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# Air Quality Annual Status Summary Report 2019

June 2019

## Introduction

This summary report provides an overview of air quality in the London Borough of Southwark during 2019. The full Annual Status Report is available at:

<https://www.southwark.gov.uk/environment/air-quality/what-we-re-doing/air-quality-strategies-plans-and-letters?chapter=2>

The EU and national legislation sets objective limits for a number of air pollutants that must be met. The London Borough of Southwark is exceeding the objective limit for Nitrogen Dioxide (NO<sub>2</sub>) in parts of the borough. The main areas of concern are in the north west of the Borough and along main roads and arterial routes. Southwark is required, by both the UK Government and the Mayor of London, to monitor air pollution in the borough and to take action to reduce pollutant levels and improve air quality. The Government and the Mayor of London also have responsibilities to reduce atmospheric pollution.

Southwark currently meets the objective limits for all the other pollutants of concern. We keep a watching brief on Particulate Matter (PM<sub>10</sub> breathable & PM<sub>2.5</sub> bio-absorbable) as particulates have detrimental impacts on health at any level and there are occasional high particulate events due to trans-boundary pollution.

The main sources of pollution in the borough are road transport, construction and gas boilers used for domestic and commercial heating.

### NO<sub>2</sub>

We monitored NO<sub>2</sub> across the borough using highly accurate automatic continuous monitoring stations and indicative diffusion tubes. In 2019 overall NO<sub>2</sub> levels showed a slight decrease.

### PM<sub>10</sub>

We monitored PM<sub>10</sub> at 2 automatic continuous monitoring stations. In 2019 overall PM<sub>10</sub> levels showed no significant change.

## Southwark's Air Quality Network Expansion

Next year three new AQMS will be added to the air quality network and we are replacing all existing equipment, and will also be introducing PM<sub>2.5</sub> monitoring at all 6 sites.

Station Name	Station Reference	Status	Monitored Pollutants			
			Nitrogen Dioxide	Particulate Matter PM <sub>10</sub>	Particulate Matter PM <sub>2.5</sub>	Ozone O <sub>3</sub>
Old Kent Road	SWK 5	Operational To be upgraded August 2020	✓	✓	✓	
Elephant & Castle	SWK 6	Operational To Be upgraded in September 2020	✓	✓	✓	✓
Tower Bridge Road	SWK 8	Operational To Be upgraded in September 2020	✓	✓	✓	
Lower Road	SWK 9	Proposed to be installed Autumn 2020	✓	✓	✓	
Camberwell	SWK 10	Proposed to be installed Autumn 2020	✓	✓	✓	
South Circular Road	SWK11	Proposed to be installed Autumn 2020	✓	✓	✓	

## NO<sub>2</sub> Monitoring

Southwark currently has 3 operational Air Quality Monitoring Stations (AQMS) with NO<sub>2</sub> continuous monitors. At the Elephant & Castle, Old Kent Road and Tower Bridge Road AQMS these are co-located with the PM<sub>10</sub> monitors, shown as green squares in Figure 2.

Site ID	Annual Mean Concentration (µg.m <sup>-3</sup> )							National Air Quality Objective for Nitrogen Dioxide
	2013	2014	2015	2016	2017	2018	2019	
Old Kent Road	55	38	42	53	42	41	35	40µg.m <sup>-3</sup>
Elephant & Castle	42	37	41	39	34	32	30	
Tower Bridge Road							39	

The monitoring stations show that there has been a gradual decrease in the annual mean of NO<sub>2</sub> over the last six years, but it is very weather dependant. For 2019 all the monitoring stations are below the EU Directive Nitrogen Dioxide Limit of 40µg.m<sup>-3</sup>; however, the roadside station at Tower Bridge Road is only under the objective limit by 1µg.m<sup>-3</sup>.

Southwark currently has 88 diffusion tubes across all areas of the borough. The NO<sub>2</sub> diffusion tube results show a continuing reduction in the number of locations where NO<sub>2</sub> concentrations exceed the objective limit.

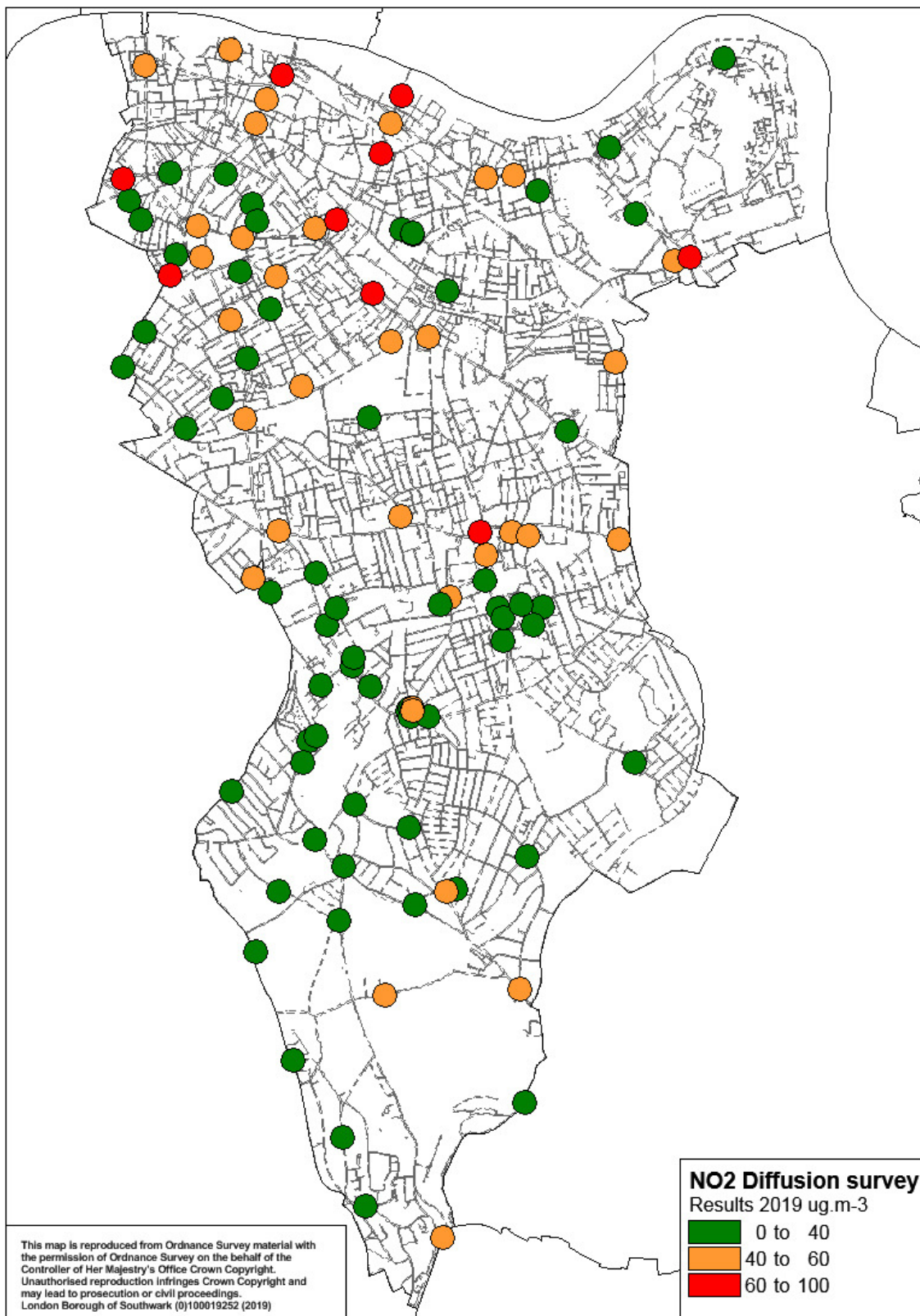


Figure 1 – Map of NO<sub>2</sub> monitoring sites in Southwark, showing annual mean results from 2019

Site ID	2012	2013	2014	2015	2016	2017	2018	2019
SDT 1 - 3	50.0	56.7	57.6	48.1	47.0	42.0	38.0	36.0
SDT 4	52.3	<u>61.9</u>	<u>63.5</u>	57.2	54.6	47.6	42.5	40.4
SDT 5	35.6	38.4	38.2	35.8	34.1	29.3	30.7 <sup>1</sup>	31.75 <sup>1</sup>
SDT 6	48.6	51.6	54.3	49.7	42.9	42.0	39.4	36.7
SDT 7	51.3	57.0	<u>61.5</u>	52.5	44.3	41.7	35.6	30.4
SDT 8	32.6	37.0	33.8	31.6	31.1	27.9	26.0	25.2
SDT 9	45.6	50.5	54.0	47.0	44.8	41.2	37.3	34.9
SDT 10	33.6	36.6	34.9	33.7	30.1	28.0	28.3	25.6
SDT 11	<u>72.0</u>	<u>80.1</u>	<u>78.1</u>	<u>70.4</u>	<u>60.0</u>	55.1	50.8	45.9
SDT 12 - 14	50.7	<u>66.3</u>	<u>70.6</u>	<u>65.7</u>	58.9	44.7	35.0	33.3
SDT 15	57.2	<u>66.0</u>	<u>66.4</u>	57.3	<u>63.5</u>	53.0	47.1	42.2
SDT 18			<u>71.8</u>	<u>65.1</u>	<u>62.5</u>	<u>61.6</u>	54.1	55.0
SDT 20			<u>72.1</u>	<u>62.2</u>	<u>63.9</u>	<u>61.4</u>	52.7	45.1
SDT 24			<u>72.2</u>	<u>67.5</u>	<u>67.6</u>	<u>69.6</u>	53.5	51.7
SDT 29			<u>72.1</u>	<u>68.4</u>	<u>72.2</u>	<u>75.4</u>	57.0	50.4
SDT 31	No Data	No Data	54.2	49.7	49.0	47.1	40.6	38.1
SDT 38			<u>82.6</u>	<u>80.8</u>	<u>65.2</u>	<u>64.6</u>	45.0	40.7
SDT 39			57.1	53.9	47.5	46.7	39.2	35.1
SDT 41			58.4	53.3	47.2	45.9	39.3	37.4

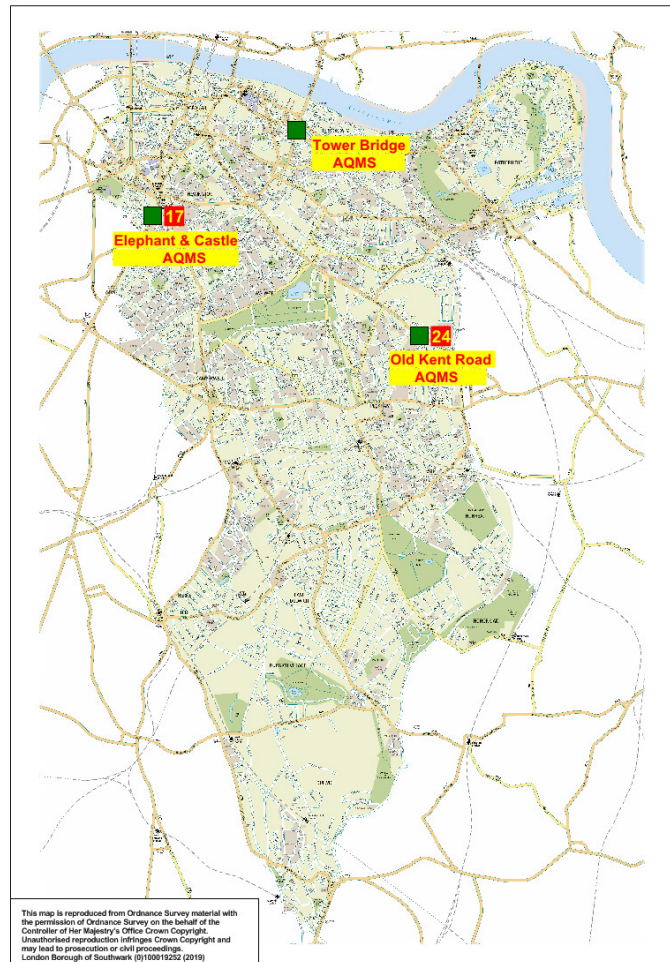
The Nitrogen Dioxide Diffusion Tube survey shows that the concentrations in the Authority have been reducing over the last eight years, but there are still locations showing exceedences of the objective. These are mainly in the north of the Borough on the main roads.

<sup>1</sup> This result is lower than the background concentration in the Defra Background Maps, therefore it cannot be corrected for distance to a point of relevant exposure.

## PM<sub>10</sub> Monitoring

At present, the Authority monitors Particulate Matter (PM<sub>10</sub>) at two locations in the Borough, the table below shows that the annual mean concentration has been below the objective level since 2013, but there are no obvious trends, as the exceedences are more likely due to varying metrological conditions during the period.

Site ID	Annual Mean Concentration (µg.m <sup>-3</sup> )							National Air Quality Objective for Particulate matter (PM <sub>10</sub> )
	2013	2014	2015	2016	2017	2018	2019	
Old Kent Road	30	23	21	24	22	22	24	40µg.m <sup>-3</sup>
Elephant & Castle	23	19	20	26	19	20	17	



**Figure 2 – Map of PM<sub>10</sub> monitoring sites in the London Borough of Southwark, showing annual mean results from 2019**

The green squares represent operational AQMS, and adjacent numbers show recorded annual mean PM<sub>10</sub> concentrations at AQMS with continuous PM<sub>10</sub> monitors. The EU annual mean limit value for PM<sub>10</sub> is 40µg.m<sup>-3</sup>.

## Actions to Improve Air Quality

The London Borough of Southwark's main air quality achievements in 2019 were:

- Produced the #OneThing Air Quality Awareness publicity campaign
- Introduced several 'School Streets' in the Borough and identified many other schools for an assessment to introduce 'School Streets'.
- Three London Mayor 'Nursery Air Quality Audits' were undertaken, and one nursery in the Borough participated in the Nursery Ventilation Project.
- The Authority is creating a Low Emission Neighbourhood in the Walworth area.
- Promoting active travel in the borough's School Superzone areas.
- The teams from Environmental Protection and Public Health have been working together to increase air quality awareness with GP's
- Improving the cycling infrastructure in the borough to promote Active Travel.
- Work is being progressed throughout the Borough to improve the heating and energy provisions to Council housing stock.

Southwark's main priorities to reduce exposure to poor air quality for the year ahead are:


- To renew the air quality monitoring analysers in the authority's existing air quality monitoring stations and install PM<sub>2.5</sub> monitors at all the sites and to install and commission three new air quality monitoring stations in the Borough, with all new stations monitoring NO<sub>2</sub>, PM<sub>10</sub> and PM<sub>2.5</sub>.
- To conduct an air quality audit at all schools in the Old Kent Road Opportunity Area and all Southwark maintained schools in areas where the NO<sub>2</sub> national objective of 40µg.m<sup>-3</sup> is exceeded. The air quality audits will also be offered 'at cost' to all Southwark non-maintain schools in areas where the NO<sub>2</sub> national objective of 40µg.m<sup>-3</sup> is exceeded. All participating schools will receive a grant of £5,000 to get started on their audit recommendations.
- To implement the air improvement measures in the Walworth Low Emission Neighbourhood.
- Link the air quality action plan with Southwark's forthcoming Climate Change Strategy and identify synergies.
- Work with L.B. Lambeth on the Mayor's Air Quality Fund project to see whether road sweeping is an effective means to reduce the ambient burden of Particulate Matter in the urban environment.
- An air quality assessment is being commissioned for the Old Kent Road Opportunity Area
- Review the current air quality action plan to ensure that the plan remains relevant.

## Further information

For further information on air pollution in Southwark:  
<https://www.southwark.gov.uk/environment/air-quality>

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