisati on Factor	Raw Data Annual Mean	Annualised Annual Mean
SOU36	0.9838	0.9614	0.9745	0.9979	0.9794	28.4	27.8

### Diffusion Tube Bias Adjustment Factors

The diffusion tube data presented within the 2023 ASR have been corrected for bias using an adjustment factor. Bias represents the overall tendency of the diffusion tubes to under or over-read relative to the reference chemiluminescence analyser. LAQM.TG22 provides guidance with regard to the application of a bias adjustment factor to correct diffusion tube monitoring. Triplicate co-location studies can be used to determine a local bias factor based on the comparison of diffusion tube results with data taken from NO<sub>x</sub>/NO<sub>2</sub> continuous analysers. Alternatively, the national database of diffusion tube co-location surveys provides bias factors for the relevant laboratory and preparation method.

Southend-on-Sea City Council have applied the national bias adjustment factor of 0.77 to the 2023 monitoring data to maintain consistency with Councils in Essex. A summary of

bias adjustment factors used by Southend-on-Sea City Council over the past five years is in Table C..

**Table C.2 – Bias Adjustment Factor**

Monitoring Year	Local or National	Diffusion Tube Preparation	Version of National Spreadsheet	Adjustment Factor
2023	National	Socotec 50% TEA in Acetone	03/24	0.77
2022	National	Socotec 50% TEA in Acetone	03/23	0.78
2021	National	Socotec 50% TEA in Acetone	03/22	0.77
2020	National	Socotec 50% TEA in Acetone	03/21	0.77
2019	National	Socotec 50% TEA in Acetone	03/20	0.75

### **NO<sub>2</sub> Fall-off with Distance from the Road**

Wherever possible, monitoring locations are representative of exposure. However, where this is not possible, the NO<sub>2</sub> concentration at the nearest location relevant for exposure has been estimated using the Diffusion Tube Data Processing Tool/NO<sub>2</sub> fall-off with distance calculator available on the LAQM Support website. Where appropriate, non-automatic annual mean NO<sub>2</sub> concentrations corrected for distance are presented in Table B..

No diffusion tube sites within Southend required distance correction during 2023.



## **QA/QC of Automatic Monitoring**

The techniques used for monitoring within the AURN are summarised at the following link <https://uk-air.defra.gov.uk/networks/monitoring-methods?view=eu-standards>

The [interactive map page](#) provides an interactive view of the AURN network with links to site information and latest data.

To view the current monitoring sites within the AURN, view the [current levels page](#) which also shows the parameters measured.

## **Automatic Monitoring Annualisation**

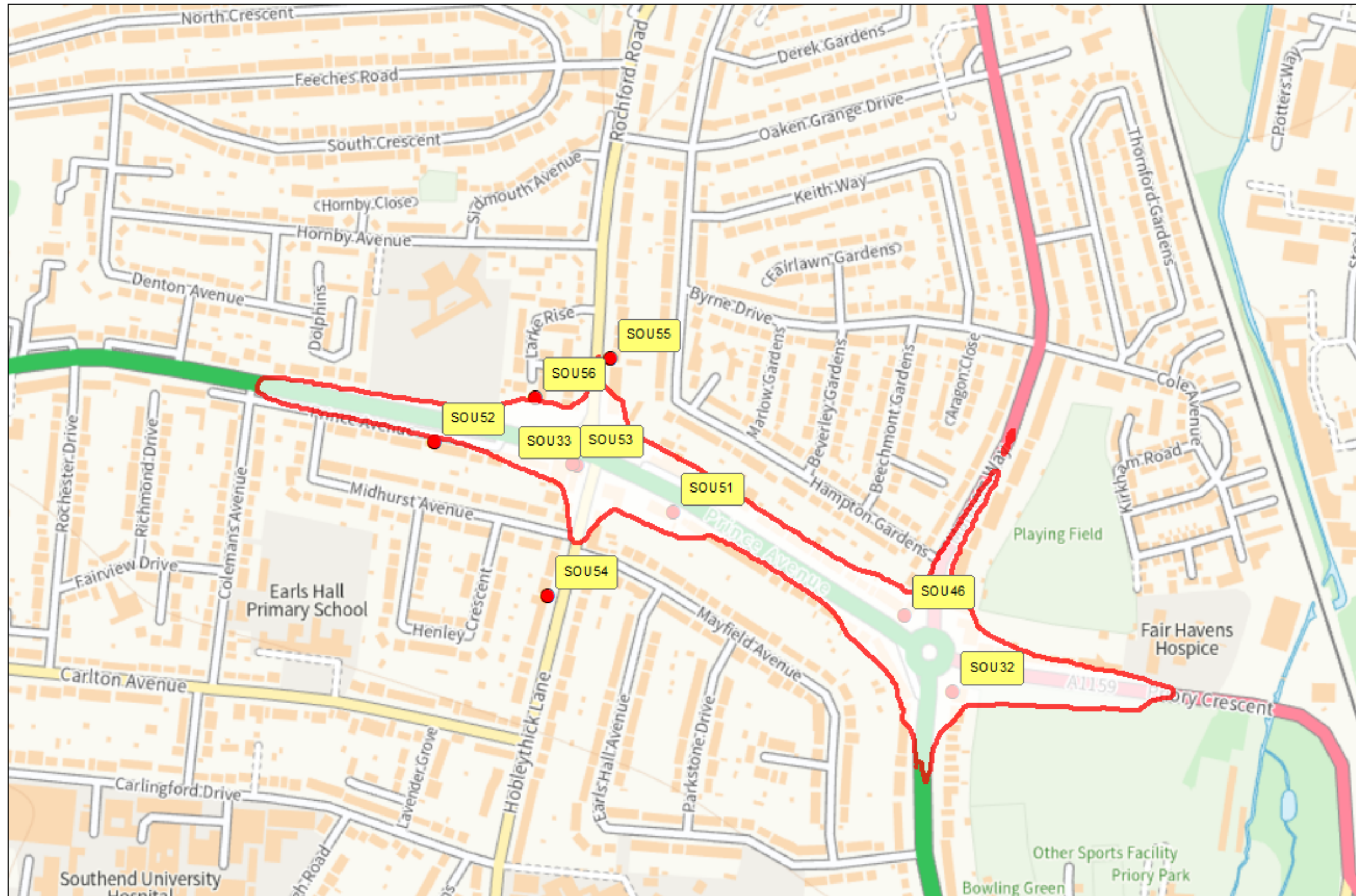
The automatic monitoring station in Southend recorded data capture of greater than 75% therefore it was not required to annualise any monitoring data.

## **NO<sub>2</sub> Fall-off with Distance from the Road**

The automatic monitoring station in Southend is representative of exposure. It has not been necessary to correct the automatic annual mean NO<sub>2</sub> concentrations for distance.

## Appendix D: Maps of Monitoring Locations and AQMAs

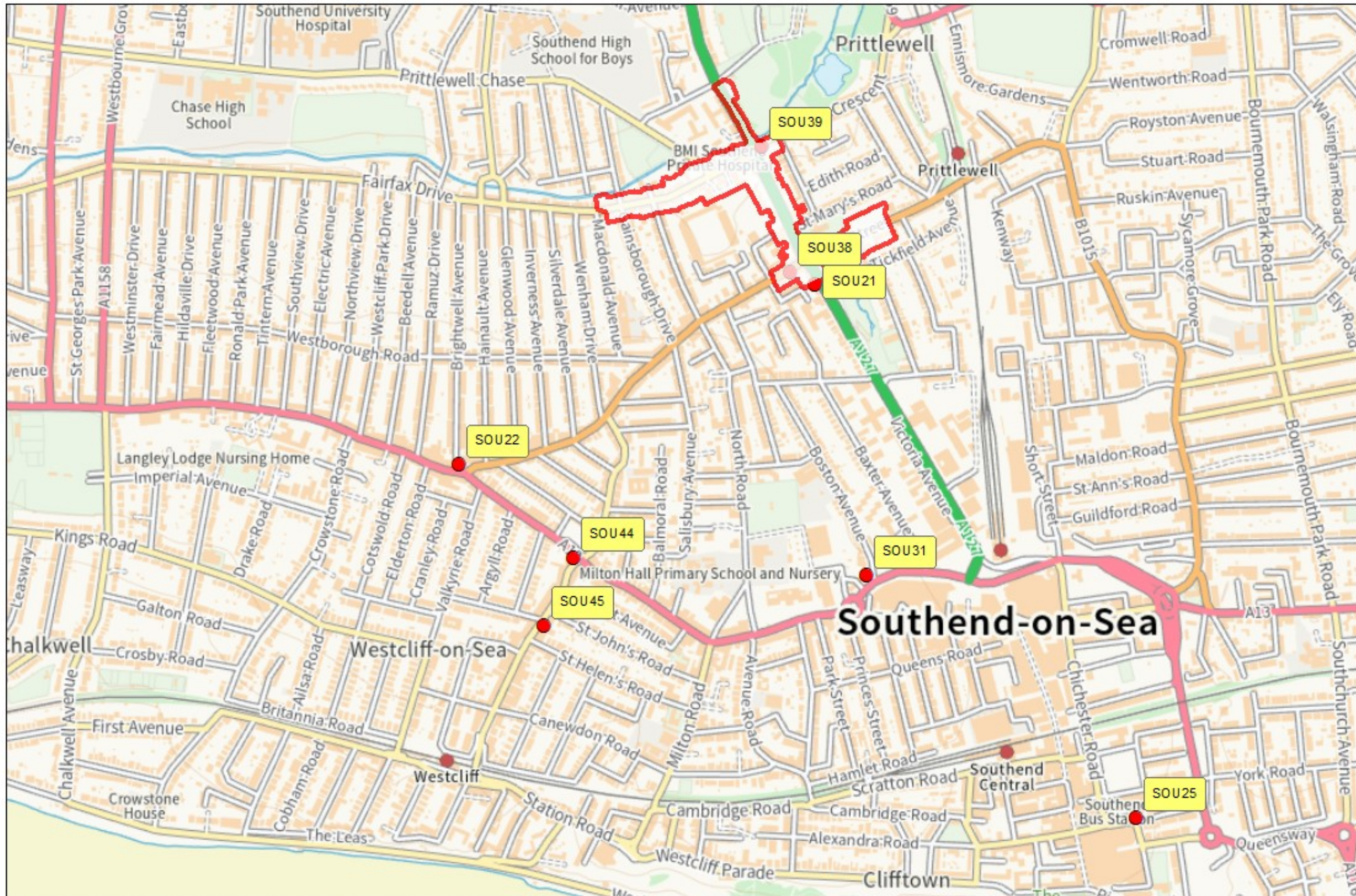
Figure D.1 – Map of Non-Automatic Monitoring Sites: AQMA1



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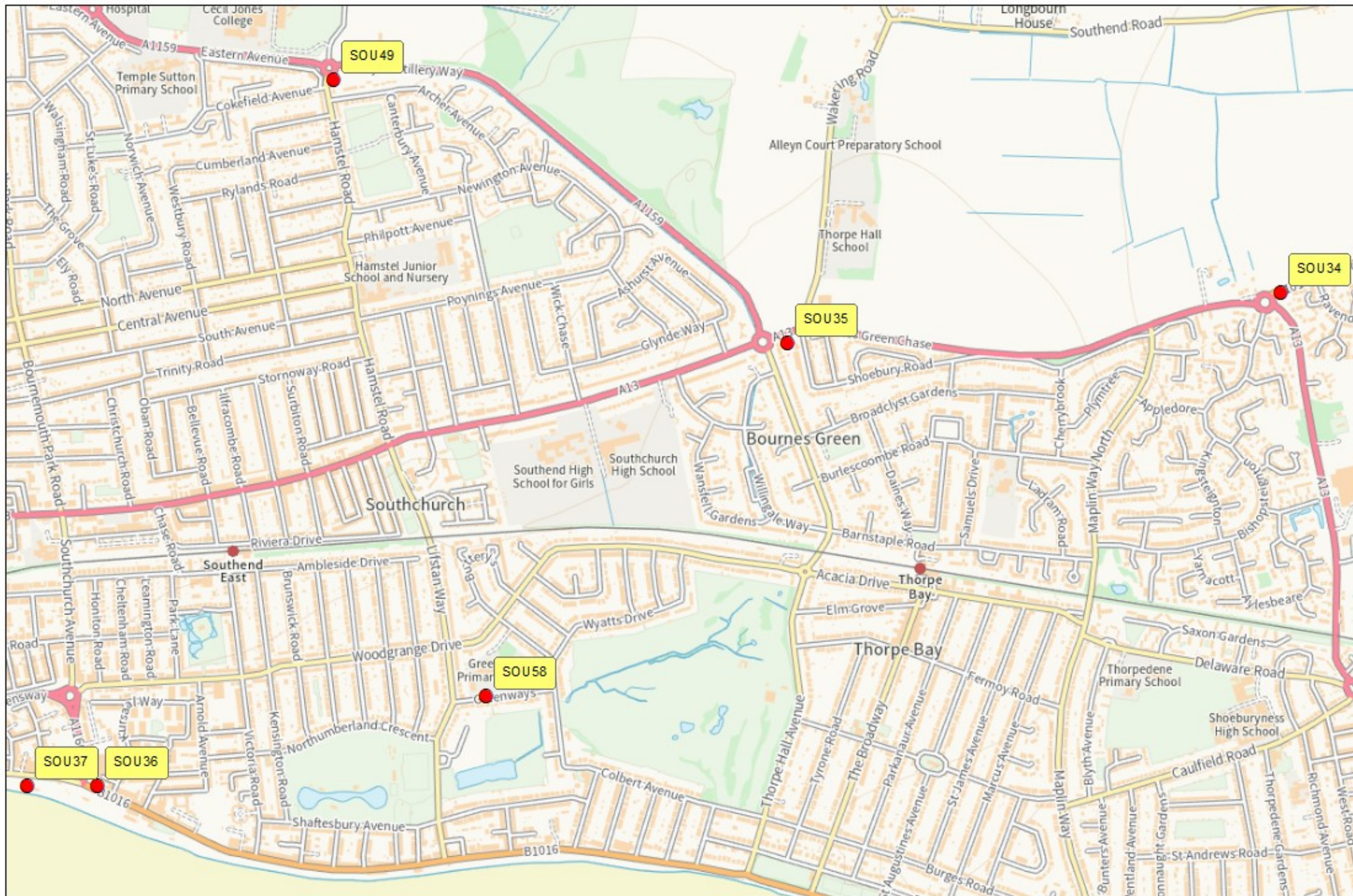
Figure D.2 – Map of Non-Automatic Monitoring Sites: Map of Non-Automatic Monitoring Sites: Central Southend including AQMA2



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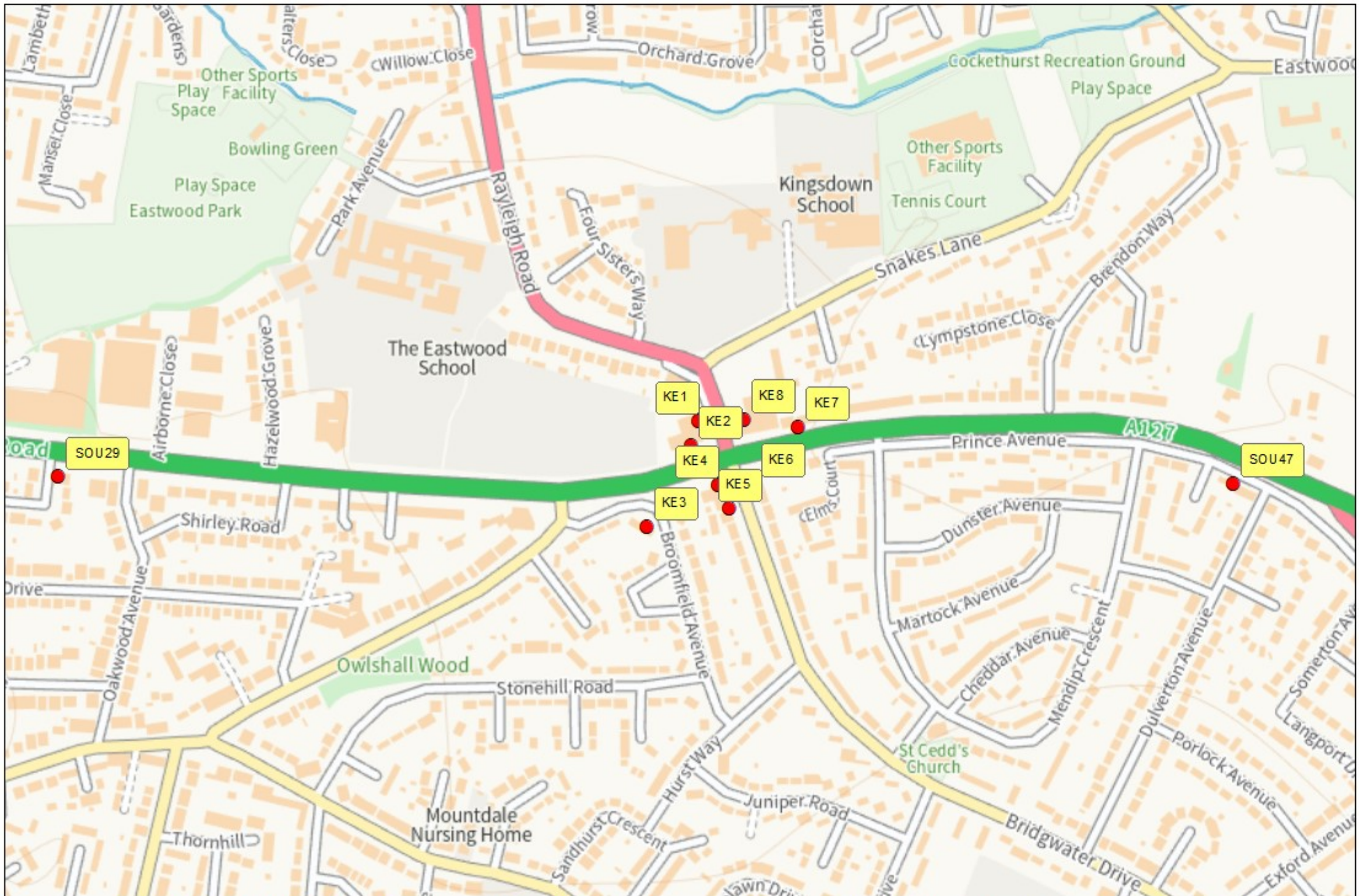
Figure D.3 – Map of Non-Automatic Monitoring Sites: Map of Non-Automatic Monitoring Sites: Eastern Southend



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Figure D.4 – Map of Non-Automatic Monitoring Sites: Map of Non-Automatic Monitoring Sites: Kent Elms



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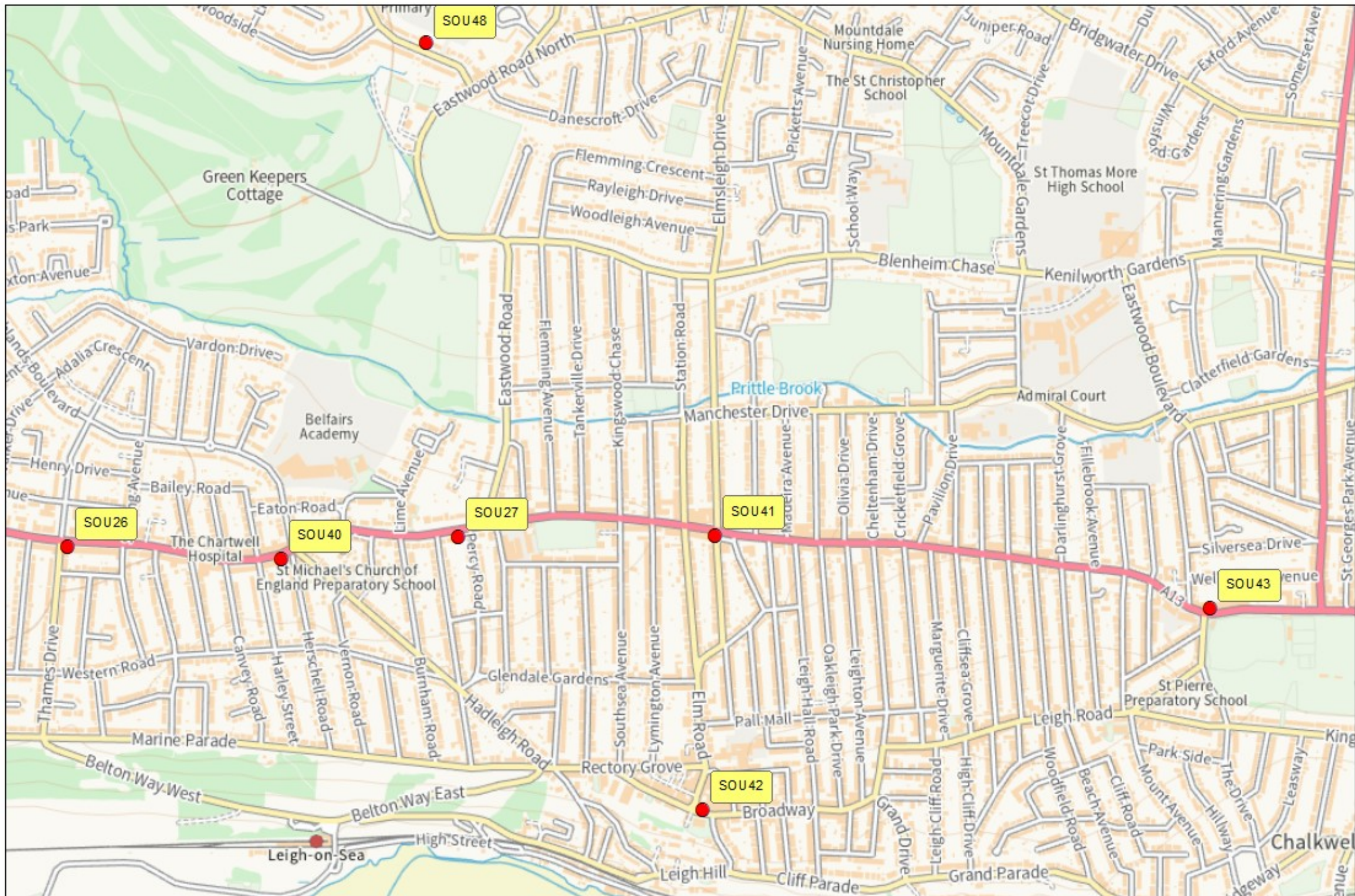
Figure D.5 – Map of Non-Automatic Monitoring Sites: Map of Non-Automatic Monitoring Sites: London Southend Airport



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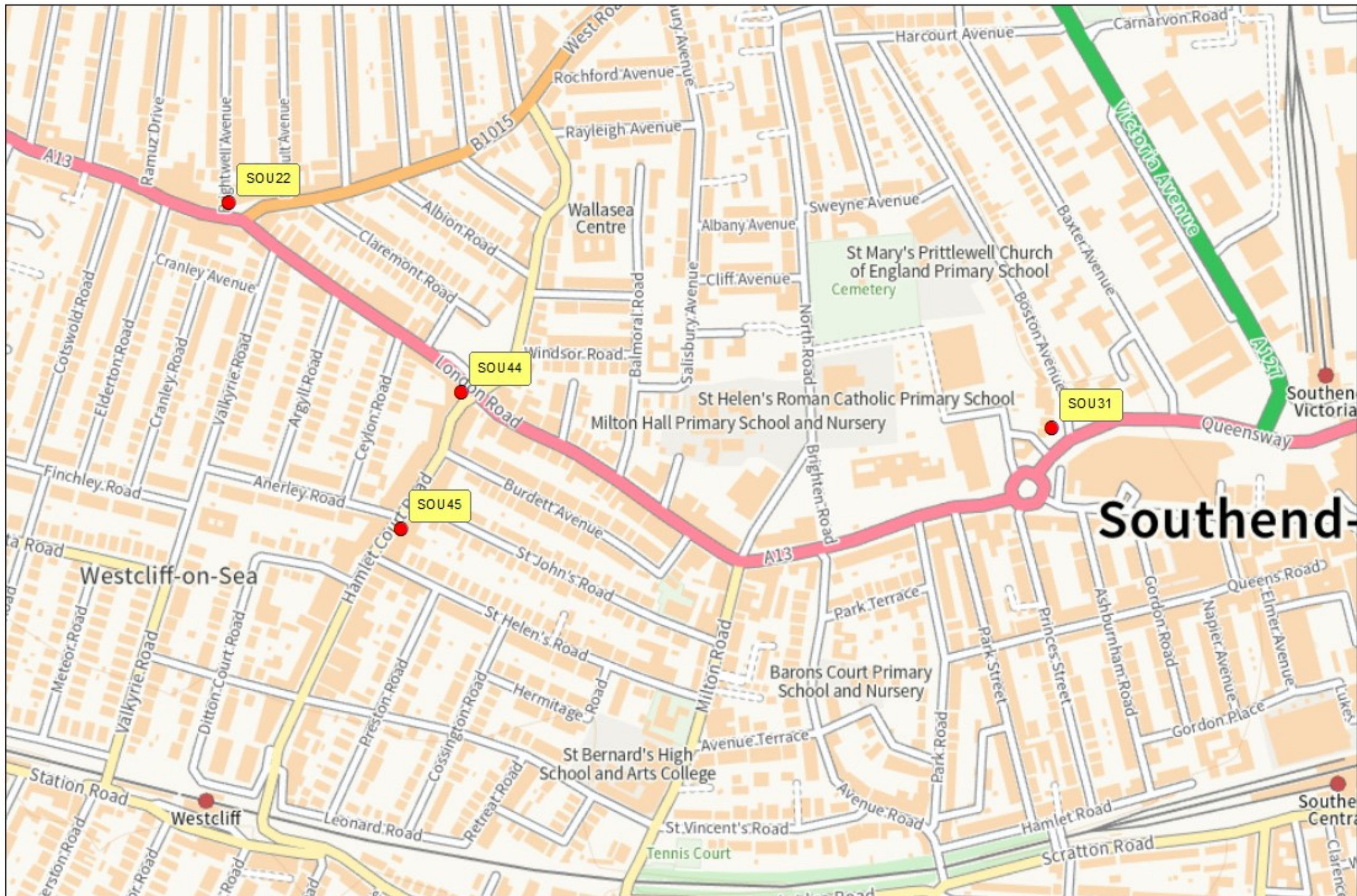
Figure D.6 – Map of Non-Automatic Monitoring Sites: Map of Non-Automatic Monitoring Sites: A13 and Leigh-on-Sea



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Figure D.7 – Map of Non-Automatic Monitoring Sites: Map of Non-Automatic Monitoring Sites: Westcliff-on-Sea



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## Appendix E: Summary of Air Quality Objectives in England

**Table E.1 – Air Quality Objectives in England<sup>4</sup>**

Pollutant	Air Quality Objective: Concentration	Air Quality Objective: Measured as
Nitrogen Dioxide (NO <sub>2</sub> )	200µg/m <sup>3</sup> not to be exceeded more than 18 times a year	1-hour mean
Nitrogen Dioxide (NO <sub>2</sub> )	40µg/m <sup>3</sup>	Annual mean
Particulate Matter (PM <sub>10</sub> )	50µg/m <sup>3</sup> , not to be exceeded more than 35 times a year	24-hour mean
Particulate Matter (PM <sub>10</sub> )	40µg/m <sup>3</sup>	Annual mean
Sulphur Dioxide (SO <sub>2</sub> )	350µg/m <sup>3</sup> , not to be exceeded more than 24 times a year	1-hour mean
Sulphur Dioxide (SO <sub>2</sub> )	125µg/m <sup>3</sup> , not to be exceeded more than 3 times a year	24-hour mean
Sulphur Dioxide (SO <sub>2</sub> )	266µg/m <sup>3</sup> , not to be exceeded more than 35 times a year	15-minute mean

<sup>4</sup> The units are in microgrammes of pollutant per cubic metre of air (µg/m<sup>3</sup>).

## 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'
AQIA	Air Quality Impact Assessment – Reports provided in support of planning applications.
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
ASR	Air Quality Annual Status Report
CVTF	Clean Vehicle Technology Fund – A DfT fund that provides grants for upgrading vehicles to reduce emissions in areas of poor air quality
Defra	Department for Environment, Food and Rural Affairs
DfT	Department for Transport
EU	European Union
Euro Standard	Euro standards define the acceptable limits for exhaust emissions of new vehicles sold in <a href="#">EU</a> and <a href="#">EEA</a> member states.
LAQM	Local Air Quality Management
NO <sub>2</sub>	Nitrogen Dioxide
NO <sub>x</sub>	Nitrogen Oxides
PM <sub>10</sub>	Airborne particulate matter with an aerodynamic diameter of 10µm (micrometres or microns) or less
PM <sub>2.5</sub>	Airborne particulate matter with an aerodynamic diameter of 2.5µm or less
QA/QC	Quality Assurance and Quality Control
SCRT	Selective Catalytic Reduction Technology – Retrofitted equipment to reduce bus emissions
Street Canyon	Road which is flanked by buildings resembling a canyon
TEA	Triethanolamine – substance used in diffusion tubes for absorbing nitrogen dioxide
UK-AIR	An information resource providing in-depth information on air quality and air pollution in the UK. A range of information is available, from the <a href="#">latest pollution levels</a> , <a href="#">pollution forecast information</a> , <a href="#">a data archive</a> , and details of the various <a href="#">monitoring networks</a> .
UKAS	United Kingdom Accreditation Service

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- Southend-on-Sea City Council Corporate Plan available at; <https://www.southend.gov.uk/council-8/corporate-plan/4>