Wandsworth Borough Council
Air Quality Annual Status Report for 2017
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This report provides a detailed overview of air quality in the London Borough of Wandsworth during 2017. It has been produced to meet the requirements of the London Local Air Quality Management statutory process[1].

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[1] LLAQM Policy and Technical Guidance 2016 (LLAQM.TG(16)). https://www.london.gov.uk/what-we-do/environment/pollution-and-air-quality/working-boroughs

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Abbreviations

AQAP	Air Quality Action Plan
AQMA	Air Quality Management Area
AQO	Air Quality Objective
BEB	Buildings Emission Benchmark
CAB	Cleaner Air Borough
CAZ	Central Activity Zone
EV	Electric Vehicle
EVCP	Electric Vehicle Charging Point
GLA	Greater London Authority
GULCS	Go Ultra Low City Scheme
LAEI	London Atmospheric Emissions Inventory
LAQM	Local Air Quality Management
LLAQM	London Local Air Quality Management
MAQF	Mayor's Air Quality Fund
NRMM	Non-Road Mobile Machinery
PM_{10}	Particulate matter less than 10 micron in diameter
$PM_{2.5}$	Particulate matter less than 2.5 micron in diameter
TEB	Transport Emissions Benchmark
TfL	Transport for London

Executive Summary

Wandsworth is an inner London borough with both urban and suburban characteristics. It is bounded by the River Thames to the north, Vauxhall to the east, Richmond Park to the west and Wimbledon to the south. The borough has many parks and open spaces; with very little areas for industrial use the main land use is residential and the predominant source of air pollution is road traffic. In recent years there has been a surge in development particularly around Vauxhall with the Nine Elms development located around the site of the former Battersea Power Station.

An Air Quality Management Area (AQMA) for the whole of the borough was declared in 2001 for exceedances of the nitrogen dioxide (NO2) annual mean air quality objective limit and the daily mean for particulate matter (PM10). An Air Quality Action Plan (AQAP) was put in place detailing the actions the council would be taking to reduce pollutant concentrations to below the objective limits. Many of these actions have been completed and a new AQAP was written and adopted in 2016.

This annual status report (ASR) provides the second report on progress of actions from the Wandsworth Air Quality Action Plan 2016-2021. The report details trends in NO2 and PM10 concentrations since 2011. Overall, a decrease in concentrations has been observed however the annual mean NO2 objective continues to be exceeded at most roadside locations.

Nitrogen Dioxide

Promisingly recorded annual means at all automatic nitrogen dioxide monitoring stations and at all sites where nitrogen dioxide diffusion tubes are located are lower in 2017 than in the previous year 2016. However this is not time to be complacent as air quality is influenced by meteorology and other factors outside of the Council's control. There have been significant reductions in nitrogen dioxide in Putney High Street. However, as the annual mean objective is still being exceeded more work is still needed at these locations and at other sites near busy roads to reduce concentrations. The 1-hour mean air quality objective was met at the air quality monitoring station adjacent to the façade of the buildings in Putney High Street for in 2017, recording 9 exceedences when compared with the objective of no more than 18 exceedences. In comparison there were 403 exceedences in 2016 and 1726 in 2012. These exceedences coincided with the introduction of cleaner buses and a low emission bus zone. The 1-hour mean air quality objective was exceeded at the kerbside air quality monitoring station in Putney High Street but met at all other locations where monitored.

PM10

The annual mean objective for PM_{10} continues to be met at all monitoring stations, however the measured concentrations at Putney High Street, Battersea and Tooting High Street still exceed the World Health organisation (WHO) limit of 20 µg m^{-3}.

The 24-hour mean objective for PM10 was met at all monitoring stations within the borough. The number of exceedences of the 24-hour mean in Battersea reduced considerably in 2017 when compared with the previous year. This coincided with the employment of a construction site compliance officer to take action to ensure that construction sites were meeting the requirements of their Construction Environmental Management Plans to reduce their PM10 emissions.

Air Quality Action Plan

Good progress is being made implementing actions within the action plan. Some of the notable achievements are given below:

Vehicle idling activities

The Council has been proactively dealing with idling issues within the Borough for the last year and further improvements have been recently made. We initially authorised three civil enforcement officers to issue Fixed Penalty Notices to drivers as part of a small pilot to ensure that the training material we had produced was ready for a larger roll out of training to other enforcement officers in the team. More recently, in December 2017, the remaining Wandsworth civil enforcement officers were trained (70 officers in total) in the use of these enforcement powers and they have also been provided with information leaflets on the impacts of vehicle idling to hand to drivers who they are dealing with. So far all of the drivers who have been asked to switch off their engines have done so and there has therefore not yet been a need to issue a fixed penalty notice.

Air Quality Champions/ vehicle idling project with other local authorities (MAQF)

We are promoting anti-idling behaviour close to sensitive receptors (schools, hospitals, etc.) through campaigns. We explain what idling is and how we can all improve the local air quality by switching off car engines. We visited 4 schools in 2017 and spoke to individuals asking them to switch their engines off. 90% of individuals switched their engines off when asked to do so. We have been actively involved in an activity to monitor to evaluate the effectiveness of this project. The project raised awareness about idling so that parents are more responsible in switching off their engines in front of schools and around the borough. The children in the schools were provided with assemblies and an interactive activity to raise their activity about air quality and vehicle idling so that they can spread the message to their families.

Installation of Electric Vehicle Charging Points

In 2017 there were a total of 99 Electric Vehicle Charging Points (EVCPs) installed across 33 sites provided by Source London. There are a further 120 EVCPS due to be installed at various locations across the borough and a programme to decide where the location of street column charging is under way. Wandsworth has already begun installing charging equipment to just under 630 lamposts in the borough. This means that Wandsworth is on course to deliver nearly 850 on-street charging points in total. These will come in the form of:

- The installation of 380 charging sockets in every available lampost within two pilot zones – in Putney (149) and Battersea (231) – to gauge local demand and encourage more people to go electric. The results from these trial schemes could see this key infrastructure extended to other areas.

- Outside of these two pilot zones another 245 lamposts are having EV sockets fitted to them in parts of the borough where local people have already “gone electric”.

- Source London is providing another 120 charging points at various locations across the borough, adding to the 99 already in use at 33 separate places in Wandsworth.

For those who don't need to own a vehicle but want to enjoy occasional eco-friendly motoring, a new e-car club is being established in Wandsworth – offering a convenient and eco-friendly alternative to car ownership, providing electric vehicles to hire by the hour, day or week.

The installation of so much charging infrastructure is the first phase of a comprehensive £3m council initiative designed to encourage much greater take-up of this greener and cleaner form of transport, and also to support those who have already made the switch.

Putney High Street Air Quality Improvement Project (MAQF)

This project has sought to identify actions to improve air quality within Putney High Street still further, building on the successes of the work to reduce emissions from buses and on activities to reduce the impact of deliveries on air quality. Actions have been identified and evaluated and consulted on with local stakeholders. Funding has been identified and actions are now being implemented to improve air quality.

Nine Elms construction site actions to reduce emissions

Concerted actions have been undertaken to reduce emissions from construction sites within Nine Elms. A construction site compliance officer (CSCO) has been appointed to proactively manage environmental impacts from major development. to ensure that actions are undertaken to reduce emissions from construction sites within the area. In 2016 there were 43 exceedences of the 24 hour mean PM10 objective. In 2017 there were 16 exceedences of the 24 hour mean PM10 objective.

London Low Emission Construction Partnership (MAQF)

Actions are being undertaken to reduce emissions from construction. We are working with Kings College London in partnership with a consortium of other London boroughs on the London Low Emission Construction Partnership (LLECP). The priority area for compliance is currently the Nine Elms development in Vauxhall. Air quality monitoring data collated by the developer is analysed to check for exceedances above the agreed limit. Further analysis is conducted to observe the effect the development is having on air quality concentrations in the wider vicinity and then compared with other locations across London. The CSCO also advises on the requirement to comply with NRMM regulations despite many of the developments having been granted planning permission prior to the regulations coming into force. Officers are also employed to ensure NRMM compliance at major developments across South London; this project is conducted in partnership with neighbouring boroughs.

Kings College and the CSCO have been working with developers within the Nine Elms development in Vauxhall in order to trial new technology designed to reduce pollution and exposure to pollution from sites. The data obtained from these trials is intended to be developed into a case study and shared with the LLECP and the wider construction industry.

Town Centre actions to reduce emissions

Work is taking place in Tooting and Clapham junction to reduce emissions and exposure. These actions involve working with Town Centre Manager's and local businesses. Action plans for each area have been drawn up and are being implemented to facilitate air quality improvements.

ULEZ consultation response

Wandsworth responded to the ULEZ and LEZ consultation in February 2018. The Council broadly supports the proposal to tighten the LEZ for greater London to bring forward health benefits for our residents, businesses and visitors to the borough. The Council is broadly supportive of expanding the ULEZ to a wider area but has significant concerns regarding the use of the South circular as the southern boundary.

Table A. Summary of National Air Quality Standards and Objectives

Pollutant	**Objective (UK)**	**Averaging Period**	**Date[1]**
Nitrogen dioxide - NO_2	200 μg m^{-3} not to be exceeded more than 18 times a year	1-hour mean	31 Dec 2005
	40 μg m^{-3}	Annual mean	31 Dec 2005
Particles - PM_{10}	50 μg m^{-3} not to be exceeded more than 35 times a year	24-hour mean	31 Dec 2004
	40 μg m^{-3}	Annual mean	31 Dec 2004
Particles - $PM_{2.5}$	25 μg m^{-3}	Annual mean	2020
	Target of 15% reduction in concentration at urban background locations	3 year mean	Between 2010 and 2020
Sulphur Dioxide (SO_2)	266 μg m^{-3} not to be exceeded more than 35 times a year	15 minute mean	31 Dec 2005
	350 μg m^{-3} not to be exceeded more than 24 times a year	1 hour mean	31 Dec 2004
	125 μg m^{-3} mot to be exceeded more than 3 times a year	24 hour mean	31 Dec 2004

Note: [1] by which to be achieved by and maintained thereafter

1. Air Quality Monitoring

1.1 Locations

Table B. Details of Automatic Monitoring Sites for 2017 (and from 2011 to 2016)

Site ID	Site Name	X (m)	Y (m)	Site Type	In AQMA?	Distance from monitoring site to relevant exposure (m)	Distance to kerb of nearest road (N/A if not applicable) (m)	Inlet height (m)	Pollutants monitored	Monitoring technique
WA2	**Wandsworth Town Hall**, High street Wandsworth (commissioned 11th October 1994)	525779	174662	Urban background	Y	none	22m	4.85m	CO, NO_2, O_3, SO_2	Chemiluminescent
WA7	**Putney High Street**, 94A Putney High street (commissioned 9th July 2009). Denomination according to London Air website: **Putney high street kerbside**	524035	175334	Kerbside	Y	1m	0.85m	1.75m	NO_2, PM_{10}	Chemiluminescent; TEOM
WA8	**Putney High Street**, 94A Putney High street (commissioned 23rd July 2010). Denomination according to	524032	175335	Roadside	Y	1m	4.5	4.85m	NO_2	Chemiluminescent

	London Air website: **Putney high street façade roadside**									
WA9	**Felsham Road**, Putney (commissioned 4th January 2011). Denomination according to London Air website: **Putney urban background**	524044	175495	Urban background	Y	1m	4.8m from Felsham road; 46m from Putney high street kerb	3.35m	NO_2, PM_{10}	Chemiluminescent; TEOM
WAA	**Thessaly Road**, Battersea (commissioned 4th January 2011). Denomination according to London Air website: **Battersea**	529137	177249	Roadside	Y	1m	7.5m from Battersea Park road kerb	1.75m	NO_2, PM_{10}	Chemiluminescent; TEOM
WAB	**Tooting High Street** (commissioned 11th June 2015)	527567	171628	Roadside	Y	0m	2m	1.75m	NO_2, PM_{10}	Chemiluminescent; TEOM
WAC	**313 Lavender Hill**, Clapham Junction (commissioned 14th April 2016; Denomination according to London Air website: Clapham Junction)	527430	175454	Roadside	Y	1m	8m from Lavander Hill kerb; 3.75m Illminster Gardens kerb	1.75m	NO_2, PM_{10}	Chemiluminescent; TEOM

Table C. Details of Non-Automatic Monitoring Sites for 2017

Site ID	Site Name	X (m)	Y (m)	Site Type	In AQMA?	Distance from monitoring site to relevant exposure (m)	Distance to kerb of nearest road (N/A if not applicable) (m)	Inlet height (m)	Pollutants monitored	Tube co-located with an automatic monitor? (Y/N)
W23	**37 West Hill**, Wandsworth Town	525111	174619	Roadside	Y	2.20	3.02	2.52	NO_2	No
W24	**Putney sign (Mac Donald's)**, Putney	524045	175366	Roadside	Y	0	2.35	2.3	NO_2	N
W21 & W22	**Felsham Road tube 1 & tube 2**, Putney	524044	175495	Urban Background	Y	1	4.8m from Felsham road; 46m from Putney high street kerb	3.35	NO_2	Y
W6	**21 Daylesford Avenue**, Putney	522270,	175307	Urban Background	Y	11	2.4	2.85	NO_2	N
W25	**Roehampton Church School** (on corner of Roehampton Lane), Roehampton	522542	173700	Roadside	Y	0.86	0.53	2.25	NO_2	N
W26	**Replingham Road** (corner of Heythrope street), Southfield	524847	173282	Kerbside	Y	2.54	0.62	2.37	NO_2	N
W27	**68-70 Sutherland Grove** (opposite St. Cecilia's school), Southfield	524633	173594	Urban Background	Y	2.00	0.65	2.83	NO_2	N
W28	**61 Summerley Street**, Earlsfield	526011	172869	Urban background	Y	2.06	0.60	2.36	NO_2	N
W29	**Junction Skelbrook Street / Garratt Lane**, Earlsfield	526099	172833	Roadside	Y	0.70	3.29	2.27	NO_2	N

W4	**108 Mitcham Road**, Tooting Broadway	527688	171204	Kerbside	Y	3	0.6	2.65	NO_2	N
W8	**50 Bickely Street**, Tooting Broadway	527524	171239	Urban Background	Y	2.97	1.85	2.8	NO_2	N
W30	**11B Elmbourne Road**, Balham	528900	172431	Urban Background	Y	4.50	0.50	2.56	NO_2	N
W31	**Junction Hildreth Street / Bedford Hill**, Balham	528607	173333	Kerbside	Y	1.44	3.64	2.21	NO_2	N
W32	**2-3 Balham High Road**, Balham	528436	173133	Kerbside	Y	4.40	0.71	2.30	NO_2	N
W33	**Lockington Road**, Battersea	528871	176943	Urban Background	Y	1.22	0.69	2.37	NO_2	N
W34	**46 Shelgate Road**, Northcote	527569	174986	Urban Background	Y	2.14	0.40	2.38	NO_2	N
W35	**47 Northcote Road**, Northcote	527487	174981	Kerbside	Y	4.21	0.49	2.37	NO_2	N
W36	**St. Anne's Hill** (opposite St. Anne's School), Fairfield	525875	174616	Urban Background	Y	2.73	0.89	2.38	NO_2	N
From 2011 to 2016										
W3	**Newton Preparatory School**, 149 Battersea Park road	528866	177024	Kerbside	Y	5	0.75	2.65	NO_2	N
W5	**Upper Richmond Road**	522265	175470	Roadside	Y	3.92	1.05	2.95	NO_2	N
W7	**Adjacent to Coop Petrol station**, Roehampton Vale	522031	172699	Roadside (NO_2 site)	Y	22.51	3	2.65	NO_2	N
B1	**Adjacent to Coop Petrol station**, Roehampton Vale	522058	172715	Roadside (Benzene site)	Y	24.9	5.5	2.65	Benzene	N
W9	**Putney High street**	524021	175258	Kerbside	Y	0.75	1	2.8	NO_2	N
W12 & W13	**Wandsworth Plain**, Wandsworth (2 tubes)	525493	174809	Roadside	Y	6.55	2.1	4	NO_2	N
W10	**Werter road**	524156	175173	Urban	Y	3.13	0.8	2.8	NO_2	N

				background						
W14 & W15	**Este road**	527307	175848	Urban background	Y	9.77	0.5	2.5	NO_2	N
W16 & W17	**St John's Hill / Falcon road**	527347	175452	Roadside	Y	64.9	3.5	2.3	NO_2	N
W18 & W19	**Totterdown street**	527588	171670	Roadside	Y	14.7	6	2.7	NO_2	N
P1 & P2	**Façade First Floor**, Putney High street	524032	175335	Roadside	Y	0	4.6	4.7	NO_2	N
P3 & P4	**Façade Second Floor**, Putney High street	524032	175335	Roadside	Y	0	4.6	8.1	NO_2	N
P5 & P6	**Façade Third Floor**, Putney High street	524032	175335	Roadside	Y	0	4.6	12.05	NO_2	N
P7, P8 & P9	**Kerbside Air Quality Monitoring Station**, Putney High street	524036	175336	Kerbside	Y	1.45	0.9	1.77	NO_2	Y
P10 & P11	**Sign in centre of pavement**, Putney High street	524044	175363	Kerbside	Y	0	2.35	2.3	NO_2	N
2016 only										
CJ1 & CJ2	**Falcon road Bus Stop**, Clapham Junction	527286	175691	Kerbside	Y	28.3	1.1	2	NO_2	N
CJ3 & CJ4	**Falcon road**, Clapham Junction	527348	175569	Roadside	Y	62	1.1	2	NO_2	N
CJ5 & CJ6	**Lavender Hill**, Clapham Junction	527428	175464	Roadside	Y	16.5	1.5	2	NO_2	N
CJ7 & CJ8	**Beauchamp road**, Clapham Junction	527508	175344	Urban background	Y	4.85	0.6	2	NO_2	N
CJ9 & CJ10	**St John's road**, Clapham Junction	527388	175368	Roadside	Y	61.59	4.4	2.55	NO_2	N
CJ11 & CJ12	**St John's Hill**, Clapham Junction	527209	175365	Roadside	Y	4	2.7	2.34	NO_2	N

From June 2015 to May 2016										
T1 & T2	**Blakenham road**, Tooting	527772	171701	Urban background	Y	1.4	0.6	2.3	NO_2	N
T3, T4 & T5	**Air Quality Monitoring Station**, Tooting	527561	171628	Roadside	Y	0	2	1.77	NO_2	Y
T6 & T7	**Upper Tooting road**, Tooting	527736	172019	Roadside	Y	33.68	2.1	2.7	NO_2	N
T8 & T9	**Fircroft road**, Tooting	527674	172542	Urban background	Y	13.3	0.4	2.5	NO_2	N
T10 & T11	**Broadwater road**, Tooting	527072	171744	Roadside	Y	13.66	0.8	2.5	NO_2	N
T12 & T13	**908 Garratt lane**, Tooting	527222	171621	Roadside	Y	2.84	0.8	2.7	NO_2	N
T14 & T15	**Gambole road**, Tooting	527127	171569	Urban background	Y	2.65	0.5	2.7	NO_2	N
T16 & T17	**Sellingcourt road**, Tooting	527320	1711115	Urban background	Y	2.8	0.6	2.4	NO_2	N
T18 & T19	**Tooting High street**, Tooting	527294	171207	Roadside	Y	5.85	0.9	2.6	NO_2	N

1.2 Comparison of Monitoring Results with AQOs

The results presented are after adjustments for "annualisation" and for distance to a location of relevant public exposure, the details of which are described in Appendix A.

Table D. Annual Mean NO_2 Ratified and Bias-adjusted Monitoring Results (μg m^{-3})

Site ID	Site type	Valid data capture for monitoring period % [a]	Valid data capture 2017 % [b]	Annual Mean Concentration (μg m^{-3})						
				2011 [c]	2012 [c]	2013 [c]	2014 [c]	2015 [c]	2016 [c]	2017 [c]
2017										
WA2 (Wandsworth Town Hall)	Automatic	N/A	97%	**46**	**48**	**48**	**43**	36	**43**	40
WA7 (Putney High Street; Denomination according to London Air website: Putney high street kerbside)	Automatic	N/A	76%	**154**	**155**	**124**	**123**	**123**	**124**	**76**
WA8 (Putney High Street; Denomination according to London Air website: Putney high street façade roadside)	Automatic	N/A	98%	**128**	**129**	**106**	**95**	**96**	**110**	**60**

WA9 (Felsham Road; Denomination according to London Air website: Putney urban background)	Automatic	N/A	79%	**43**	40	40	**41**	40	**45**	31
WAA (Thessaly Road, Battersea; Denomination according to London Air website: Battersea)	Automatic	N/A	81%	N/A	N/A	**45**	**47**	40	40	33
WAB (Tooting High Street)	Automatic	N/A	86%	N/A	N/A	N/A	N/A	**60** for monitoring period (**68** for 2015)	**59**	**55**
WAC (313 Lavender Hill; Denomination according to London Air website: Clapham Junction)	Automatic	N/A	92%	N/A	N/A	N/A	N/A	N/A	**46** (ratified)	**43**
W23 (37 West Hill)	Diffusion tube	N/A	100%	N/A	N/A	N/A	N/A	N/A	N/A	**57**
W24 (Putney Sign Mac Donald's)	Diffusion tube	N/A	92%	N/A	N/A	N/A	N/A	N/A	N/A	**63**
W21 & W22 (Felsham road)	Diffusion tube	N/A	91%	---	**42**	**44.3**	**40.3**	35	**41**	28
W6 (21 Daylesford Avenue)	Diffusion tube	N/A	100%	30	28	26	26	24	28	23

W25 (Roehampton Church School)	Diffusion tube	N/A	75%	N/A	N/A	N/A	N/A	N/A	N/A	32
W26 (Replingham Road)	Diffusion tube	N/A	92%	N/A	N/A	N/A	N/A	N/A	N/A	31
W27 (68-70 Sutherland Grove)	Diffusion tube	N/A	100%	N/A	N/A	N/A	N/A	N/A	N/A	24
W28 (61 Summerley street)	Diffusion tube	N/A	92%	N/A	N/A	N/A	N/A	N/A	N/A	27
W29 (Junction Skelbrook street / Garratt lane)	Diffusion tube	N/A	100%	N/A	N/A	N/A	N/A	N/A	N/A	31
W4 (108 Mitcham road)	Diffusion tube	N/A	100%	**80**	**91**	**97**	**96**	**79**	**80**	**66**
W8 (50 Bickely street)	Diffusion tube	N/A	100%	33	38	**41**	36	33	35	31
W30 (11B Elmbourne road)	Diffusion tube	N/A	100%	N/A	N/A	N/A	N/A	N/A	N/A	33
W31 (Junction Hildreth Street / Bedford Hill)	Diffusion tube	N/A	100%	N/A	N/A	N/A	N/A	N/A	N/A	39
W32 (2-3 Balham High road)	Diffusion tube	N/A	100%	N/A	N/A	N/A	N/A	N/A	N/A	**46**
W33 (Lockington road)	Diffusion tube	N/A	92%	N/A	N/A	N/A	N/A	N/A	N/A	36

W34 (46 Shelgate road)	Diffusion tube	N/A	100%	N/A	N/A	N/A	N/A	N/A	N/A	31
W35 (47 Northcote road)	Diffusion tube	N/A	100%	N/A	N/A	N/A	N/A	N/A	N/A	34
W36 (St Anne's Hill)	Diffusion tube	N/A	92%	N/A	N/A	N/A	N/A	N/A	N/A	39
From 2011 to 2016										
W3 (Newton Preparatory School)	Diffusion tube	N/A	N/A	**63**	**54**	**65**	**60**	**57**	**63**	(Not existing anymore)
W5 (Upper Richmond Road)	Diffusion tube	N/A	N/A	39	**51**	**60**	**51**	**48**	**52**	(Not existing anymore)
W7 (Adjacent to Coop Petrol station)	Diffusion tube	N/A	N/A	**53**	**57**	**53**	**47**	**49**	**51**	(Not existing anymore)
W9 (Putney High street)	Diffusion tube	N/A	N/A	**105**	**113**	**116**	**99**	**89**	**104**	(Not existing anymore)
W12 & W13 (Wandsworth Plain)	Diffusion tube	N/A	N/A	**60**	**73**	**71.5**	**69.5**	**58**	**63**	(Not existing anymore)
W10 (Werter road)	Diffusion tube	N/A	N/A	31	38	36	34	35	35	(Not existing anymore)
W14 & W15 (Este road)	Diffusion tube	N/A	N/A	---	27	**41.5**	37.5	32	36	(Not existing anymore)
W16 & W17 (St John's Hill / Falcon road)	Diffusion tube	N/A	N/A	---	**83.5**	**95.5**	**86**	**71**	**77**	(Not existing anymore)
W18 & W19 (Totterdown street)	Diffusion tube	N/A	N/A	---	**67.5**	**75.5**	**68**	**62**	**65**	(Not existing anymore)

P1 & P2 (Façade First Floor, Putney High street	Diffusion tube	N/A	N/A	128	**129**	**97**	**87**	**107**	**99**	(Not existing anymore)
P3 & P4 (Façade Second Floor, Putney High street)	Diffusion tube	N/A	N/A	**115**	**110**	**90**	**80**	**99**	98	(Not existing anymore)
P5 & P6 (Façade Third Floor, Putney High street)	Diffusion tube	N/A	N/A	**110**	**99**	**70**	**65**	**72**	**67**	(Not existing anymore)
P7, P8 & P9 (Kerbside Air Quality Monitoring Station, Putney High street)	Diffusion tube	N/A	N/A	161	**155**	**123**	**101**	**125**	**128**	(Not existing anymore)
P10 & P11 (Sign in centre of pavement, Putney High street)	Diffusion tube	N/A	N/A	150	**140**	**106**	**85**	**112**	**108**	In 2017, these two sites have been replaced by the site W24 (Putney Sign Mac Donald's)
2016 only										
CJ1 & CJ2 (Falcon road Bus Stop, Clapham Junction)	Diffusion tube	N/A	N/A	---	---	---	---	Data not representative of public exposure, or valid for review and assessment purposes	Data not representative of public exposure, or valid for review and assessment purposes	(Not existing anymore)

CJ3 & CJ4 (Falcon road, Clapham Junction)	Diffusion tube	N/A	N/A	---	---	---	---	**71**	**79**	(Not existing anymore)
CJ5 & CJ6 (Lavender Hill, Clapham Junction)	Diffusion tube	N/A	N/A	---	---	---	---	**67**	**78**	(Not existing anymore)
CJ7 & CJ8 (Beauchamp road, Clapham Junction)	Diffusion tube	N/A	N/A	---	---	---	---	**39**	**44**	(Not existing anymore)
CJ9 & CJ10 (St John's road, Clapham Junction)	Diffusion tube	N/A	N/A	---	---	---	---	**50**	**60**	(Not existing anymore)
CJ11 & CJ12 (St John's Hill, Clapham Junction)	Diffusion tube	N/A	N/A	---	---	---	---	**71**	**80**	(Not existing anymore)
From June 2015 to May 2016										
T1 & T2 (Blakenham road, Tooting)	Diffusion tube	N/A	N/A	---	---	---	---	40		(Not existing anymore)
T3, T4 & T5 (Air Quality Monitoring Station, Tooting)	Diffusion tube	N/A	N/A	---	---	---	---	**62**		(Not existing anymore)
T6 & T7 (Upper Tooting road, Tooting)	Diffusion tube	N/A	N/A	---	---	---	---	**62**		(Not existing anymore)
T8 & T9 (Fircroft road, Tooting)	Diffusion tube	N/A	N/A	---	---	---	---	30		(Not existing anymore)
T10 & T11 (Broadwater road, Tooting)	Diffusion tube	N/A	N/A	---	---	---	---	38		(Not existing anymore)

T12 & T13 (908 Garratt lane, Tooting)	Diffusion tube	N/A	N/A	---	---	---	---	**52**	(Not existing anymore)
T14 & T15 (Gambole road, Tooting)	Diffusion tube	N/A	N/A	---	---	---	---	36	(Not existing anymore)
T16 & T17 (Sellingcourt road, Tooting)	Diffusion tube	N/A	N/A	---	---	---	---	34	(Not existing anymore)
T18 & T19 (Tooting High street, Tooting)	Diffusion tube	N/A	N/A	---	---	---	---	**45**	(Not existing anymore)

Notes: Exceedance of the NO_2 annual mean AQO of 40 µg m^{-3} are shown in **bold**.
NO_2 annual means in excess of 60 µg m^{-3}, indicating a potential exceedance of the NO^2 hourly mean AQS objective are shown in bold and underlined.
[a] data capture for the monitoring period, in cases where monitoring was only carried out for part of the year
[b] data capture for the full calendar year (e.g. if monitoring was carried out for six months the maximum data capture for the full calendar year would be 50%)
[c] Means should be "annualised" in accordance with LLAQM Technical Guidance, if valid data capture is less than 75%

All data from the automatic monitoring stations has been fully ratified; data capture rates for all sites were above 75%. Therefore it has not been necessary to annualise any means in accordance with the procedure described in LAQM TG (16). Full diffusion tube details can be found in the Appendix. Concentrations measured at all of the automatic monitoring stations have decreased since 2016, and more generally over the 7 year period for which data is reported concentrations have reduced. The greatest decrease being measured at Putney High Street Facade which went down from 124µg m^{-3} in 2016 to 76µg m^{-3} in 2017. This is in contrast to the increase at the same location from 96µg m^{-3} in 2015 to 110µg m^{-3} from 2015 to 2016. The reduction is seen at all monitoring stations, i.e. kerbside, roadside and urban background classified sites. The annual mean objective was met at urban background locations and significant reductions were seen at the other monitoring stations between 2016 and 2017. The automatic monitoring station data is further described by Figure A. The red line indicates the Air Quality objective limit of 40 µg m-3

A nationally derived bias adjustment factor of 0.89 was used for all diffusion tube data as opposed to the local derived factor obtained from local co-location studies (0.96) as the data capture for the monthly monitoring periods equivalent to the diffusion tube exposure periods was not satisfactory for a number of periods and there was poor precision for a number of periods. Also that it was felt that a factor based on a number of studies was better suited to this study as the tubes are located at various locations across the borough and therefore we did not want the bias correction to be influenced by very local factors. Using a factor obtained from a number of studies minimises the effect of local factors and provides a more representative average factor that

can be applied to a wide range of different tube locations. The choice of bias correction factor chosen in further described in Appendix A (A.2). All the results can be found in Appendix B, Table K.

The minimum data capture rate was achieved at all nitrogen dioxide diffusion tube sites in 2017. The diffusion tube locations were reviewed in 2016 with monitoring ceasing in quite a number of the previous monitoring locations due to the air quality monitoring objectives being met or sufficient monitoring having been undertaken to establish a long-term trend. Monitoring by means of nitrogen dioxide diffusion tubes has continued at 5 existing locations. There were reduced concentrations at all locations between 2016 and 2017 and in fact the concentrations recorded in 2017 were the lowest of the reported data since 2011.

The diffusion tubes are exceeding the annual mean NO2 air quality objective (40 µg m-3) at busy roadside locations but meeting the meeting the objective at all urban background locations and at other less busy roadside locations. The 60 µgm-3 concentration is being exceeded at certain roadside locations in Putney High Street and Mitcham Road, Tooting. Both of the locations are within already identified air quality focus areas. The exceedance of the 60 µgm-3 concentration indicates that there is a risk of the hourly mean air quality objective being exceeded. The diffusion tube in West Hill, Wandsworth is close to this level, yielding an annual mean of 57 µgm-3. Once again this is in an air quality focus area and we are working with a member of the public to assess air quality in this area further, and identify possible actions to reduce exposure.

The diffusion tube in St Annes Hill has been classed as an Urban Background location due to it's distance from Wandsworth High Street (** metres). The site was chosen as it is outside of St Anne's Church of England Primary School. This site will be influenced by parking outside of the school and traffic entering Wandsworth High Street. This school was chosen as one to assess as part of a GLA schools audit, which Wandsworth took an active part in identifying the school and the audit process including Council Officers visiting the School with the auditors. The outcome of this and recommended actions will be announced by the GLA soon.

The diffusion tubes located near to other schools are currently meeting the annual mean nitrogen dioxide objective, where monitored i.e W25 – Roehampton Church School; W27 – 68-70 Sutherland Grove (Saint Cecilia's Church of England School); W33 -Lockington Road (St Mary's Roman Catholic School & Newton Prep School).

Figure A. **Annual mean NO_2 Ratified and Bias-adjusted Monitoring results (µg m^{-3})**

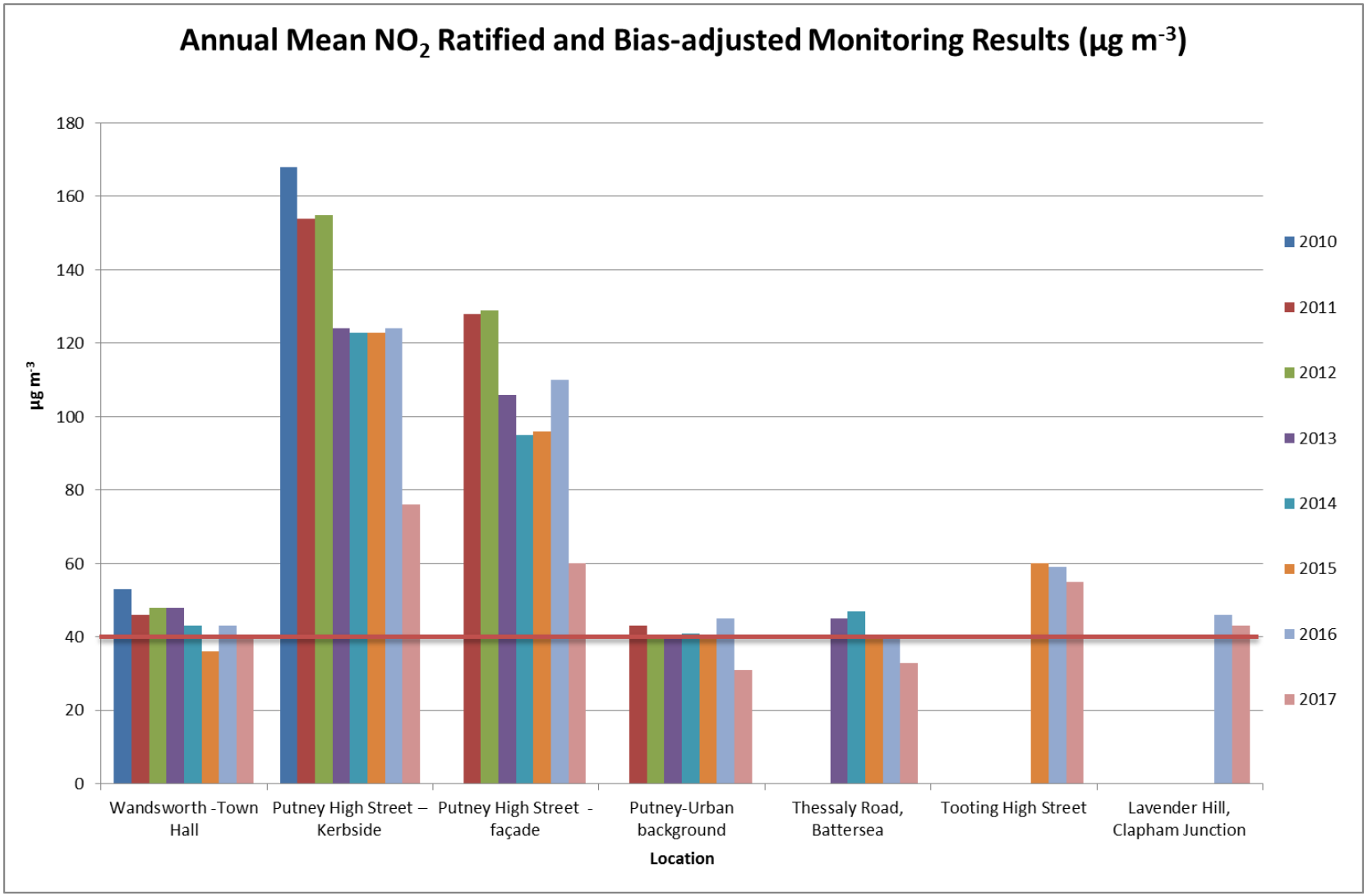


Table E. NO_2 Automatic Monitor Results: Comparison with 1-hour Mean Objective

Site ID	Valid data capture for monitoring period % [a]	Valid data capture 2017 % [b]	Number of Hourly Means > 200 µg m^{-3}						
			2011 [c]	2012 [c]	2013 [c]	2014 [c]	2015 [c]	2016 [c]	2017 [c]
WA2 (Wandsworth Town Hall)	N/A	97%	0 (143.3)	0	0	0 (124.4)	0 (108.1)	0	0
WA7 (Putney High Street; Denomination according to London Air website: Putney high street kerbside)	N/A	76%	**2768**	**2740**	**1580**	**1537**	**1443**	**1248**	**76 (247)**
WA8 (Putney High Street; Denomination according to London Air website: Putney high street façade roadside)	N/A	98%	**1662**	**1726**	**661**	**505**	**329**	**403**	9
WA9 (Felsham Road; Denomination according to London Air website: Putney urban background)	N/A	79%	10	0	2	0 (132.7)	0 (104)	**45**	7 (179)

Site ID	Valid data capture for monitoring period % [a]	Valid data capture 2017 % [b]	Number of Hourly Means > 200 µg m^{-3}						
			2011 [c]	2012 [c]	2013 [c]	2014 [c]	2015 [c]	2016 [c]	2017 [c]
WAA (Thessaly Road, Battersea; Denomination according to London Air website: Battersea)	N/A	81%	N/A	N/A	0	1	0 (113.6)	1	0 (98)
WAB (Tooting High Street)	N/A	86%	N/A	N/A	N/A	N/A	9	2	0
WAC (313 Lavender Hill; Denomination according to London Air website: Clapham Junction)	N/A	92%	N/A	N/A	N/A	N/A	N/A	**23**	0

Notes: Exceedance of the NO_2 short term AQO of 200 µg m^{-3} over the permitted 18 days per year are shown in **bold**.

[a] data capture for the monitoring period, in cases where monitoring was only carried out for part of the year

[b] data capture for the full calendar year (e.g. if monitoring was carried out for six months the maximum data capture for the full calendar year would be 50%)

[c] Means should be "annualised" in accordance with LLAQM Technical Guidance, if valid data capture is less than 75%

All data have been fully ratified for all the continuous monitoring stations. Exceedances of the hourly mean objective limit were observed at the Putney High Street kerbside air quality monitoring station but the number of exceedences was significantly less than in previous years. The air quality objective was met at the other air quality monitoring stations including the Putney High street façade air quality monitory station Putney Urban Background air quality monitoring station. The data capture for all monitoring stations was in excess of 75%. However, the data capture for WA7 (Putney High street Kerbside), WA9 (Putney High street Urban Background) and WAA (Thessaly Road, Battersea) was below 85% and therefore the 99.8th percentile was

calculated in accordance with LLAQM.TG(16). This figure is given in brackets. Where the 99.8th percentile is greater than 200 µg m-3 this means that if there had been 100% data capture then there would have been greater than 18 exceedences of 200 µg m-3 per calendar year. In all 3 cases where there was low data capture the 99.8th percentile was below 200 µg m-3 meaning that the air quality objective would be met.

The data capture at the façade air quality monitoring station in Putney High Street was 98% in 2017. It is very significant and pleasing that that the air quality objective was met at this air quality monitoring station (with 9 exceedences of 200 µg m-3). In comparison, in 2016 they were breached 403 times. In 2012 there were 1726 breaches – meaning that since then there has been a 99 per cent reduction in breaches.

The fall in pollution coincides with the introduction of cleaner buses along the street and the introduction last year of a Low Emission Bus Zone. More than 100 buses an hour use Putney High Street, but in 2012 a unique research project by Wandsworth Council exposed the bus fleet as responsible for over 80 per cent of nitrogen dioxide build ups. A Mayor's Air Quality Fund Project is being undertaken to improve air quality still further. This project has evaluated the actions that can be undertaken to improve air quality and consulted with relevant stakeholders. Funding has been identified and will now be used to make the improvements and to measure the benefits for air quality. The exceedences of the 1-hour mean objective are further illustrated by Figure B and Figure C. Figure B. compares all the air quality monitoring stations and Figure C. compares all monitoring stations other than those in Putney High Street. The red line indicates the Air Quality objective of no more than 18 exceedences of the 200 µg m-3.

Figure B. **NO_2 Automatic Monitor results: Comparison with 1-hour Mean Objective**

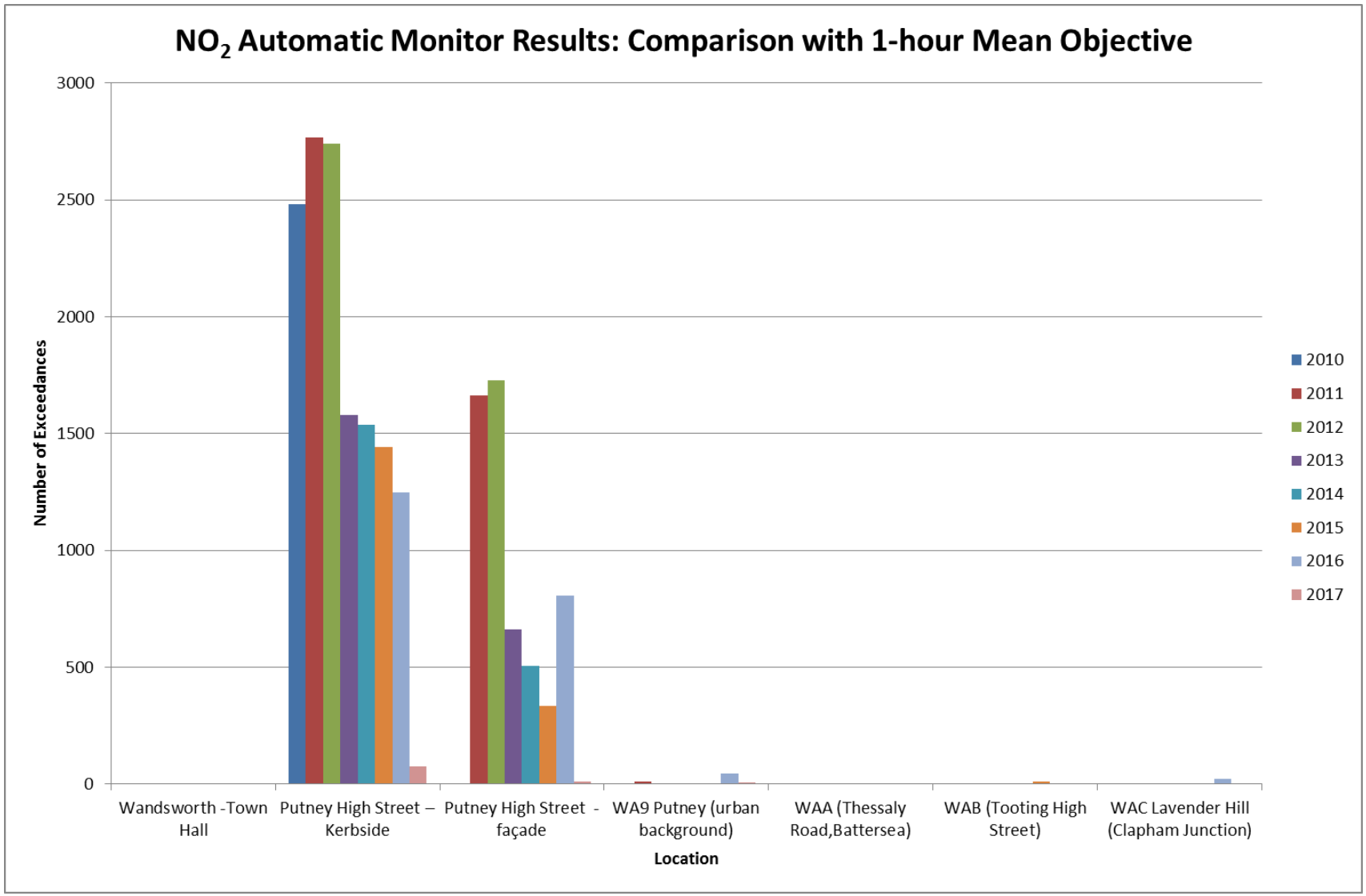


Figure C. NO2 Hourly mean automatic monitoring station results excluding Putney High Street Monitoring Stations

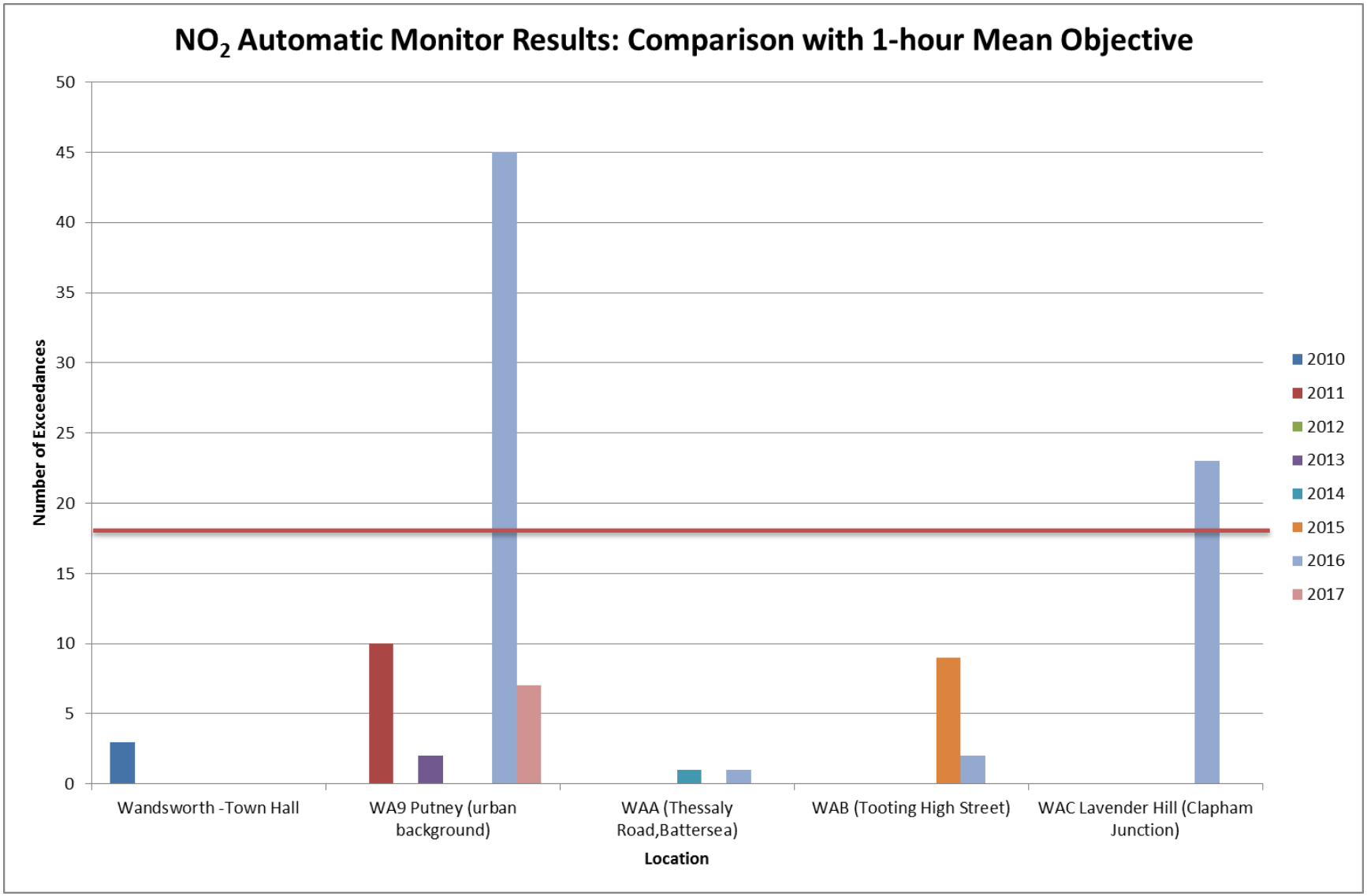


Table F. Annual Mean PM_{10} Automatic Monitoring Results (µg m^{-3})

Site ID	Valid data capture for monitoring period % [a]	Valid data capture 2017 % [b]	Annual Mean Concentration (µg m^{-3})						
			2011 [c]	2012 [c]	2013 [c]	2014 [c]	2015 [c]	2016 [c]	2017 [c]
WA7 (Putney High Street; Denomination according to London Air website: Putney high street kerbside)	N/A	87%	32	29	28	24	25	21	21
WA9 (Felsham Road; Denomination according to London Air website: Putney urban background)	N/A	98%	22	24	24	20	18	18	17
WAA (Thessaly Road; Denomination according to London Air website: Battersea)	N/A	99%	N/A	N/A	31	28	27	32	27
WAB (Tooting High Street)	N/A	93%	N/A	N/A	N/A	N/A	25	24	23

Site ID	Valid data capture for monitoring period % [a]	Valid data capture 2017 % [b]	Annual Mean Concentration (µg m^{-3})						
			2011 [c]	2012 [c]	2013 [c]	2014 [c]	2015 [c]	2016 [c]	2017 [c]
WAC (313 Lavender Hill; Denomination according to London Air website: Clapham Junction)	N/A	99%	N/A	N/A	N/A	N/A	N/A	18	20

Notes: Exceedance of the PM_{10} annual mean AQO of 40 µg m^{-3} are shown in **bold**.

[a] data capture for the monitoring period, in cases where monitoring was only carried out for part of the year

[b] data capture for the full calendar year (e.g. if monitoring was carried out for six months the maximum data capture for the full calendar year would be 50%)

[c] Means should be "annualised" in accordance with LLAQM Technical Guidance, if valid data capture is less than 75%

All data have been fully ratified for all the continuous monitoring stations. The data capture is in excess 75% for all monitoring stations and in fact the data for all monitoring stations is in excess of 85%.

The annual mean objective for PM_{10} continues to be met at all monitoring stations, however the measured concentrations at Putney High Street, Battersea and Tooting High Street still exceed the World Health organisation (WHO) limit of 20 µg m^{-3}. The data is further illustrated by Figure D.

Figure D **Annual Mean PM_{10} Automatic Monitoring Results (µg m^{-3})**

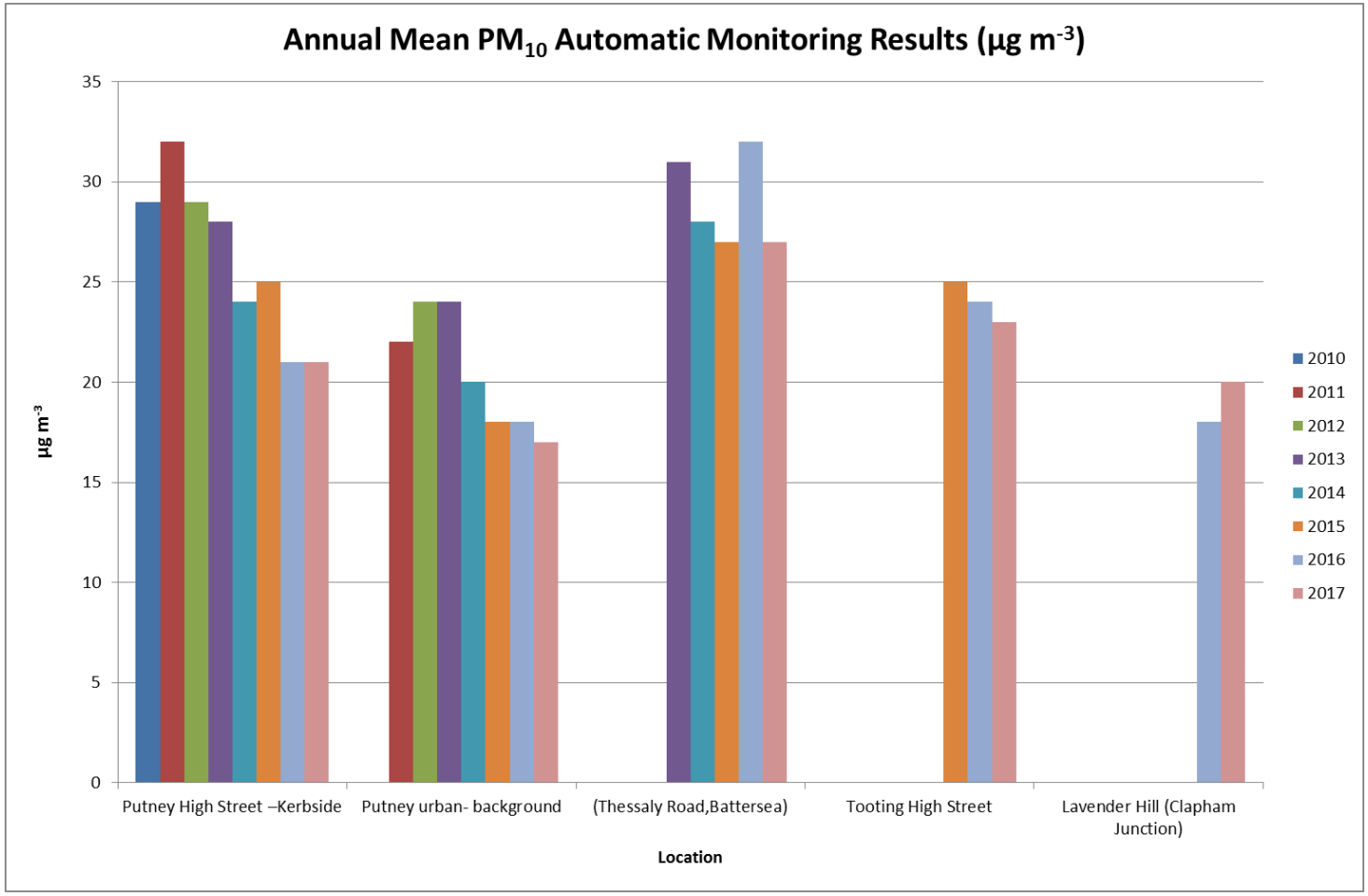


Table G. PM_{10} Automatic Monitor Results: Comparison with 24-Hour Mean Objective

Site ID	Valid data capture for monitoring period % [a]	Valid data capture 2017 % [b]	Number of Daily Means > 50 µg m^{-3}						
			2011 [c]	2012 [c]	2013 [c]	2014 [c]	2015 [c]	2016 [c]	2017 [c]
WA7 (Putney High Street; Denomination according to London Air website: Putney high street kerbside)	N/A	87%	29	10 (40.5)	5	5	10	4	2
WA9 (Felsham Road; Denomination according to London Air website: Putney urban background)	N/A	98%	13 (42.6)	11 (39)	3 (41.7)	2 (31)	4 (21.2)	6	5
WAA (Thessaly Road; Denomination according to London Air website: Battersea)	N/A	99%	N/A	N/A	**48**	28	16	**43**	16
WAB (Tooting High Street)	N/A	93%	N/A	N/A	N/A	N/A	10	11	11

Site ID	Valid data capture for monitoring period % [a]	Valid data capture 2017 % [b]	Number of Daily Means > 50 µg m^{-3}						
			2011 [c]	2012 [c]	2013 [c]	2014 [c]	2015 [c]	2016 [c]	2017 [c]
WAC (313 Lavender Hill; Denomination according to London Air website: Clapham Junction)	N/A	99%	N/A	N/A	N/A	N/A	N/A	1 (27.5)	4

Notes: Exceedance of the PM_{10} short term AQO of 50µg m^{-3} over the permitted 35 days per year or where the 90.4th percentile exceeds 50µg m^{-3} are shown in **bold**. Where the period of valid data is less than 85% of a full year, the 90.4th percentile is shown in brackets after the number of exceedances.

[a] data capture for the monitoring period, in cases where monitoring was only carried out for part of the year

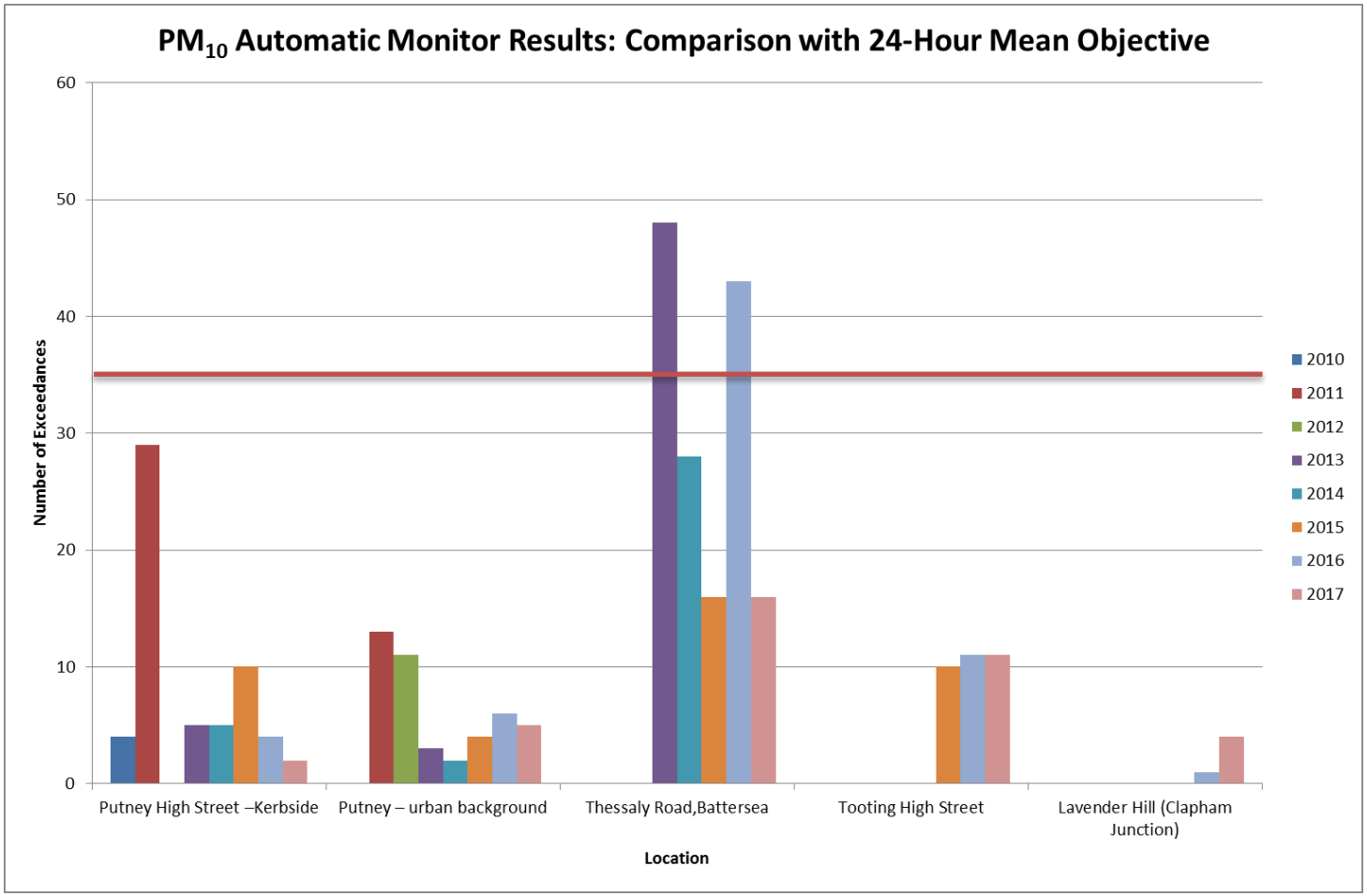
[b] data capture for the full calendar year (e.g. if monitoring was carried out for six months the maximum data capture for the full calendar year would be 50%)

[c] Means should be "annualised" in accordance with LLAQM Technical Guidance, if valid data capture is less than 75%

All data have been fully ratified for all the continuous monitoring stations. The data capture at all monitoring stations is in excess of 85% at all monitoring stations.

The 24-hour mean objective for PM_{10} of 50µg m^{-3} has not been exceeded more than 35 times per year in all our monitoring stations in 2017. Therefore, the 24-hour mean objective for PM_{10} has been met. The number of exceedences at the Thessaly Road, Battersea, air quality monitoring station reduced from 43 in 2016 (exceeding the objective) to 16 in 2017 (meeting the objective). This coincided with employing a construction site compliance officer to take actions to reduce emissions from construction such as track out from the sites. The officer makes regular visits to the sites to assess them and ensures that they monitor PM10 and take actions to reduce emissions in accordance with a Construction Environmental Management Plan. The officer regularly liaises with Tfl, developers, on-street services, engineering services, counter parts in the London Borough of Lambeth and the Planning enforcement officer. Progress on actions is regularly fed up to a strategic group –Air Quality Task Force. The trend data from 2010 to 2017 is further described by Figure E.

Figure E. **PM_{10} Automatic Monitor Results: Comparison with 24-Hour Mean Objective**



2. Action to Improve Air Quality

2.1 Air Quality Action Plan Progress

Table I provides a brief summary of London Borough of Wandsworth progress against the Air Quality Action Plan, showing progress made this year. New projects which commenced in 2017 are shown at the bottom of the table.

Table H. Delivery of Air Quality Action Plan Measures

Demonstrating the council's commitment to improving air quality					
Measure 1: Taking cost effective measures to minimise emissions of air pollution from the councils activities					
Ref	**Action**	**Implementation**	**Target date and Indicators**	**Progress**	**Resource & Impact**
1.1	Installation of low NO_x boilers on replacement	All boiler replacements in council buildings, maintained schools and council housing properties will continue to be with low NO_x boilers. Ultra Low NO_x boilers will be considered when opportunities arise.	On-going to report annually on %low and ultra-low NO_x boilers installed in public council buildings % low and ultra-low boilers installed in council housing properties.	All (100%) boilers now specified for housing stock are ultra-low NOx boilers (less than 40mg/kwh) and all (100%) boilers installed in council buildings are ultra low Nox. 95% of the operating systems installed in public buildings will be ultra low Nox boilers and remaining 5% are different systems that do not use boilers. The Council continues to use high specification low NOx boilers and evaluates cutting edge energy saving appliances and applications to suit our operations and projects.	**SECTION/DEPT. RESPONSIBLE** Housing, Carbon Reduction Group **COST/IMPACT** Low/Medium **FUNDING** Using existing resources
1.2	Installation of energy saving measures in council buildings	Through the carbon management plan. Governance is provided through the workings of the	Target to reduce carbon emissions by 20% by 2025 from a 2008/09	The Carbon Reduction Group (CRG) is committed to reducing Wandsworth Borough Council's carbon emission. The group continuously activates programs	**SECTION/DEPT. RESPONSIBLE** Housing, Carbon Reduction Group

		Carbon reduction Group.	baseline.	to reduce carbon impacts from our services and activities across the councils' operations. These strategies form part of a borough wide program to reduce the total annual carbon footprint which has been reduced by 32% since the 2008/9 baseline. In 2008-2009 carbon emissions within Council buildings were 43,505 tCO2e, while in 20017-2018 they were 28,934 tCO2e. Data is collated from a variety of sources by The Energy Management team and entered into inPhase which calculates the reduction. The Council have undertaken several strategies to reduce carbon emissions. These include installation of secondary glazing, low NOx boilers, solar panels, CHP units (in leisure centres), TRVs, a building management system (BMS), several comprehensive LED lighting replacement projects, replacement of poolside calorifiers. The Council is responsible for managing approx. 2750 accounts (a mixture of water, electricity and gas). If you would a list of the buildings I can arrange for you to have access to Concerto which holds data on every building owned by WBC. As part of the CRC, an audit is conducted annually of a sample of the Council buildings managed by the Energy Management Unit- this audit is either	**COST/IMPACT** Low/Medium **FUNDING** Using existing resources

				by staff from the EA, Scottish Environment Protection Agency (SEPA), Northern Ireland Environment Agency (NIEA), Natural Resources Wales (NRW) or our trained and approved contractors.	
1.3	Policy change to use petrol/LPG/CNG/hybrid/electric instead of diesel for council fleet vehicles and contracted vehicles.	Through the adoption of a procurement policy for all new vehicles whereby every vehicle purchased weighing less than 1.205 tonnes unladen gross vehicle weight does not operate on diesel. Diesel alternatives will also be considered for vehicles over this size.	% of vehicles less than 1.205 tonnes not using diesel (reported annually).	To use petrol/hybrid/electric vehicles for replacement of council fleet where possible. All vehicles purchased under 1.205 tonnes will not be diesel driven. To replace 50% of current vehicles with alternative fuel to diesel by October 2020.	**SECTION/DEPT. RESPONSIBLE** Fleet management **COST/IMPACT** Low/Medium **FUNDING** Using existing resources
1.4	Upgrading of vehicles to reduce emissions, retrofitting of vehicles with technology to reduce emissions where appropriate such as in-cab telematics.	Through the adoption of these measures in the fleet as appropriate. To be supplemented by eco-driver training.	% of vehicles that technology has been fitted to reduce emissions (reported annually) 10% target by December 2016 and 10% annual target on-going.	Replacement of existing commercial vehicles to be compliant with ULEZ (Ultra Low Emission Zone) by October 2021. Vehicle specification to include use of telematics. Driver training in place to include Safe and Green/ Safe Urban Driving. Procurement to include in future contracts where transport utilised environmental compliance.	**SECTION/DEPT. RESPONSIBLE** Fleet management **COST/IMPACT** Low/Medium **FUNDING** Using existing resources
Measure 2: To continue to implement and review the Council Service Transport Plan (CSTP) – promoting alternative modes of transport to the car, for both journeys to work and business related journeys.					
Ref	**Action**	**Implementation**	**Target date and Indicators**	**Progress**	**Resource & Impact**
2.1	To encourage active travel by staff (and/or discouraging travel by car).	Through the implementation of CSTP, including maintaining mileage rates for cycling.	% of staff using active travel (staff travel survey	2017: CSTP is no longer applicable under Shared Staffing Arrangement (SSA) between Richmond and	**SECTION/DEPT. RESPONSIBLE** Transport planning

			figures where available) % of staff travelling by car	Wandsworth Councils. New SSA staff travel activities launched in 2017 by Public Health including cycle and walking promotions. Cycle to Work Scheme offered across both boroughs.	**COST/IMPACT** Low/Low **FUNDING** Using existing resources
2.2	Reducing the need for staff to drive to work, if a car is needed for work.	Pool cars to be made available on replacement lower emission vehicles to be provided, e.g. hybrid vehicles/efficient petrol engines/electric.	Provision of number of pool cars and potential emissions improvements to be reported annually.	The Council has available 3 pool cars which are all petrol low emission vehicles, they can be used by staff and booked through the online form on the Loop.	**SECTION/DEPT. RESPONSIBLE** Fleet management **COST/IMPACT** Low/Low **FUNDING** Using existing resources
Measure 3: Ensuring air pollution is embedded in corporate policy					
Ref	**Action**	**Implementation**	**Target date and Indicators**	**Progress**	**Resource & Impact**
3.1	Policy review has been undertaken. This measure seeks to implement the findings of the review to ensure that air quality is embedded into corporate policies, maintaining commitment to air quality and cleaner borough status.	To implement the findings of the policy review, including incorporating the new Public Health Outcomes Framework (PHOF) indicator on air pollution into forward actions. The policy review will be re-assessed to ensure that the latest strategies are included, e.g. cycling strategy, Wandsworth strategy for older people.	01/04/2017	This work is on-going. Actions are being undertaken to ensure that air quality is taken in to account in each policy revision. A strategic air quality task group (attended by senior managers across the Council, the Director of Public Health and the cabinet member for the responsibility for the Environment) attempts to ensure that air quality is taken account in all aspects of the local authority's work. The Director for Public Health is the Clean Air Champion.	**SECTION/DEPT. RESPONSIBLE** Environmental Services **COST/IMPACT** Low/Medium **FUNDING** Using existing resources

3.2	Report Authors to consider the inclusion of relevant Air Quality impacts comments in committee reports.	To be introduced in departments with the support of Committee Services	From 01/04/16	Every committee report must include air quality comments and air quality implications. This was confirmed in April 2017.	**SECTION/DEPT. RESPONSIBLE** Committee Services **COST/IMPACT** Low/Medium **FUNDING** Using existing resources
3.3	Air quality to be considered as part of the procurement of goods, services and works.	Air quality to be considered as part of the procurement considerations for all new goods, services and works, including adding it to the procurement guide.	From 01/04/2016	Procurement policy updated to include a requirement for sustainable products to be sourced. This includes consideration of transport costs, pollution, energy savings, disposal, maintenance/lifecycle costs. The Council is committed to minimising its impact on the environment and continually improving its environmental performance. As part of this commitment the Council has adopted Environmental Ambition Statement, Environmental Action Plan and Environmental Purchasing Policy, which can be downloaded from www.wandsworth.gov.uk/sustainability In order to enable the Council to comply with relevant regulatory requirements, including without	**SECTION/DEPT. RESPONSIBLE** Procurement **COST/IMPACT** Low/Medium **FUNDING** Using existing resources

				limitation the Climate Change Act 2008, the Contractor shall: - Perform its obligations under the Sustainable Procurement Contract in accordance with the Council's Environmental Policy, including without limitation the conservation of energy, water, wood, paper and other resources, the reduction of waste and use of ozone depleting substances and the minimisation of greenhouse gases, volatile organic compounds and other substances damaging to health and the environment, preferring recycled or environmentally preferable products.	
3.4	Consolidation of goods and services.	A feasibility study on consolidation of goods and services is being considered with potential implementation dependent upon outcomes (Dependent on external funding becoming available).	To report on progress annually	The Low Emission Logistics project is a joint project between Wandsworth, Lambeth, Southwark and Croydon, Kensington & Chelsea, Hammersmith & Fulham, and Greenwich. It ended at the end of March 2018. This project is a feasibility study to improve the local air quality in specific areas within each partner borough. The areas have been selected due to their elevated levels of air pollution. Meetings with the local businesses were carried out in 2017 and info sheets were produced for the businesses. The main points discussed with businesses were how focused on choosing cleaner and greener vehicles, retiming deliveries to decrease traffic,	**SECTION/DEPT. RESPONSIBLE** Environmental Services, Procurement **COST/IMPACT** Medium/Medium **FUNDING** Funded through MAQF2 and LIP

				helping staff get active (cycling, walking), encouraging staff to use public transport to go to work, buying local instead of collecting goods further away to reduce deliveries and air emissions, joining forces with the neighbours by using the same suppliers as neighbouring businesses, to consolidate deliveries, to reduce the number of delivery vehicles on local streets and to reduce costs. The Council has prepared in 2017 two specific Air Quality Action Plans for Tooting Town centre and Clapham Junction respectively. Several actions will be implemented in 2018, such as promoting a car free day as a pilot project on a volunteer basis, an air quality guide for local residents and businesses, and a cargo bike scheme for local businesses.	
Communicating about Air Quality					
Measure 4: Production of a council air pollution strategy, bringing together internal and external communications					
Ref	**Action**	**Implementation**	**Target date and Indicators**	**Progress**	**Resource & Impact**
4.1	Establish role of air quality champion	To have a senior officer appointed to this role. Appointment and provision of training to community champions/air quality change makers in the local community	July 2016: establish role of air quality champion. January 2017: appointment of	The Director of Public Health is our lead Air Quality Champion; she has ensured that air quality improvement initiatives are considered by all departments. The Air Quality Team in 2017 encouraged people to sign up as air quality champions through various campaigns,	**SECTION/DEPT. RESPONSIBLE** Environmental Services **COST/IMPACT** Low/Low

			community champions	which included handing out leaflets and advertising on social media (Wandsworth Twitter, Institute of Air Quality Management online newsletter, Brightside, South Thames Colleges, etc.). Some new proactive air quality champions helped the Air Quality Team during the 2017-2018 anti-idling action campaign funded by the GLA, and other air quality initiatives.	**FUNDING** Funded through existing resources
4.2	Production and maintenance of and air quality communications strategy including an annual update and training for officers	To develop the programme by December 2016 and update it annually	From 01/12/2016	The council's Corporate Communications team have had a comprehensive Air Quality communications plan in place since 2016. This has included regular press releases sent to the local, regional and specialist press on measures such as anti-idling events, proactive work with schools, measures taken to improve air quality, such as lobbying for cleaner buses, and the promotion of cleaner transport options such as river transport, 20mph zones and electric cars. This has resulted in extensive media coverage. In addition there have been regular features in Brightside magazine, which goes to all borough homes, and Headstart magazine, which is distributed to families via schools. There has also be extensive coverage on the council social media feeds. The press releases and articles include a link	**SECTION/DEPT. RESPONSIBLE** Environmental Services, Communications **COST/IMPACT** Low/Medium **FUNDING** Funded through existing resources

				to the full Air Quality Action Plan so the public can find out more. https://www.airqualitynews.com/2018/01/22/wandsworth-seeks-expansion-low-emission-bus-routes/ https://www.airqualitynews.com/2017/10/06/wandsworth-extends-anti-idling-campaign/ https://www.airqualitynews.com/2018/02/05/nine-elms-site-sees-drop-pm10-limit-breaches/ http://www.wandsworthguardian.co.uk/news/15891153.Putney_High_Street_air_pollution_levels_fall__sharply___new_figures_reveal/ https://www.standard.co.uk/news/london/dirtier-diesel-buses-removed-from-putney-high-street-put-onto-new-route-near-pupils-a3501901.html http://www.wandsworthguardian.co.uk/news/15816260.Crackdown_on_bad_parking_and_idling_by_school_run_drivers/ https://www.cleanenergynews.co.uk/news/transport/wandsworth-council-to-roll-out-more-than-700-lamp-post-chargers https://cyclingindustry.news/air-quality-sees-drastic-improvement-alongside-ridelondon-route/	
4.3	Provision of air quality information	Maintaining websites/webpages of information on air quality and provision of updates as necessary. To avoid duplication where possible we	On-going	The review of webpages (for instance, Wandsworth Council webpage, or the Love Clean Air website which is part of the South London air quality network https://lovecleanair.org) are undertaken in line with the	**SECTION/DEPT. RESPONSIBLE** Environmental Services, Communications

		will signpost to information elsewhere, such as on the LondonAir and Love Clean Air websites		developments of new projects.	**COST/IMPACT** Low/Medium **FUNDING** Funded through existing resources
4.4	Undertaking of events to raise awareness of air quality and active travel	Undertaking of a number of events throughout the borough, including voluntary vehicle emissions testing and a programme to raise awareness of air quality amongst school children and their parents or guardians.	On-going and reported on annually	Raising awareness and empowering people to make positive changes is a key part of the Council's work on air pollution. In order to improve air quality and raise awareness in schools, Wandsworth Council has been undertaking air quality awareness raising activities with schools within the Borough. These activities are part of the Council's wide-ranging air quality improvement programme and they aim to increase awareness among children and parents of changes they can make to reduce air pollution, and inspire them to adopt more sustainable means of transport such as walking, cycling and taking less polluted routes. Examples of activities / initiatives are: - The anti-idling campaign: The Air Quality Team carried out four anti-idling events during the 2017-2018. The anti-idling campaign was funded by the GLA. Events were organised at primary schools together with an independently-owned sustainability agency to promote anti-idling	**SECTION/DEPT. RESPONSIBLE** Environmental Services, Communications **COST/IMPACT** Low/Medium **FUNDING** Funded through existing resources

				behaviour both to the students and to their parents outside the schools. Assemblies were prepared to explain air quality pollution, as well as idling issues, to the students. Air quality games were organised for students the same day. Outside the schools, parents and/or drivers were engaged to explain what idling is and how we can improve the local air quality by switching off car engines. Both students and parents were encouraged to use alternatives solutions to cars, such as public transport, cycling and walking. - The interactive air quality theatre show: eco-themed stage plays have been performed in front of children at primary schools to help teach youngsters about climate change, air pollution and the effect that transport choices can have on the environment. The theatrical shows were commissioned by Wandsworth Council. The performances included: global warming and how the transport choices affect the world; the impact of traffic, air pollution and congestion in your local area; why walking and cycling are almost always the best way to get around and how to do this safely.	

				- The Clean Air 4 Schools Project: a citizen science and engagement project organised by the London Sustainability Exchange (LSx), commissioned to increase understanding and awareness of air quality among primary school children in 16 Schools across 4 boroughs (Wandsworth, Merton, Richmond and Croydon). This project was delivered by an environmental educator with the support of the Environmental Protection Team at Wandsworth Council. The Clean Air 4 Schools project is an engaging and creative educational programme that educates children about the causes and effects of air pollution on health. This project encourages and inspires the pupils (and their parents) to be aware of the changes they can make to reduce their contribution and exposure to air pollution by adopting more sustainable means of transport such as walking, cycling and taking less polluted routes. The project includes citizen science investigations and activities, a bespoke travel plan recommendations developed for each school - Air quality provision of assemblies for	

				primary schools	
4.5	Provide GPs and pharmacists with information to provide to individuals with pre-existing conditions and those vulnerable due to age or lifestyle	Provision of airTEXT information for wider dissemination and to provide information on health effects of air pollution and actions being taken to reduce emissions and exposure through engagement with public health leads, CCG (Clinical Commissioning Group) and other health professionals – provision of talks etc.	On-going, reporting annually on number subscribed to service within borough	Articles about the airTEXT service have been published several times in the Council school circular system, together with articles to improve air quality and raise awareness in schools. Presentations previously provided to local groups. Working with health care professionals to deliver further information regarding airTEXT in coming year. AirTEXT service uses state-of-the-art technology to provide air pollution alerts when levels are likely to exceed moderate readings. These alerts are sent via text message, email and/or voicemail. AirTEXT alerts can help reduce the effects of pollution on the individual subscribing to it or someone they look after. Individuals can register for free alerts. Messages contain air quality alert, brief information about likely symptoms and also health advice. AirTEXT is an independent service, operated by Cambridge Environmental Research Consultants (CERC) Ltd in partnership with a Consortium made up of representatives from all the member local authorities, the GLA, Public Health England and the Environment Agency.	**SECTION/DEPT. RESPONSIBLE** Environmental Services **COST/IMPACT** Low/Medium **FUNDING** Funded through existing resources

4.6	Undertaking engagement with local businesses in hotspot area	Provision of information on local air quality issues and making them aware that they are part of the solution to improving air quality, including encouragement of active travel through delivery and servicing plans.	On-going, reporting on number of businesses engaged	The Low Emission Logistics project (as explained in Action 3.4) has given the opportunity of meeting with local businesses of the Tooting Town centre and Clapham Junction Town centre. Discussions with businesses focused on cleaner and greener vehicles, retiming of deliveries to decrease traffic, helping staff get active (cycling, walking), encouraging staff to use public transport to go to work, buying local instead of collecting goods further away to reduce deliveries and air emissions, joining forces with the neighbours by using the same suppliers as neighbouring businesses, to consolidate deliveries, to reduce the number of delivery vehicles on local streets and to reduce costs.	**SECTION/DEPT. RESPONSIBLE** Environmental Services **COST/IMPACT** Medium/Medium **FUNDING** Funded through existing resources
4.7	To undertake joint working with other organisation such as the GLA, TfL, health professionals such as Wandsworth CCG and other local authorities such as neighbouring authorities and others, for instance through externally funded joint projects	Through the attendance of air quality cluster group, London air quality steering group and partnership projects	Reporting annually on work undertaken	GLA anti-idling campaign: The Council joined the 2017-2018 anti-idling campaign funded by the GLA. As explained in Action 4.4, events were organised at primary schools to promote anti-idling behaviour both to the students and to their parents. Assemblies were prepared to explain air quality pollution, as well as idling issues. Air quality games were organised for students the same day. Outside the schools, parents and/or drivers were engaged to explain what idling is and how we can improve the local air quality by switching off car engines. Both students	**SECTION/DEPT. RESPONSIBLE** Environmental Services **COST/IMPACT** Low/High **FUNDING** Funded through existing resources

				and parents were encouraged to use alternative solutions to cars, such as public transport, cycling and walking. GLA school audits: In 2017, the Mayor of London wanted to take early action at 50 schools located in areas with some of the highest air pollution levels. The Mayor of London's School Air Quality Audits initiative has been commissioned to identify hard-hitting measures to minimise the impacts of toxic air on primary school children in some of the worse affected areas across London. This is both in terms of reducing the sources of harmful emissions, as well as reducing the exposure to these emissions. As part of the Mayor's plans to tackle air quality, WSP has been commissioned to identify hard-hitting measures to protect pupils' health from toxic air quality and examine new ways to lower emissions and exposure to pollution in and around primary schools. The GLA, in partnership with TfL, have appointed WSP as the preferred supplier to undertake school air quality audits in the majority of the London boroughs. The Mayor has stated that London is experiencing a 'public health emergency', and that he is committed to improving air quality, particularly for the most vulnerable Londoners. Over 400 primary schools are located in areas which exceed legal pollution limits. Primary school children are amongst the most	

				vulnerable groups, with 25% of primary schools in areas with dangerously high levels of air pollution. Road transport is a major contributor to ground based emissions, has a significant impact on air quality, accounting for around half of NOx emissions. The key objectives of the Mayor of London's School Air Quality Audits are: - Identify the sources of outdoor air quality and potential exposure by primary school children at the school and their surrounding catchment areas. - Identify, evaluate and recommend hard hitting measures both within and around the school that will help a Borough to reduce emissions or reduce primary school children's exposure to poor air quality at those sites, which could be delivered as part of the Boroughs' Local Implementation Plan (LIP) funding schemes. - Engage school communities to educate stakeholders about the impacts of air pollution and contribute towards activities, initiatives and policies that the primary school community could implement. - Engage eligible London Boroughs and other relevant stakeholders to inform the feasibility of the proposed recommendations. - Provide recommendations for the Boroughs consideration and future implementation In 2017, three primary schools were selected and audited in Wandsworth.	

				Present at the audits were the Wandsworth Air Quality Team, Wandsworth Transport Team, WSP, and representatives of the schools. Tfl – Putney high street improvement: In February 2018 the first phase of the Putney improvement plan was approved. The plan will see a radical revamp of Putney High Street and it was drawn up following extensive consultation with local people, groups, and TFl collaboartion. The first phase costing up to £640,000 will include: - Sections of road-narrowing scheme in part of the High Street to enable pavements to be widened - Improving the junctions of Putney Bridge Road and Lacy Road with the High Street - Installing a piece of public art or 'green wall' on the cinema façade - Installing a trial 'Copenhagen Crossing' to make the busy High Street easier to cross. If this is successful, more could be installed - Removing unnecessary guardrails - Planting trees and installing planters - Reducing the speed limit to 20mph - A trial cycle lane contra-flow - Improving cycle parking provision - These include further improvements to the cycle network, exploring opportunities for relocating the taxi rank, installing more public art, creating more public open spaces and enhancing bus	

				stops. - Etc. Tfl Tooting centre developing scheme: The Council is developing a scheme with Transport for London (TfL) to create a safer and rejuvenated town centre for pedestrians in Tooting. The scheme will cost about £4.5 million and will add to the vitality of the town centre. The aims of this project are to: 1. Reduce the number of people injured in Tooting town centre using innovative and creative means. 2. Encourage more people to walk, cycle and use public transport in and around the area. 3. Improve the overall look and feel of this bustling town centre. Proposals being explored include: - Introducing a 20mph speed limit on the A24 Upper Tooting Road – Tooting High Street and Mitcham Road. - Widened, raised crossing points where people want to cross - New style junction treatments to reduce the speed of turning vehicles and reduce the dominance of motorised traffic - Improving the area for buses and cycles - Improved crossing points at the Tooting Broadway junction with enlarged pedestrian footways Timeline: - Public Consultation: Late spring 2018 - Detailed Design: Summer 2018 to March	

				2019 - Construction: April 2019 for a period of up to 12 months Local councillors have been informed of the proposals and will continue to be updated throughout the project. The Council will also be developing a series of events and campaigns designed to promote the area as a great place to visit and spend time.	
Reducing emissions and exposure					
Measure 5:Call for actions from Mayor of London, TfL and national government to take actions to improve air quality					
Ref	**Action**	**Implementation**	**Target date and Indicators**	**Progress**	**Resource & Impact**
5.1	Campaign for the Mayor and TfL for cleaner buses to operate on routes throughout the borough using local monitoring data	Through portfolio holder /elected members and communications team (working in partnership with GLA/TfL to deliver air quality benefits wherever possible)	On-going reported on annually	The Council continues to collate monitoring data in hotspot locations to provide evidence for having cleaner buses across the borough. Automatic monitoring of NO2 and PM10 is being undertaken in 4 focus areas and NO2 diffusion tubes are installed in the newer focus area of York Road as of January 2018 to evaluate as to whether further more accurate real-time monitoring is required. After having successfully campaigned for cleaner buses in Putney High street, the Council will continue to campaign to the Mayor and TfL for cleaner buses in the five Air Quality Focus areas heavily affected by air pollution. Communication with Tfl is ongoing. This was raised as part of the consultation responses on the ULEZ	**SECTION/DEPT. RESPONSIBLE** Environmental Services/Members/ Communications **COST/IMPACT** Low/Medium **FUNDING** Funded through existing resources
5.2	Campaign to the Mayor and TfL for cleaner taxis to operate on borough roads and stricter controls to reduce emissions	Through portfolio holder/elected members and communications team. Support development of ULEZ	On-going reported on annually	The Council supports the Mayor of London's consultation Ultra Low Emission Zone (ULEZ) and Low Emission Zone (LEZ), which concerns two	**SECTION/DEPT. RESPONSIBLE** Environmental Services/Members/

	from vehicles – Low Emission Zone (LEZ), Ultra Low emission Zone (ULEZ), policies to reduce diesel vehicle use	and be involved in engagement on future changes/tightening/expansion of ULEZ, assessing the benefits for air quality within the borough.		proposals: - Tightening the standards of the existing London-wide Low Emission Zone from 2020, which affects heavy vehicles – buses, coaches and HGVs and other heavy specialist vehicles - Expanding the ULEZ for light vehicles (cars, vans and motorcycles) from central London to inner London up to, but not including the North and South Circular roads in 2021 so that all vehicles in this area are subject to emissions standards The closing date for consultation responses was February 2018. A Council response was submitted. The proposals will have implications for our residents, businesses, vehicle fleet and staff. Wandsworth Council supports the Mayor's intentions to take action to improve air quality in London.	Communications **COST/IMPACT** Low/High **FUNDING** Funded through existing resources
5.3	Campaign to national government towards a "non-diesel economy"	Through portfolio holder/elected members and communications team	On-going reported on annually	We are undertaking this process. The Council responded to the Defra consultation on their revised plan to reduce nitrogen dioxide around rounds in the shortest time possible. The document detailed high NO2 emissions from diesel vehicles. Therefore action at a national level to road tax from diesel vehicles is essential. We called	**SECTION/DEPT. RESPONSIBLE** Environmental Services/Members/ Communications **COST/IMPACT** Low/High

				for the road tax policy and diesel scrappage policy (perhaps targeting low income families, charities and small businesses, and older taxis) to be implemented as soon as possible to support the actions that are being undertaken in Wandsworth and across London as a whole.	**FUNDING** Funded through existing resources
Measure 6: Encouraging walking and cycling and the use of public transport, and discouraging people driving to stations					
Ref	**Action**	**Implementation**	**Target date and Indicators**	**Progress**	**Resource & Impact**
6.1	Use of transport and planning policies to encourage walking and cycling	Travel plans for new developments, voluntary plans, and travel awareness campaigns, promotion of the availability and use of the cycle hire scheme in the borough and policies and action under the Local Implementation Plan (LIP), implementing the Cycling Strategy (2015), increase awareness of availability of cycle training courses.	On-going reported on annually cycling and walking schemes and promotion including promotion of route planning to minimise exposure to pollution (e.g. walkit.com) and cycle hire scheme (demonstrated by London Travel demand Survey data)	Activity in 2017 included: 20 travel plans secured through the planning process; a total of 943,000 cycle hire docks and hires were made in the borough in 2017, up from 863,000 in 2016 (9.3% increase). Cycle strategy actions included implementation of schemes on the first two Quietway cycle routes in the borough. 1,123 children and 121 adults received cycle training in 2017.	**SECTION/DEPT. RESPONSIBLE** Transport Planning **COST/IMPACT** Low/Medium **FUNDING** Funded through existing resources
6.2	Promote the use of public transport	Working with public transport operators (TfL buses, bus operators, London Underground, London	On-going reported on annually	The Council continues to lobby for: - A second entrance at Wandsworth Town station, which has been acknowledged;	**SECTION/DEPT. RESPONSIBLE** Transport Planning

		Overground, Network Rail and railway operators, and sub-regional partnerships) to facilitate improvements to both the quantity and quality of public transport		- The relief of overcrowding on local trains and stations through engagement with Network Rail and the Department for Transport (DfT). This includes the South Western 2018 Timetable changes throughout 2018; - A second entrance at Putney station from Oxford Road, which has been acknowledged; - An Access for All Scheme at Barnes Station, to serve Wandsworth and Richmond. The Council has continued to engage proactively with Network Rail and DfT on the Crossrail 2 project and proposals for improved rail access to Heathrow from the south. The Council is working with TfL and Network Rail to develop plans for major capacity improvements to Battersea Park Station and Nine Elms / Embassy Gardens area. This also offers potential improvements to Queenstown Road Station, including a second entrance with lifts. Tunnelling has commenced for the extension of the Northern Line to Battersea Power Station, with the two new stations due to be operational by	**COST/IMPACT** Low/Medium **FUNDING** Funded through existing resources

				2020. The Council is also implementing a Legible London wayfinding scheme in the Battersea Park/Nine Elms area to improve access for pedestrians to key local attractions and open up the river frontage, as well as signpost them to public transport (including TfL River services) and the cycle hire scheme. The Council continues to assist bus operators and TfL, and has met TfL's target for 95% of bus stops fully accessible. We have negotiated funding from local developments to secure improvements to bus services and infrastructure, including increased service frequencies, alterations to school services and the provision of additional "Countdown" displays at bus stops at key locations. Plans are being developed with TfL for improvements in the bus network in the Riverside Quarter, Battersea Power Station, and Roehampton areas to provide greater access to and from the south.	
6.3	Promote sustainable travel to schools – working with schools to implement packages of measures	Through the school travel strategy and school travel plans. In addition to the target more information on the schools that retain/maintain their	The number of schools that have improved their status in TfL's school travel plan accreditation	The Council continues to offer support to all schools in the borough to develop and implement school travel plans. As from September 2017, 9 schools hold gold accreditation, 12 hold silver accreditation and 13 hold bronze	**SECTION/DEPT. RESPONSIBLE** Transport Planning **COST/IMPACT** Low/Medium

		accreditation will be provided annually	scheme. Target 5 schools each year	accreditation. To achieve gold accreditation requires a modal shift away from car use of at least 6% from the school's baseline survey.	**FUNDING** Funded through existing resources
6.4	Use of on-street parking controls to reduce the number of people driving to stations in the borough to continue their journey by rail into Central London	Maintenance and review of controlled parking zones (CPZs) that are in operation within the borough	Policy reviewed annually, percentage of borough roads where CPZs in operation	Approximately 77% percent of borough roads are covered by a CPZ. Requests continue to be received from residents to have a Controlled Parking Zone introduced in their road to alleviate parking problems as well as from those who live in roads where a CPZ is already in operation and would like the scheme amended in some way. A summary of the activity this year is below: - Seymour Road: A consultation was held to extend hours but no changes were made; - Rowditch Lane area: A CPZ has been approved for the area; - Smallwood Road Estates: The Tooting Broadway CPZ (E1) is to be extended into the highways sections; - Medfield Road/Ponsonby Road and Treville St: The Roehampton CPZ is to be extended into these roads; - Dover House Estate Area: A consultation was carried out to ask for views on the possibility of introducing a CPZ; - Battersea B1: A consultation was carried out to ask for views on the	**SECTION/DEPT. RESPONSIBLE** Transport Planning **COST/IMPACT** Low/Medium **FUNDING** Funded through existing resources

				possibility of extending the CPZ operational times/days; - Wandsworth Common D2/D3: A consultation was carried out to ask for views on the possibility of extending the CPZ operational times/days; Girdwood Road: Approval has been obtained to reduce the operational hours from all-day to one-hour.	
6.5	Facilitate a higher proportion of travel by sustainable transport modes including cycling and walking	Where possible to redesign and maintain road layouts for the benefit of cyclists and pedestrians when a road improvement takes place	On-going reported on annually	Cyclist and pedestrian safety is considered in all road improvements works. Evidence of this success can be seen in the change in travel behaviour. Mode share by car (all trips) has fallen to 31% (2013/14-2015/16 – latest available data) from 36% (2006/07-2008/09 – Local Implementation Plan baseline year). Combined walking and cycling mode share over the same period has risen from 34% to 38% of trips. (Data is from the London Travel Demand Survey published by TfL).	**SECTION/DEPT. RESPONSIBLE** Transport Planning **COST/IMPACT** Medium/Medium **FUNDING** Funded through existing resources
6.6	Promote and enable car clubs as an alternative to private car ownership, via; - provision of on–street car club parking spaces - planning obligations for car club parking/membership in new residential developments	Via car club contracts with four operators to July 2018; and via on-going planning obligations required with planning consents	LIP target to increase car club membership by an average of 150 members per month (1,800 per year)	Four planning applications approved with requirement for a total of 4 car club spaces. There were 200 fixed-bay car club vehicles in Wandsworth at the end of 2017 (140 on-street and 60 off-street), with another 130 cars available (on average) via a new free-floating car club service Zipcar Flex, launched in June. Total car club membership rose from13,500 at the end of 2016 to 16,400 at the end of 2017, exceeding	**SECTION/DEPT. RESPONSIBLE** Transport Planning **COST/IMPACT** Low/Medium **FUNDING** Funded through existing resources

				the LIP target of 1,800 new members per year.	
6.7	Introduction of 20mph speed limit areas on borough residential roads	To be implemented in all borough residential roads	100% to be completed by 31/03/2017	The Council completed the roll out of 20mph across the Borough in June 2017. The Council is presently undertaking 'after' surveys looking primarily at changes in speeds and at the end of this year will report back to OSC with this data as well as an update on accident levels.	**SECTION/DEPT. RESPONSIBLE** Transport Planning **COST/IMPACT** Low/Medium **FUNDING** Funded through existing resources
Measure 7: To encourage the uptake of low emission vehicles					
Ref	**Action**	**Implementation**	**Target date and Indicators**	**Progress**	**Resource & Impact**
7.1	Provision of green infrastructure/electric vehicle charging points	Provision of infrastructure. Also to provide details of 7kW/fast charges installed, in addition to target	Target to install 45 electric vehicle charging points by April 2019, 15 per year (working with Source London to achieve on-going	I In 2017 there were a total of 99 Electric Vehicle Charging Points (EVCPs) installed across 33 sites provided by Source London. There are a further 120 EVCPS due to be installed at various locations across the borough and a programme to decide where the location of street column charging is under way. Wandsworth has already begun installing charging equipment to just under 630 lamposts in the borough. This means that Wandsworth is on course to deliver nearly 850 on-street charging points in total. These will come in the form of: • The installation of 380 charging sockets in every available lampost within two pilot zones – in Putney (149)	**SECTION/DEPT. RESPONSIBLE** Environmental Services **COST/IMPACT** Low/Medium **FUNDING** Funded through existing resources

				and Battersea (231) – to gauge local demand and encourage more people to go electric. The results from these trial schemes could see this key infrastructure extended to other areas. • Outside of these two pilot zones another 245 lamposts are having EV sockets fitted to them in parts of the borough where local people have already "gone electric". • Source London is providing another 120 charging points at various locations across the borough, adding to the 99 already in use at 33 separate places in Wandsworth. For those who don't need to own a vehicle but want to enjoy occasional eco-friendly motoring, a new e-car club is being established in Wandsworth – offering a convenient and eco-friendly alternative to car ownership, providing electric vehicles to hire by the hour, day or week. The installation of so much charging infrastructure is the first phase of a comprehensive £3m council initiative designed to encourage much greater take-up of this greener and cleaner form of transport, and also to support those who have already made the switch.	
7.2	Maintain provision of information on cleaner fuels,	Provision of information on council website	On-going review and update as	The Council webpage http://www.wandsworth.gov.uk/info/2	**SECTION/DEPT. RESPONSIBLE**

	technologies and vehicles		necessary	00485/air_quality/1586/vehicle_fumes provides information related to cleaner fuels and vehicles. It is still under review.	Environmental Services **COST/IMPACT** Low/High **FUNDING** Funded through existing resources
7.3	Review of differential car parking charges based on emissions, ULEZ criteria, with diesel vehicles paying more	To consider implementing the charges and their potential benefits if considered positive, introduce	To implement by April 2017 depending upon outcome of initial investigations	As yet a substantial review of car parking charges has not been undertaken. The last review of parking charges undertaken and approved in October 2016 agreed that most charges increase to take account of increased costs and reflect policies aimed at reducing and managing traffic levels, promoting the use of sustainable transport and ensuring a regular turnover of vehicles in places where there is high demand. The potential use of differential parking charges will be kept under review. We are watching with interest the schemes being implemented by other local authorities and will look to evaluate their potential benefits for air quality.	**SECTION/DEPT. RESPONSIBLE** Environmental Services **COST/IMPACT** Medium/Medium **FUNDING** Funded through existing resources
Measure 8: Freight/delivery actions					
Ref	**Action**	**Implementation**	**Target date and Indicators**	**Progress**	**Resource & Impact**
8.1	Enabling more delivery and servicing to be made outside peak hours	Through business engagement in hot spots/NO_2 focus areas	On-going reported on annually	After loading restrictions in Putney High Street, the Council is working to have reduced traffic congestions in	**SECTION/DEPT. RESPONSIBLE** Environmental

				other areas, such as Tooting High Street. This will help traffic to flow freely and to reduce air pollutant concentrations. Surveys of businesses have been undertaken in Tooting and Putney and Action Plans have been produced and are being implemented to reduce emissions in each area.	Services **COST/IMPACT** Medium/High **FUNDING** Funded through existing resources
8.2	Better management/prohibition of deliveries at "hotspots" such as Putney High Street	Through business engagement in hot spot/NO_2 focus areas	On-going reported on annually	Wandsworth continues to enforce the restrictions introduced in Putney High street to prevent delivery drivers from causing congestion by stopping on the High Street during the day. As explained in Action 3.4, the Council is trying to achieve similar results in other 'hotspots' areas such as Clapham Junction and Tooting High Street.	**SECTION/DEPT. RESPONSIBLE** Environmental Services **COST/IMPACT** Medium/High **FUNDING** Funded through existing resources
8.3	To investigate consolidation of goods and services in hot spot areas, exploring options such as joint procurement and sharing of services supplied to businesses and low emission last mile delivery	Through engagement with businesses, looking at wider impacts such as home deliveries, working with others to provide drop off lockers and TfL freight unit (Putney High Street potentially to be first study area). Dependent upon external funding, linked to action 3.3	To provide update on servicing and deliveries actions undertaken April 2017; to provide further updates on this action and potential for consolidation – April 2018 and on-going	As explained in Action 3.4, the Low Emission Logistics project is a feasibility study to improve the local air quality in specific areas within the borough. The areas have been selected due to their elevated levels of air pollution. Meetings with the local businesses were carried out in 2017 and info sheets were produced for the businesses. The main points discussed with businesses were how focused on choosing cleaner and greener vehicles, retiming deliveries to decrease traffic, helping staff get active (cycling,	**SECTION/DEPT. RESPONSIBLE** Environmental Services **COST/IMPACT** Medium/Medium **FUNDING** Funded through MAQF2

				walking), encouraging staff to use public transport to go to work, buying local instead of collecting goods further away to reduce deliveries and air emissions, joining forces with the neighbours by using the same suppliers as neighbouring businesses, to consolidate deliveries, to reduce the number of delivery vehicles on local streets and to reduce costs. The Council has prepared in 2017 two specific Air Quality Action Plans for Tooting Town centre and Clapham Junction respectively. Several actions will be implemented in 2018, such as promoting a car free day as a pilot project on a volunteer basis, an air quality guide for local residents and businesses, and a cargo bike scheme for local businesses. There are no current plans for an actual consolidation centre. This would only be taken forward if it was viable and had tangible benefits for air quality.	
Development and buildings					
Measure 9: Ensuring that air quality and in particular reducing emissions is included in planning policy and implemented					
Ref	**Action**	**Implementation**	**Target date and Indicators**	**Progress**	**Resource & Impact**
9.1	Encouraging energy efficient measures and energy efficient design in new buildings	Implementation of Part L of the Building Regulations in relation to energy efficiency measures	On-going, reporting on annually	With regard to Major Developments, in 2017 the Council received 14 Energy Assessments reports of a total of 17 Major Residential Developments (that	**SECTION/DEPT. RESPONSIBLE** Building Control

				means that the 82% of Major Residential Developments submitted an Energy Assessments report). Furthermore, the Council received other 14 Energy Assessments reports of a total of 23 Major Non-Residential Developments (that means that the 61% of Major Non-Residential Developments submitted an Energy Assessments report). With regard to Minor Developments, the Council does not request any Energy Assessments reports, as the guidance states that Energy Assessments are 'aimed specifically at Major Developments (of 10 or more (gross) residential units or non-residential development over 1000m²)'. Part L of the Building Regulations is implemented as required.	**COST/IMPACT** Low/Medium **FUNDING** Funded through existing resources
9.2	Boilers installed as part of development must have low NO_x ratings in accordance with the standards set out in the Mayor of London's sustainable design and construction supplementary planning guidance	To implement in line with the London Plan Mayor of London's sustainable design and construction supplementary planning guidance	On-going, reporting on annually	All (100%) boilers now specified for housing stock are ultra-low NOx boilers (less than 40mg/kwh) and all (100%) boilers installed in council buildings are ultra low Nox. 95% of the operating systems installed in public buildings will be ultra low Nox boilers and remaining 5% are different systems that do not use boilers. The Council continues to use high specification low NOx boilers	**SECTION/DEPT. RESPONSIBLE** Planning/ Environmental Services **COST/IMPACT** Low/Medium **FUNDING** Funded through existing resources

				and evaluates cutting edge energy saving appliances and applications to suit our operations and projects. The Council requires Energy Assessments reports for Major Developments only (both Residential and Non-Residential), however the reports not necessarily include details about boilers to be installed. With regard to Major Developments, in 2017 the Council received 14 Energy Assessments reports of a total of 17 Major Residential Developments (that means that the 82% of Major Residential Developments submitted an Energy Assessments report). Furthermore, the Council received other 14 Energy Assessments reports of a total of 23 Major Non-Residential Developments (that means that the 61% of Major Non-Residential Developments submitted an Energy Assessments report).	
9.3	Air quality assessments for major developments and developments where exposure is likely or a creation of	Through planning policy – core strategy and associated documents – core strategy and associated documents	As planning documents are revised, report on annually.	In 2017, within the Environmental Protection Team, officers review planning applications in terms of air quality for both minor and major	**SECTION/DEPT. RESPONSIBLE** Planning/ Environmental

	significant new emissions			developments. As defined in Part 1 of The Town and Country Planning (Development Management Procedure) (England) Order 2015, major developments are development of dwellings where 10 or more dwellings are to be provided, or the site area is 0.5 hectares or more; Development of other uses, where the floor space is 1,000sq metres or more, or the site area is 1 hectare or more. The Air Quality Team reviews air quality assessments, air quality neutral reports, dust management plans, construction environmental management plans, schemes for monitoring dust on construction sites, method statements for the reduction of emissions from construction vehicles in compliance with the London Low Emission Zone, schemes of air pollution mitigation measures to protect future occupiers from air pollution exposure while living in their properties, etc.	Services **COST/IMPACT** Low/Medium **FUNDING** Funded through existing resources
9.4	Ensuring that new major developments are air quality neutral in line with the London Plan and Mayor of London's sustainable design and construction supplementary planning guidance	Through planning policy – core strategy and associated documents	As planning documents are revised, report on annually.	An Air Quality Neutral Assessment is mandatory for all new major developments (taken to be 10 or more dwellings or 1,000sq metres or more floor space as defined in Part 1 of The Town and Country Planning - Development Management Procedure - England Order 2015) in line with the London Plan and Mayor of London's	**SECTION/DEPT. RESPONSIBLE** Planning/ Environmental Services **COST/IMPACT** Low/Medium

				Sustainable Design and Construction Supplementary Planning Guidance. The Air Quality Team reviews air quality neutral reports to determine whether major developments meet the benchmark or if they require to include additional mitigations. An air quality neutral report has to calculate the building and transport emissions and compare these with a benchmark for development. The calculations cover the emissions of nitrogen oxides and PM_{10}. There are four cases: 1. A site at initial application doesn't meet the benchmarks. During the application changes are made to either the energy system or the transport arrangements to bring the development in line with the benchmarks. This development now meets the benchmarks. 2. A site doesn't meet the benchmarks and offers other on-site measures to compensate (which should normally be secured by condition or S106). This site does not meet the AQ neutral requirements but is allowed due to the other mitigations. 3. A site doesn't meet the	**FUNDING** Funded through existing resources

				benchmarks and offers off-site measures or payment to compensate (which should normally be secured by condition or S106). This site does not meet the AQ neutral requirements but is allowed due to the other mitigations. 4. A site is refused because it does not meet the AQ neutral benchmarks and either no mitigation is offered or the mitigation is not considered sufficient by the planning authority.	
Measure 10: Creation of a design guide of best practice on reducing emissions and exposure for developments and streets					
Ref	**Action**	**Implementation**	**Target date and Indicators**	**Progress**	**Resource & Impact**
10	Develop a design guide of best practice. This project aims to take the well-established science of how air pollution is distributed in street canyons and translate it into design guidance that design engineers/planners can use in language that is familiar to them	Subject to funding, engaging of a consultant to undertake this piece of work.	April 2017	No funding available to progress this action. Action will progress if and when funding becomes available.	**SECTION/DEPT. RESPONSIBLE** Planning/ Environmental Services **COST/IMPACT** Low/Medium **FUNDING** Funded through existing resources
Measure 11: Proactive work to reduce PM_{10} emissions from new developments					
11	To undertake a project with a developer to assess the effectiveness of measures designed to reduce emissions	To work with King's College London and other local authorities to implement the project to help reduce fine	To report on progress annually	We are working with Kings College London in partnership with a consortium of other London boroughs on the London Low Emission	**SECTION/DEPT. RESPONSIBLE** Planning/ Environmental

	from major construction sites and to develop a construction hub to disseminate best practice	particle emissions from construction sites. To include raising awareness of the Non Road Mobile Machinery (NRMM) regulations		Construction Partnership (LLECP). A construction site compliance officer (CSCO) has been appointed to proactively manage environmental impacts from major development. The priority area for compliance is currently the Nine Elms development in Vauxhall. Air quality monitoring data collated by the developer is analysed to check for exceedances above the agreed limit. Further analysis is conducted to observe the effect the development is having on air quality concentrations in the wider vicinity and then compared with other locations across London. The CSCO also advises on the requirement to comply with NRMM regulations despite many of the developments having been granted planning permission prior to the regulations coming into force. Officers are also employed to ensure NRMM compliance at major developments across South London; this project is conducted in partnership with neighbouring boroughs. Kings College and the CSCO have been working with developers within the Nine Elms development in Vauxhall in order to trial new technology designed to reduce pollution and exposure to pollution from sites. The data obtained	Services **COST/IMPACT** Medium/High **FUNDING** Funded through existing resources

				from these trials is intended to be developed into a case study and shared with the LLECP and the wider construction industry.	
Regulation and Monitoring					
Measure 12: Actions to reduce emissions by enforcement of regulatory powers					
Ref	**Action**	**Implementation**	**Target date and Indicators**	**Progress**	**Resource & Impact**
12.1	Regulation of industrial activities to control their emissions to air	Inspecting all permitted installations in accordance with inspection plans; ensuring compliance with permit conditions; investigation of complaints in a timely manner; taking of action when non-compliance takes place; and ensuring upgrading takes place as necessary	On-going, reporting on annually	As of 31st December 2017 there were 76 industrial activities regulated by the Council through Environmental Permits. During 2017, all required inspections were carried out as per inspection plan to ensure that the installations were complying with their permits. Permits are reviewed periodically in line with statutory guidance and varied as necessary. The activities that are currently regulated are concrete batchers, mobile concrete crushers, crematoria, dry cleaners, vehicle re-sprayers and petrol stations.	**SECTION/DEPT. RESPONSIBLE** Planning/ Environmental Services **COST/IMPACT** Low/Medium **FUNDING** Funded through existing resources
12.2	Continue the thorough investigation and resolution of nuisance complaints with an air pollution component, such as bonfires and from demolition and building work dust	Investigate and resolve complaints when necessary by enforcement of section 80 of the Environmental Protection Act 1990. Give advice on website including links between bonfire information and green waste collections, composting etc. to reduce incidents of bonfires	On-going compliance with response targets	Being implemented as stated. Response target requires same day response for complaints of bonfires, dust and fumes. In 2017 we received 102 complaints related to smoke from chimneys or bonfires and dust from construction sites, 98% were responded to within the required timeframe.	**SECTION/DEPT. RESPONSIBLE** Planning/ Environmental Services **COST/IMPACT** Low/Medium **FUNDING** Funded through

					existing resources
12.3	Proactive response to reducing emissions from demolition and construction work	Updating of code of practice; provision of codes of practice information to all construction sites when complaints received and GLA SPG through planning process for major developments. Implementation of the NRMM regulations	On-going reporting on annually	The Nine Elms Construction Site Compliance Officer (Nine Elms CSCO) works with the major developments in nine Elms to ensure emissions to air are kept to a minimum, best practice is used, and compliance with the GLA best practice guidance on the control of dust and emissions from construction sites. We work in partnership with other South London boroughs on NRMM (Non-road Mobile Machinery), having an officer to work across the boroughs to improve compliance and reduce emissions. The Code of Practice has been reviewed during the year but not been updated yet and it will be further reviewed to bring it into line with Codes of Practice of the central London boroughs. This will be a comprehensive document incorporating templates such as those for construction management plans and construction logistics plans.	**SECTION/DEPT. RESPONSIBLE** Planning/ Environmental Services **COST/IMPACT** Low/Medium **FUNDING** Funded through existing resources
12.4	Continue to enforce and raise awareness of the fact that the whole borough is covered by a smoke control order and that the use of some solid	Provision of information through website and council publications	On-going reporting on annually	A wood burning campaign was carried out in December 2017, targeting retailers selling fuels. A follow-up was then carried in February 2018. The campaign included a letter to retailers	**SECTION/DEPT. RESPONSIBLE** Planning/ Environmental Services

	fuel is prohibited			and an eye-catching poster to be displayed by the fuel sold. The details of the campaign were discussed with the London borough of Richmond and Merton, and the Council also had good communication with Defra. In December 2017, Defra reviewed the poster created, which was circulated internally and had good feedback. Defra also requested an editable copy of the poster to be circulated to all other Local Authorities. The Defra Policy Advisor Team, and their Minister, was made aware of the actions taken in Wandsworth for the wood burning campaign.	**COST/IMPACT** Low/Medium **FUNDING** Funded through existing resources
12.5	Use of vehicle idling powers where appropriate and awareness raising of increased pollution through vehicle idling	Investigation of complaints, taking appropriate action and provision of information on pollution focus areas. To be supported by an awareness campaign that idling vehicles can be reported and the pollution that unnecessary idling generates (working in partnership with the Mayor of London and TfL as appropriate)	On-going reporting on annually	In 2017, the Civil Enforcement Team has been continuously receiving complaints about idling vehicles (schools coaches, taxis, and private vehicles) which were promptly investigated. All 70 Civil Enforcement Officers have been trained and all of them can enforce idling and serve penalties. Idling vehicles when they are stationary can be issued with a Fixed Penalty Notice (FPN) of £20. The notice must be paid within 28 days, or it will increase to £40. In addition to enforcement, community air quality champions proactively approach drivers who leave their	**SECTION/DEPT. RESPONSIBLE** Planning/ Environmental Services **COST/IMPACT** Low/Medium **FUNDING** Funded through existing resources

				engines running whilst stationary to ask them to switch off. The GLA anti-idling campaign 2017-2018 was carried out for the second consecutive year. The anti-idling campaign was funded by the GLA and organised by the Air Quality Team. Events were organised at four primary schools together with an independently-owned sustainability agency to promote anti-idling behaviour both to the students and to their parents outside the schools. Assemblies were prepared to explain air quality pollution, as well as idling issues, to the students. Air quality games were organised for students the same day. Outside the schools, parents and/or drivers were engaged to explain what idling is and how we can improve the local air quality by switching off car engines. Both students and parents were encouraged to use alternatives solutions to cars, such as public transport, cycling and walking.	
Measure 13: Air quality monitoring to review and assess air quality and evaluate actions					
Ref	**Action**	**Implementation**	**Target date and Indicators**	**Progress**	**Resource & Impact**
13.1	To continue to monitor air quality across the borough measuring nitrogen dioxide (NO_2) and fine particles	Measurement of air quality through continuous monitoring and using screening techniques	On-going reporting on annually	In 2017, the Council continued to monitor air quality pollutants (NO2 and PM10) from 7 automatic monitoring stations and 19 monitoring locations	**SECTION/DEPT. RESPONSIBLE** Planning/ Environmental

	(PM_{10})	(working with the local community). Dissemination of results. Reporting of results		using diffusion tubes. In addition, the Council supported the community to carry out citizen science of air quality monitoring within the borough. The air quality team also worked with Public Health for a pilot project, monitoring air quality pollutants in 4 primary schools located in areas where air quality pollution levels are above the national objectives.	Services **COST/IMPACT** Low/Medium **FUNDING** Funded through existing resources
13.2	To monitor air pollution to assess and evaluate action in hot spot areas (as identified by the Mayor of London) as part of the project to improve air quality	Measurement of air quality through continuous monitoring and using screening techniques (working with the local community). Dissemination of results. Reporting of results	On-going reporting on annually	Wandsworth has 5 Air Quality Focus Areas for high levels of NO2 with considerable exposure: Putney, Tooting, Clapham Junction, Wandsworth gyratory, and York road. Air Quality (NO2 and PM10 is monitored in all apart from the newer focus area of York Road, where diffusion tubes are employed – described further below) Tooting High street: after a traffic study conducted to ascertain the apportionment of vehicle types in this area, in 2017 an Air Quality Action Plan for Tooting Town Centre was prepared and it will be further developed with input from Transport Planning, Tfl, Highways Engineers, local businesses and local residents. Clapham Junction: After a traffic study conducted to ascertain the	SECTION/DEPT. RESPONSIBLE Planning/ Environmental Services COST/IMPACT Medium/Medium FUNDING Funded through existing resources

				apportionment of vehicle types in this area, in 2017 an Air Quality Action Plan for Clapham Junction was prepared and it will be implemented. Wandsworth gyratory: the Council is working with Tfl on the plans to remove Wandsworth gyratory to ensure the new road layout provides improvements in the local air quality. Putney High street: The Council worked extensively with Tfl and the Mayor's office for cleaner buses along Putney High street. This has now become the first clean bus corridor. Air quality is still assessed to monitor the effectiveness of the interventions. Furthermore, additional restrictions on deliveries have been implemented to reduce the flow of traffic. The Council is now implementing a MAQF funded project to reduce emissions still further. In 2018, in York road, The Council started screening technique to monitor for one year NO2 through diffusion tubes. Actions required will be assessed at the end of 2018 depending on the results.	

3. Planning Update and Other New Sources of Emissions

Table I. Planning requirements met by planning applications in Wandsworth in 2017

Condition	Number
Number of planning applications where an air quality impact assessment was reviewed for air quality impacts	157
Number of planning applications required to monitor for construction dust	99
Number of CHPs/Biomass boilers refused on air quality grounds	0
Number of CHPs/Biomass boilers subject to GLA emissions limits and/or other restrictions to reduce emissions	9 CHPs 0 Biomass boilers
Number of developments required to install Ultra-Low NO_x boilers	No definitive record
Number of developments where an AQ Neutral building and/or transport assessments undertaken	25
Number of developments where the AQ Neutral building and/or transport assessments not meeting the benchmark and so required to include additional mitigation	11
Number of planning applications with S106 agreements including other requirements to improve air quality	8
Number of planning applications with CIL payments that include a contribution to improve air quality	Cannot identify individual planning applications where contribution to improve air quality has been included. However, there have been contributions made across the Borough.
NRMM: Central Activity Zone and Canary Wharf - Number of conditions related to NRMM included. - Number of developments registered and compliant. - Please include confirmation that you have checked that the development has been registered at www.nrmm.london and that all NRMM used on-site is compliant with Stage IIIB of the Directive and/or exemptions to the policy.	- No definitive record - 24 registered - The website has been checked to ensure that NRMM is compliant with Stage IIIB of the Directive and/or exemptions to the policy. Some sites require further follow up to ensure compliance, such as where there is a miss match or engine plate failure indicated.

NRMM: Greater London (excluding Central Activity Zone and Canary Wharf) - Number of conditions related to NRMM included. - Number of developments registered and compliant. - Please include confirmation that you have checked that the development has been registered at www.nrmm.london and that all NRMM used on-site is compliant with Stage IIIA of the Directive and/or exemptions to the policy.	- No definitive record - 29 registered - The website has been checked to ensure that NRMM is compliant with Stage IIIA of the Directive and/or exemptions to the policy. Some sites require further follow up to ensure compliance, such as where there is a miss match or engine plate failure indicated.

These figures are estimated from a search of our records. The monitoring process for reviewing planning application is to be further revised to ensure more accurate data is provided next year.

All planning applications are referred from the Planning Department to the Environmental Services Team. A dedicated team of officers will review the application and make comments and recommend conditions as necessary. In partnership with other South London Boroughs, we have employed officers to monitor construction sites to check for NRMM compliance. In the event that any sites are non-complaint, the officers will support the site to become complaint and refer any refusal to adjust to the Planning Enforcement Team of the relevant authority. 11 visits have been by the NRMM officer in 2017. Considering the resourcing and how this apportioned throughout London it is proposed that approximately 15 visits will be undertaken in 2018 although it is hoped that through effective working between officers that this figure can be higher.

3.1 New or significantly changed industrial or other sources

No new sources have been identified.

Appendix A Details of Monitoring Site QA/QC

A.1 Automatic Monitoring Sites

Routine calibrations of our air quality monitoring stations are carried out by the local site operator on a fortnightly basis. This was ESU1 until 30th November 2017 and then by TRL (Transport Research Laboratories) from 1st December 2017 onwards. Site audits are undertaken on a six monthly basis by The National Physical Laboratory's (NPL).

Servicing and maintenance of the air quality monitoring stations was undertaken by TRL (Transport Research Laboratories) in 2017 and it continues to be undertaken by them.

Data ratification and air quality support services were undertaken by King's College London in 2017 and it continues to be undertaken by them.

There are no relevant issues to be highlighted.

PM_{10} Monitoring Adjustment

For the monitoring data collected from the monitoring stations located in Putney High Street (WA7), Thessaly Road (WAA), Tooting High Street (WAB) and Lavender Hill (WAC), the Volatile Correction Method (VCM) has been used to correct the data. An FDMS was installed at the Felsham Road (WA9) monitoring station until 21 January 2015. This has now been converted to a TEOM, and therefore for 2017 the Volatile Correction Method (VCM) was used to correct the data.

A.2 Diffusion Tube Quality Assurance / Quality Control

NO_2 monitoring by means of passive diffusion tubes has been undertaken within the Borough since 2004. Monitoring using diffusion tubes has advantages over continuous monitoring because it is cheaper and therefore more sites can be established and assessed. The main disadvantage is that the method is less precise and accurate than continuous monitoring. The recommended methods to reduce these errors include the use of good QA/QC practices and bias adjustment factors that are derived from co-location studies between continuous analysers and diffusion tubes.

The bias adjustment factors are specific to each year, analysing laboratory, method of analysis and location. The factors are therefore also limited to the data supplied. The Review and Assessment website advises that "*in many cases, using an overall correction factor derived from as many co-location studies a possible will provide the 'best estimate' of the 'true' annual mean concentration. It is important to recognise that there will still be uncertainty associated with this bias adjusted annual mean. One analysis has shown that the uncertainty for tubes bias adjusted in this way is ±20% (at 95% confidence level). This compares with a typical value of ±10% for chemiluminescence monitors subject to appropriate QA/QC procedures*".

From the beginning of January 2007 the supply and analysis of all diffusion tubes has been undertaken by Gradko International. The diffusion tubes exposed in 2017 were still supplied and analysed by Gradko International. They participate in the AIR Proficiency Testing (PT) scheme, which combines the materials previously offered by the WASP (Workplace Analysis Scheme for proficiency) PT scheme, operated and the STACKS PT scheme, provided by LGC. LGC is the accredited PT provider

of the AIR PT scheme, which is an independent analytical performance testing scheme. The scheme is an important QA/QC exercise for laboratories supplying diffusion tubes to Local Authorities for use in the context of Local Air Quality Management (LAQM).

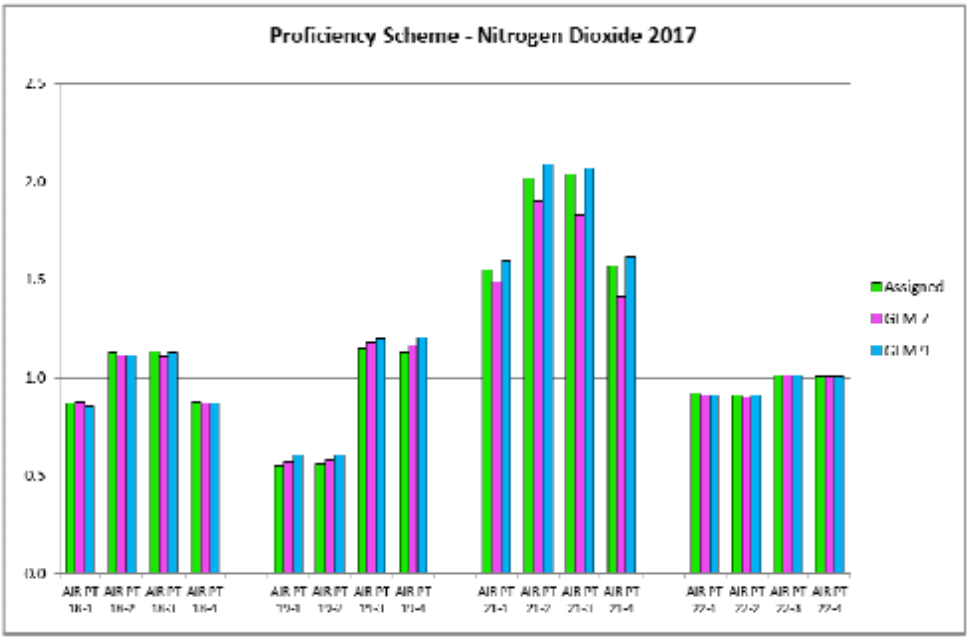
Gradko International laboratory demonstrated a satisfactory performance in a QA/QC scheme for analysis of NO_2 diffusion tubes. The AIR PT Nitrogen Dioxide Proficiency Scheme Results 2017 is shown in Table J.

Table J. Gradko nitrogen dioxide proficiency scheme results

Methods: GLM 7 – Camspec M550 Spectrophotometer, GLM 9 – QuAAtro Continuous Flow analyser

AIR PT Proficiency Scheme - Nitrogen Dioxide 2017								
Date	Round	Assigned value	Camspec M550 - GLM 7			QuAAtro - GLM 9		
			Measured concentration	z-Score	% Bias	Measured concentration	z-Score	% Bias
Feb-17	AIR PT 18-1	0.87	0.88	0.15	1.1%	0.86	-0.15	-1.1%
Feb-17	AIR PT 18-2	1.13	1.12	-0.12	-0.9%	1.12	-0.12	-0.9%
Feb-17	AIR PT 18-3	1.14	1.11	-0.35	-2.6%	1.13	-0.12	-0.9%
Feb-17	AIR PT 18-4	0.88	0.87	-0.15	-1.1%	0.87	-0.15	-1.1%
May-17	AIR PT 19-1	0.55	0.57	0.49	3.6%	0.61	1.46	10.9%
May-17	AIR PT 19-2	0.56	0.58	0.48	3.6%	0.61	1.19	8.9%
May-17	AIR PT 19-3	1.15	1.18	0.35	2.6%	1.20	0.58	4.3%
May-17	AIR PT 19-4	1.13	1.16	0.34	2.7%	1.21	0.90	7.1%
Aug-17	AIR PT 21-1	1.55	1.49	-0.49	-3.9%	1.60	0.41	3.2%
Aug-17	AIR PT 21-2	2.02	1.90	-0.79	-5.9%	2.09	0.46	3.5%
Aug-16	AIR PT 21-3	2.04	1.83	-1.28	-10.3%	2.07	0.18	1.5%
Aug-16	AIR PT 21-4	1.57	1.41	-1.29	-10.2%	1.62	0.40	3.2%
Oct-17	AIR PT 22-1	0.92	0.91	-0.14	-1.1%	0.91	-0.14	-1.1%
Oct-17	AIR PT 22-2	0.91	0.90	-0.15	-1.1%	0.91	0	0.0%
Oct-17	AIR PT 22-3	1.02	1.02	0	0.0%	1.02	0	0.0%
Oct-17	AIR PT 22-4	1.01	1.01	0.0	0.0%	1.01	0	0.0%

Figure F. Gradko nitrogen dioxide proficiency scheme graph



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NO_2 diffusion tubes grid reference locations, and location maps illustrating the distribution of sites across the Borough are provided in Appendix E. The diffusion tubes were either located at kerbside sites, roadside sites, or urban background sites, as described in Table C. The diffusion tubes were located in accordance with the siting criteria in the '*Diffusion tubes for ambient NO_2 monitoring Practical Guidance for laboratories and users*' (AEA Energy & Environment, ED48673043, Issue 1a, Feb 2008, Report to Defra and the Devolved Administrations).

Factor from Local Co-location Studies and Discussion of Choice of Factor to Use

A co-location study using 2 nitrogen dioxide diffusion tubes has been carried out at the Felsham road, Putney (automatic monitoring site ID: WA9; non- automatic monitoring site IDs: W21 and W22). The locally derived bias adjustment factor was calculated at 0.96. Due to that some periods showed poor data capture and some periods showed poor precision, we have used the nationally derived bias adjustment factor of 0.89 as per diffusion Tube Bias Factor s/s 03/2018. As the guidance states, the use of nationally derived bias adjustment factor will provide the best estimate of the true annual mean concentration as it is based on more studies than a locally derived one.

Appendix B Full Monthly Diffusion Tube Results for 2017

Table K. NO_2 Diffusion Tube Results

Site ID	Valid data capture for monitoring period % [a]	Valid data capture 2017 % [b]	Annual Mean NO_2													
			Jan	Feb	March	Apr	May	June	Jul	Aug	Sept	Oct	Nov	Dec	Annual mean – raw data [c]	Annual mean – bias adjusted [c]
W23 (37 West Hill)	N/A	100	**84**	**53**	**77**	**59**	**60**	**82**	**67**	**52**	**57**	**69**	**51**	**53**	**64**	**57**
W24 (Putney Sign Mac Donald's)	N/A	92	**87**	**63**	**69**	**50**	**54**	**76**	**67**	**55**	--- [d]	**127**	**68**	**68**	**71**	**63**
W21 (Felsham road)	N/A	83	--- [d]	30	37	25	27	28	24	25	30	39	29	--- [d]	30	26
W22 (Felsham road)	N/A	100	**63**	32	36	27	27	29	24	25	29	29	**43**	29	33	29
W6 (21 Daylesford Avenue)	N/A	100	**46**	22	28	26	22	19	16	18	23	27	36	30	26	23
W25 (Roehampton Church School)	N/A	75	**58**	29	40	37	30	--- [d]	--- [d]	--- [d]	32	18	**46**	34	36	32
W26 (Replingham Road)	N/A	92	**54**	34	40	34	29	38	31	30	32	--- [d]	--- [d]	32	35	31

Site ID	Valid data capture for monitoring period % [a]	Valid data capture 2017 % [b]	Annual Mean NO_2													
			Jan	Feb	March	Apr	May	June	Jul	Aug	Sept	Oct	Nov	Dec	Annual mean – raw data [c]	Annual mean – bias adjusted [c]
W27 (68-70 Sutherland Grove)	N/A	100	**48**	27	30	26	23	18	19	20	23	29	36	29	27	24
W28 (61 Summerley street)	N/A	92	**59**	26	31	25	24	--- [d]	23	23	26	30	30	31	30	27
W29 (Junction Skelbrook street / Garratt lane)	N/A	100	**52**	29	38	35	31	31	29	27	35	38	**43**	31	35	31
W4 (108 Mitcham road)	N/A	100	**47**	**59**	**91**	**71**	**59**	**86**	**82**	**61**	**72**	**94**	**84**	**84**	**74**	**66**
W8 (50 Bickely street)	N/A	100	**59**	29	38	33	29	26	26	27	33	36	**45**	37	35	31
W30 (11B Elmbourne road)	N/A	100	**59**	32	39	32	30	35	29	30	34	**41**	**42**	39	37	33
W31 (Junction Hildreth Street / Bedford Hill)	N/A	100	**69**	39	**47**	38	36	39	39	39	**46**	**49**	**51**	38	**44**	39
W32 (2-3 Balham High road)	N/A	100	**82**	**47**	**59**	**44**	**41**	**51**	**43**	40	**50**	**57**	**54**	**48**	**51**	**46**

Site ID	Valid data capture for monitoring period % [a]	Valid data capture 2017 % [b]	Annual Mean NO_2													
			Jan	Feb	March	Apr	May	June	Jul	Aug	Sept	Oct	Nov	Dec	Annual mean – raw data [c]	Annual mean – bias adjusted [c]
W33 (Lockington road)	N/A	92	**66**	36	**41**	36	32	38	33	33	--- [d]	**42**	**49**	39	40	36
W34 (46 Shelgate road)	N/A	100	**59**	30	39	33	26	29	24	23	29	35	46	38	34	31
W35 (47 Northcote road)	N/A	100	**63**	29	**45**	38	37	36	32	31	36	40	**45**	33	39	34
W36 (St Anne's Hill)	N/A	92	**67**	--- [d]	**48**	**51**	34	40	39	37	39	**46**	**53**	34	**44**	39

Exceedance of the NO_2 annual mean AQO of 40 µg m^{-3} are shown in **bold**.

[a] Data capture for the monitoring period, in cases where monitoring was only carried out for part of the year

[b] Data capture for the full calendar year (e.g. if monitoring was carried out for six months the maximum data capture for the full calendar year would be 50%)

[c] Means should be "annualised" in accordance with LLAQM Technical Guidance, if valid data capture is less than 75%.

[d] Notes:

Sample W26 October 2017 was not representative, so the value has been deleted.
Sample W21 January 2017 had analysis contaminated, so the value has been deleted.
Sample W21 December 2017 had analysis contaminated, so the value has been deleted.
Sample W24 September 2017 had analysis contaminated, so the value has been deleted.
Samples W25 June, July and August 2017 were missing.
Sample W26 November 2017 was missing.
Sample W28 June 2017 was missing.
Sample W33 September 2017 was missing.
Sample W37 February 2017 was missing.

Bias Corrected (0.89) as per diffusion Tube Bias Factor s/s 03/2018.

Colorimetric Analysis Of Nitrogen Dioxide
Analysis carried out in accordance with documented in-house Laboratory Method GLM9 - QuAAtro Analyser
Results have been corrected to a temperature of 293 K (20 °C)
Overall M.U. ±5.1%
Tube Preparation: 20% TEA /Water
Limit of Detection
0.020µg NO2

Appendix C. Calculation of local bias correction factors

Table L. Precision and Accuracy of Triplicate Tubes

Checking Precision and Accuracy of Triplicate Tubes

AEA Energy & Environment
From the AEA group

Diffusion Tubes Measurements										Automatic Method		Data Quality Check	
Period	Start Date dd/mm/yyyy	End Date dd/mm/yyyy	Tube 1 μgm^{-3}	Tube 2 μgm^{-3}	Tube 3 μgm^{-3}	Triplicate Mean	Standard Deviation	Coefficient of Variation (CV)	95% CI of mean	Period Mean	Data Capture (% DC)	Tubes Precision Check	Automatic Monitor Data
1	04/01/2017	06/02/2017	49.3	63.4		56	10.0	18	89.5	61.7	99	Good	Good
2	31/01/2017	28/02/2017	29.5	31.6		31	1.4	5	12.8	37.2	100	Good	Good
3	28/02/2017	30/03/2017	37.3	36.3		37	0.7	2	6.7	30.6	100	Good	Good
4	30/03/2017	26/04/2017	25.2	27.2		26	1.4	5	12.5	29.5	100	Good	Good
5	26/04/2017	01/06/2017	27.4	27.1		27	0.3	1	2.5	31	100	Good	Good
6	02/06/2017	30/06/2017	28.3	28.6		28	0.2	1	1.7	26	44	Good	Poor Data Capture
7	30/06/2017	02/08/2017	24.2	23.8		24	0.3	1	2.4	22	57	Good	Poor Data Capture
8	02/08/2017	30/08/2017	25.4	25.4		25	0.0	0	0.3	19	99	Good	Good
9	30/08/2017	26/09/2017	30.0	29.2		30	0.6	2	5.4	23	100	Good	Good
10	26/09/2017	31/10/2017	39.1	28.7		34	7.3	22	66.0	23	97	Poor Precision	Good
11	03/11/2017	06/12/2017	28.7	43.1		36	10.2	28	91.6	26.8	43	Poor Precision	Poor Data Capture
12	06/12/2017	03/01/2018	0.4	29.1		15	20.3	138	182.3			Poor Precision	
13													
										Overall survey -->		Poor precision	Poor Overall

It is necessary to have results for at least two tubes in order to calculate the precision of the measurements

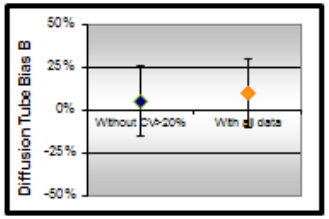
(Check average CV & DC from Accuracy calculations)

Site Name/ ID:	PUTNEY FELSHAM ROAD

Precision 9 out of 12 periods have a CV smaller than 20%

Accuracy (with 95% confidence interval) without periods with CV larger than 20%	
Bias calculated using 7 periods of data	
Bias factor A	1 (0.83 - 1.26)
Bias B	0% (-20% - 21%)
Diffusion Tubes Mean:	33 μgm^{-3}
Mean CV (Precision):	5
Automatic Mean:	33 μgm^{-3}
Data Capture for periods used:	100%
Adjusted Tubes Mean:	33 (28 - 42) μgm^{-3}

Accuracy (with 95% confidence interval) WITH ALL DATA	
Bias calculated using 8 periods of data	
Bias factor A	0.96 (0.8 - 1.19)
Bias B	4% (-16% - 24%)
Diffusion Tubes Mean:	33 μgm^{-3}
Mean CV (Precision):	7
Automatic Mean:	32 μgm^{-3}
Data Capture for periods used:	99%
Adjusted Tubes Mean:	32 (27 - 40) μgm^{-3}



Jaume Targa, for AEA
Version 04 - February 2011

Table M. Single Tube Bias Adjustment

Adjustment of SINGLE Tubes

AEA Energy & Environment
From the AEA group

Diffusion Tube Measurements															
Site Name/ID	Periods													Raw Mean	Valid periods
	1	2	3	4	5	6	7	8	9	10	11	12	13		
37 West Hill	84	53	77	59	60	82	67	52	57	69	51	53		63.8	12
Putney Sign (MacDonald's)	87	63	69	50	54	76	67	55	-	127	68	68		71.3	11
Felsham Rd (tube 1)	-	30	37	25	27	28	24	25	30	39	29	-		29.5	10
Felsham Rd (tube 2)	63	32	36	27	27	29	24	25	29	29	43	29		32.8	12
21 Daglesford Avenue	46	22	28	26	22	19	16	18	23	27	36	30		26.2	12
Roehampton Church School	58	29	40	37	30	-	-	-	32	18	46	34		36.0	9
Replingham Road	54	34	40	34	29	38	31	30	32	-	-	32		35.3	10
68-70 Sutherland Grove	48	27	30	26	23	18	19	20	23	29	36	29		27.2	12
61 Summerley Street	59	26	31	25	24	-	23	23	26	30	30	31		29.8	11
Junction Skelbrook Street / Garratt Lane	52	29	38	35	31	31	29	27	35	38	43	31		34.7	12
108 Mitcham Road	47	59	91	71	59	86	82	61	72	94	84	84		74.1	12
50 Bickely Street	59	29	38	33	29	26	26	27	33	36	45	37		34.8	12
11b Elmbourne Road	59	32	39	32	30	35	29	30	34	41	42	39		36.8	12
Junction Hildreth Street / Bedford Hill	69	39	47	38	36	39	39	39	46	49	51	38		44.2	12
2-3 Balham High Road	82	47	59	44	41	51	43	40	50	57	54	48		51.4	12
Lockington Road	66	36	41	36	32	38	33	33	-	42	49	39		40.3	11
46 Shelgate Road	59	30	39	33	26	29	24	23	29	35	46	38		34.4	12
47 Northcote Road	63	29	45	38	37	36	32	31	36	40	45	33		38.7	12
St Anne's Hill (opposite St Anne's School)	67	-	48	51	34	40	39	37	39	46	53	34		44.3	11

Adjusted measurement (95% confidence interval) with all the data 8 periods used in this calcuations	
Bias Factor A	0.96 (0.8 - 1.19)
Bias B	4% (-16% - 24%)
Tube Precision: 7	Automatic DC: 99%
Adjusted with 95% CI	61 (51 - 76)
Adjusted with 95% CI	68 (57 - 85)
Adjusted with 95% CI	28 (24 - 35)
Adjusted with 95% CI	31 (26 - 39)
Adjusted with 95% CI	25 (21 - 31)
Adjusted with 95% CI	35 (29 - 43)
Adjusted with 95% CI	34 (28 - 42)
Adjusted with 95% CI	26 (22 - 32)
Adjusted with 95% CI	29 (24 - 36)
Adjusted with 95% CI	33 (28 - 41)
Adjusted with 95% CI	71 (59 - 88)
Adjusted with 95% CI	33 (28 - 41)
Adjusted with 95% CI	35 (29 - 44)
Adjusted with 95% CI	42 (35 - 53)
Adjusted with 95% CI	49 (41 - 61)
Adjusted with 95% CI	39 (32 - 48)
Adjusted with 95% CI	33 (27 - 41)
Adjusted with 95% CI	37 (31 - 46)
Adjusted with 95% CI	43 (35 - 53)

The bias adjustment factor used in these calculations include all the data and no screening of data due to poor precision has been applied.

Appendix D. Locations of automatic monitoring sites for 2017

Site ID	Site Name	Grid reference (X,Y)
WA2	Wandsworth Town Hall, High street Wandsworth	525779, 174662
WA7	Putney High Street, 94A Putney High street (Denomination according to London Air website: Putney high street kerbside)	524035, 175334
WA8	Putney High Street, 94A Putney High street (Denomination according to London Air website: Putney high street façade roadside)	524032, 175335
WA9	Felsham Road, Putney (Denomination according to London Air website: Putney urban background)	524044, 175495
WAA	Thessaly Road, Battersea	529137, 177249
WAB	Tooting High Street	527567, 171628
WAC	313 Lavender Hill, Clapham Junction	527430, 175454


1:1250
Site ID: WA9

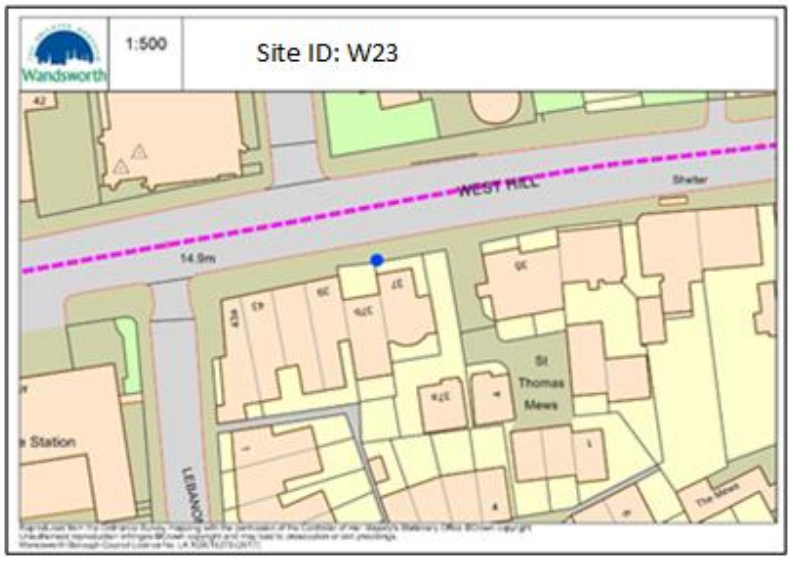

1:1250
Site ID: WAA
NINE ELMS


1:1250
Site ID: WAB


1:1250
Site ID: WAC
Wandsworth

Appendix E Locations of non-automatic monitoring sites for 2017

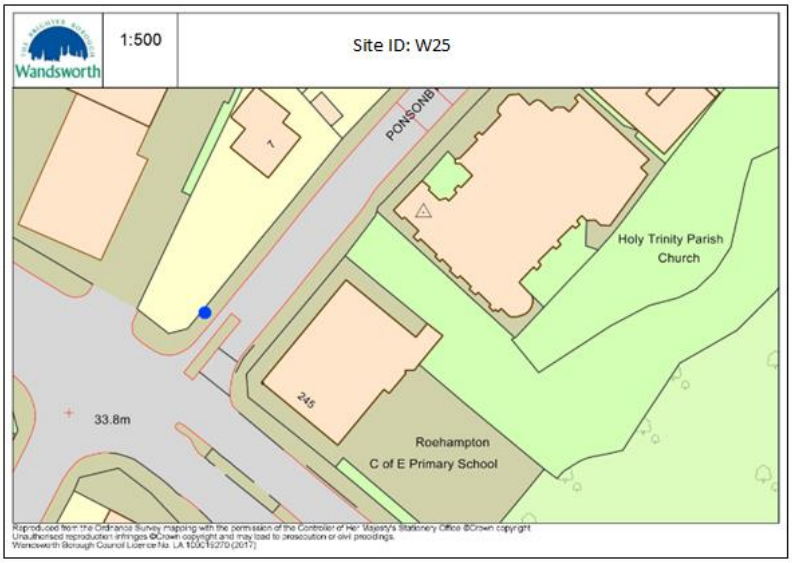
ID	Name	Area	Grid reference (X,Y)
W23	37 West Hill	Wandsworth Town	525111, 174619
W24	Putney Sign (MacDonald's)	Putney	524045, 175366
W21	Felsham Rd (tube 1)	Putney	524044, 175495
W22	Felsham Rd (tube 2)	Putney	524044, 175495
W6	21 Daylesford Avenue	Putney	522270, 175307
W25	Roehampton Church School (on corner of Roehampton Lane)	Roehampton	522542, 173700
W26	Replingham Road (corner of Heythrope street)	Southfields	524847, 173282
W27	68-70 Sutherland Grove (opposite St. Cecilia's School)	Southfields	524633, 173594
W28	61 Summerley Street	Earlsfield	526011, 172869
W29	Junction Skelbrook Street / Garratt Lane	Earlsfield	526099, 172833
W4	108 Mitcham Road	Tooting Broadway	527688, 171204
W8	50 Bickely Street	Tooting Broadway	527524, 171239
W30	11b Elmbourne Road	Balham	528900, 172431
W31	Junction Hildreth Street / Bedford Hill	Balham	528607, 173333
W32	2-3 Balham High Road	Balham	528436, 173133
W33	Lockington Road	Battersea	528871, 176943
W34	46 Shelgate Road	Northcote	527569, 174986
W35	47 Northcote Road	Northcote	527487, 174981
W36	208 St Anne's Hill (opposite St Anne's School)	Fairfield	525875, 174616

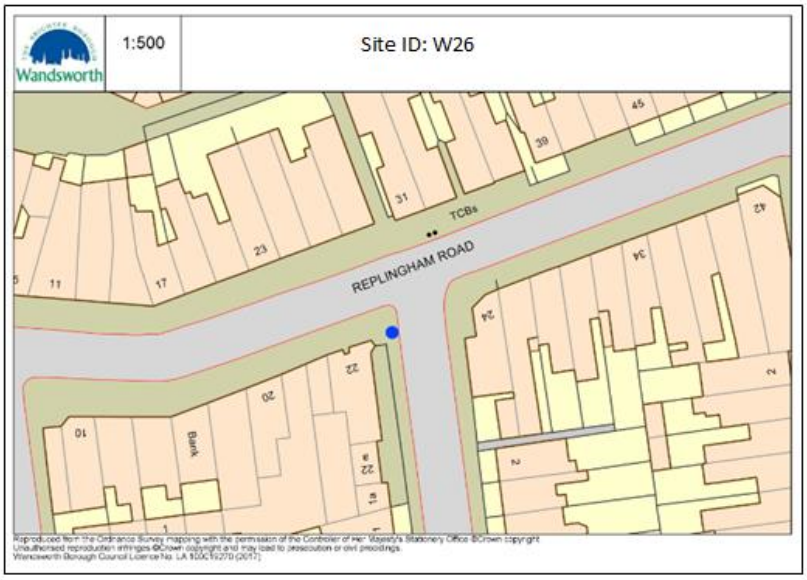



1:500
Site ID: W24
PUTNEY HIGH STREET
TOKEN YARD
RUSSELL YARD


1:500
Site ID: W21 and W22
Deer Lodge
Rowland House
FELSHAM ROAD
Centrus partments


1:500
Site ID: W6
LANGSIDE AVENUE


1:500
Site ID: W25
Wandsworth
PONSONB
Holy Trinity Parish
Church
245
33.8m
Roehampton
C of E Primary School


1:500
Site ID: W26
Wandsworth
45
39
31
TCBs
REPLINGHAM ROAD
23
17
11
42
34
24
22
20
10
Bank


1:500
Site ID: W27
Wandsworth
LB


1:500
Site ID: W28
SMITHS YARD

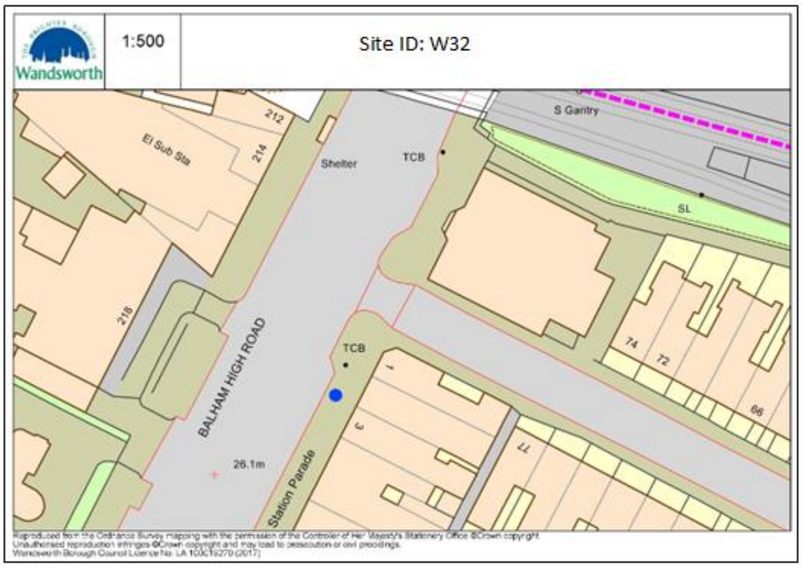

1:500
Site ID: W29
SKELBROOK STREET

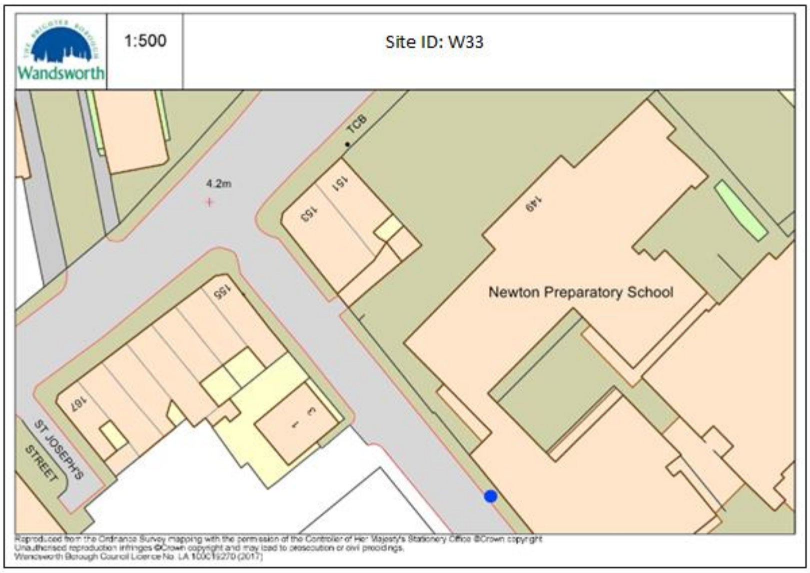

1:500
Site ID: W4
TCB
Shelter
TCB
Church


1:500
Site ID: W8
BICKLEY STREET


1:500
Site ID: W30
Tarsyan Court


1:500
Site ID: W31
HILDRETH STREET
Metropolis Apartments
Hildreth Street Mews
26.2m


Wandsworth
1:500
Site ID: W32
S Gantry
El Sub Sta
212
214
Shelter
TCB
SL
218
BALHAM HIGH ROAD
TCB
74
72
1
3
66
77
26.1m
Station Parade


Wandsworth
1:500
Site ID: W33
TCB
4.2m
151
153
149
155
Newton Preparatory School
167
ST JOSEPH'S STREET


Wandsworth
1:500
Site ID: W34 and W35
39
43
47
49 to 53
8.9m
37
41
29
29a
SHELGATE ROAD
52
El Sub Sta
9.0m


Wandsworth
1:500
Site ID: W36
8.6m
TCB
PH
PH
College Mews
Oak Place
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