

**London Borough of Waltham Forest Air Quality Annual
Status Report for 2016
Date of publication: May 2017**



This report provides a detailed overview of air quality in the London Borough of Waltham Forest during 2016. It has been produced to meet the requirements of the London Local Air Quality Management statutory process¹.

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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
GLA	Greater London Authority
LAEI	London Atmospheric Emissions Inventory
LAQM	Local Air Quality Management
LLAQM	London Local Air Quality Management
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

Table A. Summary of National Air Quality Standards and Objectives

Pollutant	Objective (UK)	Averaging Period	Date¹
Nitrogen dioxide - NO ₂	200 $\mu\text{g m}^{-3}$ not to be exceeded more than 18 times a year	1-hour mean	31 Dec 2005
	40 $\mu\text{g m}^{-3}$	Annual mean	31 Dec 2005
Particles - PM ₁₀	50 $\mu\text{g m}^{-3}$ not to be exceeded more than 35 times a year	24-hour mean	31 Dec 2004
	40 $\mu\text{g m}^{-3}$	Annual mean	31 Dec 2004
Particles - PM _{2.5}	25 $\mu\text{g m}^{-3}$	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 $\mu\text{g m}^{-3}$ not to be exceeded more than 35 times a year	15 minute mean	31 Dec 2005
	350 $\mu\text{g m}^{-3}$ not to be exceeded more than 24 times a year	1 hour mean	31 Dec 2004
	125 $\mu\text{g m}^{-3}$ not to be exceeded more than 3 times a year	24 hour mean	31 Dec 2004

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

1. Air Quality Monitoring

1.1 Locations

Table B. Details of Automatic Monitoring Sites for 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
WL1	Dawlish Rd	538380	186717	Urban Background	Y	5.5m	15m	3.5m	NO ₂ , PM ₁₀	Chemiluminescent; NOx analyser
WL4	Billet Round About	537468	191071	Kerbside	Y	11m	0.5m	2m	NO ₂ , PM ₁₀	Chemiluminescent; NOx analyser
WL5	Ruckholt Close	537804	186025	Roadside	Y	8m	1.5m	3.5m	NO ₂ , PM ₁₀	Chemiluminescent; FDMS; NOx analyser

Table C. Details of Non-Automatic Monitoring Sites for 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	Tube co-located with an automatic monitor? (Y/N)
Chingford Assembly Hall	538705	194452	Urban Background	Y	<i>Approx.20m</i>	15m	10m	NO ₂	Y	Chingford Assembly Hall
Dawlish Rd	538380	186717	Urban Background	Y	<i>Within school boundary</i>	10m	3.5m	NO ₂	Y	Dawlish Rd
Leyton Library	538245	186285	Roadside	Y	<i>Approx.15m</i>	<i>Approx. 11m</i>	<i>Approx. 8m</i>	NO ₂	Y	Leyton Library
Connaught	539025	186945	Roadside	Y	<i>Within school boundary</i>	10m (nearest road is A12-M11 Link Road)	2.5m	NO ₂	Y	Connaught

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 section 3.1.

Table D. Annual Mean NO₂ Ratified and Bias-adjusted Monitoring Results (µg m⁻³)

Site ID	Site type	Valid data capture for monitoring period % ^a	Valid data capture 2016 % ^b	Annual Mean Concentration (µg m ⁻³)						
				2010 ^c	2011 ^c	2012 ^c	2013 ^c	2014 ^c	2015 ^c	2016 ^c
WL1 Dawlish Road	Automatic	N/A	94.98%	38	37	37	36	28 (data capture 73.22%)	26	30
WL4 Crooked Billet	Automatic	N/A	98.09%	74.3	71	73	68	74	66	62
WL5 Ruckholt Close	Automatic	N/A	99.06%	46	40	24	28	36	31	35
Chingford Assembly Hall	Diffusion	N/A	91.67%	30.6	28.8	26.9	26.3	26.85	24.69	27.21
Dawlish Rd	Diffusion	N/A	94.44%	34.3	31.5	31.4	28.4	27.63	25.25	28.87
Leyton Library	Diffusion	N/A	100%	67.9	61.9	52	52.4	49.39	46.53	51.68
Connaught	Diffusion	N/A	91.67%	47.6	41.8	41.2	41.5	39.27	33.64	42.79

Notes: Exceedance of the NO₂ annual mean AQO of 40 µg m⁻³ are shown in **bold**.

NO₂ annual means in excess of 60 µg m⁻³, indicating a potential exceedance of the NO₂ 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%

Table E. NO₂ Automatic Monitor Results: Comparison with 1-hour Mean Objective

Site ID	Valid data capture for monitoring period % ^a	Valid data capture 2016 % ^b	Number of Hourly Means > 200 µg m ⁻³						
			2010 ^c	2011 ^c	2012 ^c	2013 ^c	2014 ^c	2015 ^c	2016 ^c
WL1 Dawlish Road	N/A	94.98%	0	3	2	2	1	0 (99.8 th percentile is 88; less than 200 therefore unlikely to experience exceedance)	0

Site ID	Valid data capture for monitoring period % ^a	Valid data capture 2016 % ^b	Number of Hourly Means > 200 µg ^m ⁻³						
			2010 ^c	2011 ^c	2012 ^c	2013 ^c	2014 ^c	2015 ^c	2016 ^c
WL4 Crooked Billet	N/A	98.09%	20	14	19	11	116	37 (99.8th percentile is 243 suggesting an exceedance of the hourly mean objective)	15
WL5 Ruckholt Close	N/A	99.06%	5	0	0	0	7	0	0

Notes: Exceedance of the NO₂ 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%

Table F. Annual Mean PM₁₀ Automatic Monitoring Results (µg m⁻³)

Site ID	Valid data capture for monitoring period % ^a	Valid data capture 2016 % ^b	Annual Mean Concentration (µgm ⁻³)						
			2010 ^c	2011 ^c	2012 ^c	2013 ^c	2014 ^c	2015 ^c	2016 ^c
WL1 Dawlish Road	N/A	92.68%	21.7	25	18	21	19	16	18
WL4 Crooked Billet	N/A	99.26%	29.7	29	32	31	40	32	29
WL5 Ruckholt Close	N/A	95.51%	24.5	25	19	21	20	18	19

Notes: Exceedance of the PM₁₀ annual mean AQO of 40 µgm⁻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%

Table G. PM₁₀ Automatic Monitor Results: Comparison with 24-Hour Mean Objective

Site ID	Valid data capture for monitoring period % ^a	Valid data capture 2016 % ^b	Number of Daily Means > 50 µg m ⁻³						
			2010 ^c	2011 ^c	2012 ^c	2013 ^c	2014 ^c	2015 ^c	2016 ^c
WL1 Dawlish Road	N/A	92.68%	1	8	0	3	1	0 (90 th percentile is 24)	4
WL4 Crooked Billet	N/A	99.26%	16	14	21	22	60	23 (90 th percentile is 48)	22
WL5 Ruckholt Close	N/A	95.51%	11	20	13	8	9	3 (90 th percentile is 28)	6

Notes: Exceedance of the PM₁₀ short term AQO of 50 µg m⁻³ over the permitted 35 days per year or where the 90.4th percentile exceeds 50 µg m⁻³ are shown in **bold**. Where the period of valid data is less than 90% 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%

2. Action to Improve Air Quality

Table J. Commitment to Cleaner Air Borough Criteria

Theme	Criteria	Achieved (Y/N)	Evidence	
1. Political leadership	1.a	Pledged to become a Cleaner Air for London Borough (at cabinet level) by taking significant action to improve local air quality and signing up to specific delivery targets.	Y	Refer to appendix C for letter from Council Leader
	1.b	Provided an up-to-date Air Quality Action Plan	Y	<ul style="list-style-type: none"> • Draft AQAP measures (see attached). • Full document cannot be provided as it is still in the consultation phase. The document was re-drafted based on the new GLA AQAP template. The Council however continues to deliver some of the proposed measures demonstrating our commitment to air quality improvement measures.

		(AQAP), fully incorporated into LIP funding and core strategies.		
2. Taking action	2.a	Taken decisive action to address air pollution, especially where human exposure and vulnerability (e.g. schools, older people, hospitals etc) is highest.	Y	<ul style="list-style-type: none"> The Council has delivered the following projects to raise awareness, educate, influence pollution reduction measures and also influence pollution exposure reduction in 2016: <p><u>Anti-Idling project around schools</u></p> <p>We have over 46 volunteer air quality champions and have at least one anti idling event per month at selected schools. Officers with the capability for issuing fixed penalty notices for idling and illegal parking also attend to ensure compliance and volunteer safety. The project has been picked up by various media outlets:</p> <p>http://www.standard.co.uk/news/london/smog-wars-at-the-school-gates-council-tells-school-run-drivers-to-switch-off-cars-or-face-fines-a3505516.html</p> <p>http://www.thetimes.co.uk/edition/news/turn-engines-off-at-schools-parents-told-86w2zmpwk?utm_source=LGiU+Subscribers&utm_campaign=7af8593e6e-EMAIL_CAMPAIGN_2017_04_04&utm_medium=email&utm_term=0_4e47157211-7af8593e6e-199020149</p> <p>http://www.express.co.uk/life-style/cars/787633/parents-driving-fine-school-parking-idling-engine-air-pollution-London</p> <p><u>Green Courier</u></p> <p>A MAQF project, the initiative offers an emission free delivery service for local businesses and residents in the borough. It is not only designed to address last mile emissions but also influence a behaviour change by demonstrating that cargo bikes, as well as electric/hydrogen vehicles are just as effective at making deliveries as conventional diesel/petrol vehicles. This is an emissions free delivery service. A</p>

				<p>pilot was held for 2 weeks in December 2016. During this time, 1000 packages were delivered. An estimated emissions savings of 2288.14g/km of NOx and 81.72g/km of PM10 were achieved. Following the success of the pilot, a full delivery service will now be delivered until 2019 with an aim to continue to deliver the service once MMAQF funding has ceased. The following link provides information about the Christmas pilot: https://www.youtube.com/watch?v=078gwpJN1nU</p> <p><u>Construction Dust/Emissions Officer</u></p> <p>This officer is part of a MAQF project shared between Waltham Forest, Enfield, Barnet and Haringey. It is estimated that construction and NRMM account for around 15% of PM10 and 12% of NOx emissions. The officer is working with construction sites to ensure compliance with the NRMM and that best practices in terms of control of emissions and dust are followed. A lessons learned document and tool kit will be produced upon completion of the 3 year project for other authorities to use.</p> <p><u>Mini Holland</u></p> <p>This is an on-going project which works towards improving cycling and pedestrian infrastructure, creating green spaces, limiting vehicle access to residential roads, implementing borough wide 20mph speed limit, providing free bicycle training to all schools, businesses and residents in Waltham Forest (influencing a modal shift to more sustainable forms of transportation), implementing controlled parking zones throughout the borough, ensuring all Council fleet operators and contractors are accredited to FORS Gold standard within the next 4 years, providing safe urban driving courses every calendar month to drivers.</p> <p><u>School Air Quality Assistance</u></p> <p>The Council offers a service to local schools providing assistance to schools in relation to all air quality matters https://thehub.walthamforest.gov.uk/services-and-support/property/air-quality-service</p>
	2.b	Developed plans for business engagement	Y	<ul style="list-style-type: none"> • Green Courier Project which will provide an emissions free delivery service to local businesses and residents in the borough (reducing the need for the use of private vehicles) • Mini Holland various measures aimed at improving cycling and pedestrian infrastructure influencing a shift towards sustainable forms of transportation

		(including optimising deliveries and supply chain), retrofitting public buildings using the RE:FIT framework , integrating no engine idling awareness raising into the work of civil enforcement officers, (etc etc).		<ul style="list-style-type: none"> • Providing assistance to schools in relation to all air quality matters https://thehub.walthamforest.gov.uk/services-and-support/property/air-quality-service • Monthly anti idling days at schools targeting idling vehicles • Air Quality officer attends resident ward forum meetings to discuss projects and air quality matters with local residents • The Council currently has a fleet of cargo bikes which businesses and residents can book for free.
	2.c	Integrated transport and air quality, such as: improving traffic flows on borough roads to	Y	<ul style="list-style-type: none"> • Mini Holland project (refer to points above and http://www.enjoywalthamforest.co.uk/ for details of project)

		reduce stop/start conditions, improving the public realm for walking and cycling, and introducing traffic reduction measures.		
	2.d	Made additional resources available to improve local air quality, including by pooling its collective resources (s106 funding, LIPs, parking revenue, etc).	Y	<ul style="list-style-type: none"> • S106 monies specific for air quality works refer to sections 15.6-15.9 of SPD: https://www.walthamforest.gov.uk/sites/default/files/Revised%20Planning%20Obligations%20SPD_Adopted%20March%202014.pdf • LIP funding has been used on air quality projects such as Mini Holland, and Green Courier Project • CIL monies are now being requested for air quality projects

3. Leading by example	3.a	Invested sufficient resources to complement and drive action from others.	Y	<ul style="list-style-type: none"> The Council currently employs 1 full time Air Quality officer who is dedicated to all matters relating to air quality including driving action as well as devising and delivering air quality projects. A budget specific to this task cannot be provided as its part of the whole Environmental Protection cost centre, however, a total of approximately £90,000 is currently secured for air quality projects, monitoring, etc.
	3.b	Maintained an appropriate monitoring network so that air quality impacts within the borough can be properly understood	Y	<ul style="list-style-type: none"> There are currently 3 automatic monitoring stations monitoring for PM10 and NO2 within the borough and 4 permanent passive diffusion tube locations monitoring for NO2. Projects such as the Mini Holland have contributed to our monitoring network as well; there are an additional 22 diffusion tubes around the borough monitoring NO2 for long term projects. Additionally, any possible new school locations or expansion projects requires a minimum of 6 months of air quality monitoring to assess suitability and design requirements with regards to mitigation measures.
	3.c	Reduced emissions from council operations, including	Y	<ul style="list-style-type: none"> The Council currently does not have specific figures in terms of reductions from council operations however, air quality has been incorporated into our procurement policy as seen in the following document: http://democracy.walthamforest.gov.uk/documents/s45524/WFC124975_Sustainable_procurement_policy_a4_v4.pdf

		from buildings, vehicles and all activities.		<ul style="list-style-type: none"> • The Council will also ensure that all Council fleet operators and contractors are accredited to FORS Gold standard within the next 5 years • The Council's Climate Change Strategy aims to reduce the boroughsCO2 emissions by 80% by 2050. https://www.walthamforest.gov.uk/sites/default/files/waltham-forest-climate-change-strategy.pdf
	3.d	Adopted a procurement code which reduces emissions from its own and its suppliers activities, including from buildings and vehicles operated by and on their behalf (e.g. rubbish trucks).	Y	<ul style="list-style-type: none"> • Air quality has been incorporated into our procurement policy as seen in the following document: http://democracy.walthamforest.gov.uk/documents/s45524/WFC124975_Sustainable_procurement_policy_a4_v4.pdf
4. Using the planning system	4.a	Fully implemented the Mayor's	Y	<ul style="list-style-type: none"> • All approved planning applications are required to comply with the London Plan and National Planning Policy Framework requirements. <p>Currently conditions are put on for:</p> <ul style="list-style-type: none"> - air quality assessments and relevant mitigation measures

		policies relating to air quality neutral, combined heat and power and biomass.		<ul style="list-style-type: none"> - air quality neutral assessments - to demonstrate compliance with emission limits for CHP, biomass and gas boilers - construction management statements - NRMM <p>Refer to Development Management Policies document section 25.5 as confirmation that the Council fully implements the Mayor's policies https://branding.walthamforest.gov.uk/Documents/DMPolicies%20Adoption%20Version%20October%202013.pdf</p>
	4.b	Collected s106 from new developments to ensure air quality neutral development, <i>where possible</i> .	Y	<ul style="list-style-type: none"> • The Council has a specific formula for S106 air quality contributions. Refer to section 15.6-15.9 of our SPD https://branding.walthamforest.gov.uk/Documents/Revised%20Planning%20Obligations%20SPD_Adopted%20March%202014.pdf • Approximately £90,000 is currently secured for air quality projects, monitoring, etc.
	4.c	Provided additional enforcement of construction and demolition guidance, with regular	Y	<ul style="list-style-type: none"> • The Council has a specific construction management condition which is put on all planning applications to control dust and emissions from site and ensure best practice. Reference is made in the condition to the practices listed in Mayor's The Control of Dust and Emissions during Construction and Demolition SPG. • The Council also has a specific condition in relation to compliance with the NRMM requirement which includes signing up to the NRMM registration site. • As part of the North London Cluster Group the Council has also been successful in obtaining MAQ funding for a Shared Enforcement Officer for Construction Sites who will ensure construction sites are using best practice, complying with planning conditions in relation to the control of dust and emissions

		checks on medium and high risk building sites.		from site as well as complying with the NRMM conditions.
5. Integrating air quality into the public health system	5	Included air quality in the borough's Health and Wellbeing Strategy and/or the Joint Strategic Needs Assessment.	Y	<ul style="list-style-type: none"> • Our Joint Strategic Needs Assessment has a section dedicated to Air Quality: https://branding.walthamforest.gov.uk/Documents/JSNA-Report-2014.pdf
6. Informing the public	6.a	Raised awareness about air quality locally.	Y	<ul style="list-style-type: none"> • The Council continues to raise awareness about air quality locally via various public engagement projects such as the Schools anti idling project, Green Courier Projects and Mini Holland project. • Additionally, the Council promotes airText on the Council website (air quality section) and ensures airText is embedded as a key message in any engagement project delivered • The Council is also increasing its air quality presence by presenting our achievements at various events

			such as the Pollution Study Day at CIEH and the ADPH London and LEDNet Air Quality event recently held in March 2017.
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2.1 Air Quality Action Plan Progress

Table K provides a brief summary of the Council’s progress against our draft Air Quality Action Plan, showing progress made this year. New projects which commenced in 2016 are shown at the bottom of the table.

Please note as the majority of the measures in our current AQAP have been met or are no longer applicable, the measures below are from our draft AQAP. Although the document is still in its draft form, the Council has started to deliver some of the measures already thus making it applicable to this Annual Status Report.

Table K. Delivery of Air Quality Action Plan Measures

Measure	Action	Progress	Further information
Reducing Council Emissions		<ul style="list-style-type: none"> • Emissions/Concentration data • Benefits • Negative impacts / Complaints 	
1.1 Reduction in grey fleet usage	Reduce grey fleet usage by 5% annually	<ul style="list-style-type: none"> • Essential user car permits now require a business case to demonstrate need by officer • Council facility parking fees have increased by 600% to deter officers from driving to work 	
1.2 To ensure air quality and	Guidance tool kit to be produced		Toolkit to be produced once draft AQAP is approved

CO2 have a close working relationship in Council run projects and policy			
1.3 Promote Council-run schemes (cycle to work, Drive Now, free cycling training, Pool Bikes, carpooling, season ticket/travel card loan scheme, working from home etc.)	<ul style="list-style-type: none"> • Have one week-long promotion blitz per year. • Ensure Council welcome packs to new employees sign post to these schemes. • Annually assess uptake of schemes. Aim to achieve 2% uptake annually 	<p>The following schemes are currently being promoted with staff:</p> <ul style="list-style-type: none"> • Cycle to work scheme currently on our intranet which allows employees to purchase a bicycle at a discount price • Season ticket/travel card loan scheme which provides interest free loans to employees to buy travel cards and season travel tickets • Promotion of Council pool bikes throughout our facilities. Cycling safety training is provided along with safety equipment such as safety helmets • Free cycle training is being offered to Council staff, local schools, residents and businesses operating in Waltham Forest • The Council have signed up to Liftshare (a carpool site) and promote it within the Councils intranet • The Council is also promoting our air quality services to schools in Waltham Forest: https://thehub.walthamforest.gov.uk/services-and-support/property/air-quality-service 	
1.4 Ensuring air quality is taken into considera	<ul style="list-style-type: none"> • Incorporation of the policy into the procurement system. 	<ul style="list-style-type: none"> • <i>Air quality has been included as a consideration in our Sustainable Procurement Policy:</i> http://democracy.walthamforest.gov.uk/documents/s45524/WFC124975_Sustainable_procurement_policy_a4_v4.pdf • <i>All Council fleet operators and contractors will be accredited</i> 	

<p>tion during any procurement process. This will be achieved by:</p> <p>a. Creating Sustainable Procurement Policy (SPP) and Community Benefits Toolkit (CBT).</p> <p>b. Creating a fuel hierarchy within the procurement system.</p>	<ul style="list-style-type: none"> Annual review of Council owned vehicles and contractor vehicles to track Euro Emission Level. Require Euro 6 or higher and increase in electric, LPG or petrol vehicles and reduction in diesel vehicles with any new purchase or leasing agreements. 	<p><i>to FORS Gold standard within the next 4 years</i></p>	
<p>1.5 Moving Council offices to more central locations with better access to sustainable modes of transportation</p>	<p>Producing a map of current Council offices and assessing the feasibility of consolidating some into areas with better public transport links.</p>	<ul style="list-style-type: none"> The Council's Registry Office is being relocated to the main Town Hall Complex in 2017-2018 Low Hall Depot is scheduled for redevelopment in 2020 	<p>A map of Council office locations still needs to be produced</p>

1.6 To continue to monitor for NO2 and PM10 throughout the borough	Achieving at least 95% data capture at all monitoring stations	<ul style="list-style-type: none"> The Council currently has 3 automatic monitoring stations monitoring for PM10 and NO2. The Council also has 4 permanent diffusion tubes. The Council currently has a network of 18 triplicate diffusion tubes for our Mini Holland project and 4 diffusion tubes for our Selborne Project The Council has purchased a new NOx analyser for its urban background monitoring site and is looking to update the rest of its NOx analysers by 2018 																																																																														
1.7 Install more green infrastructure (trees, green walls, roofs, screens)	Increase green infrastructure by 2% in the borough	<p>Planting borough wide figures:</p> <table border="1" data-bbox="510 603 1352 922"> <thead> <tr> <th>Tree Felling</th> <th>2012/13</th> <th>2013/14</th> <th>2014/15</th> <th>2015/16</th> <th>2016/17</th> <th>Total</th> </tr> </thead> <tbody> <tr> <td>Dead/Dying</td> <td>487</td> <td>302</td> <td>262</td> <td>394</td> <td>436</td> <td>1881</td> </tr> <tr> <td>Insurance</td> <td>48</td> <td>29</td> <td>27</td> <td>35</td> <td>36</td> <td>175</td> </tr> <tr> <td>TOTAL</td> <td>535</td> <td>331</td> <td>289</td> <td>429</td> <td>472</td> <td>2056</td> </tr> <tr> <td>Tree Planting</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>Standard</td> <td>266</td> <td>335</td> <td>332</td> <td>420</td> <td>711</td> <td>2064</td> </tr> <tr> <td>Mini-Holland</td> <td></td> <td></td> <td></td> <td>126</td> <td>159</td> <td>285</td> </tr> <tr> <td>106 Planting</td> <td></td> <td>93</td> <td>101</td> <td>55</td> <td>16</td> <td>265</td> </tr> <tr> <td>Extra Planting</td> <td></td> <td></td> <td>95</td> <td></td> <td>3060</td> <td>3155</td> </tr> <tr> <td>Whips</td> <td>600</td> <td></td> <td></td> <td>800</td> <td>250</td> <td>1650</td> </tr> <tr> <td>TOTAL</td> <td>866</td> <td>428</td> <td>528</td> <td>1401</td> <td>4196</td> <td>7419</td> </tr> </tbody> </table>	Tree Felling	2012/13	2013/14	2014/15	2015/16	2016/17	Total	Dead/Dying	487	302	262	394	436	1881	Insurance	48	29	27	35	36	175	TOTAL	535	331	289	429	472	2056	Tree Planting							Standard	266	335	332	420	711	2064	Mini-Holland				126	159	285	106 Planting		93	101	55	16	265	Extra Planting			95		3060	3155	Whips	600			800	250	1650	TOTAL	866	428	528	1401	4196	7419	<ul style="list-style-type: none"> Figures have been updated to reflect the entire tree planting and felling in the borough. A system to track the installation of green screens, roofs and walls is required.
Tree Felling	2012/13	2013/14	2014/15	2015/16	2016/17	Total																																																																										
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1.8 Implementing green council pool vehicles for officers.	At least five electric, petrol hybrid or petrol cars by 2018.	<ul style="list-style-type: none"> The Council currently has a fleet of pool bikes which staff use 	<ul style="list-style-type: none"> The Council is currently establishing a network of electric vehicle charge points in order to support this measure. The Council used an electric/hydrogen van for the Christmas green courier pilot and is looking to purchase an electric van in 2017 to support the full green courier project and for Council pool vehicle purposes. 																																																																													
Reducing Emissions from																																																																																

Transport			
2.1 Reduce private vehicle usage in the borough	5% reduction by 2020	2010 ownership 78,041 (cars and motorcycles source LAEI) 2011 ownership 77,100 (cars and motorcycles source LAEI) 2012 ownership 78,041 (cars and motorcycles source LAEI) 2013 ownership 77,157 (cars and motorcycles source LAEI) 2014 ownership 78,443 (cars and motorcycles source LAEI) 2015 ownership 80,649 (cars and motorcycles source LAEI)	The LAEI data suggests ownership is not decreasing as expected although it should be noted that: <ul style="list-style-type: none"> • 42% of households in our borough currently do not own a car • In terms of new developments there have been: 32 car free developments in 2013; 25 car free developments in 2014; 37 car free developments in 2015; 31 car free developments in 2016
2.2 Changing the Barking – Gospel Oak line from diesel to electric.	Continued liaison with the GLA and TfL, pushing for electric trains by 2018	Works to electrify the line have commenced and due to be completed next year	As works have commenced, this measure will be removed from the final AQAP.
2.3 Undertake a detailed review of creating ‘no vehicle’ areas/streets	Review to be completed by 2016.	<ul style="list-style-type: none"> • The Mini Holland project has created vehicle restricted areas to reduce through traffic in residential areas. • The Council continues to expand its CPZ’s borough wide. 	This measure will need to be updated depending on whether the ULEZ will be extended to the North/South Circular boundary or to a London wide boundary.
2.4 Assessing the feasibility of creating our own low emission zones.	Assessment to be completed by 2017		The date deadline will be adjusted based on when the AQAP is approved and whether the ULEZ will be extended to the North/South Circular boundary or to a London wide boundary.
2.5 Enforcing anti-idling in pollution hotspot areas	<ul style="list-style-type: none"> • Install anti-idling warning signs • Carry out routine 	<ul style="list-style-type: none"> • The Council adopted anti idling legislation in July 2015 • The Council holds at least 1 anti-idling tasking day per month with volunteers and enforcement officers. • Enforcement tasking days which includes engaging with idling vehicles takes part at least once a month as part of designated 	

	<p>enforcement</p> <ul style="list-style-type: none"> • Adopt the Road Traffic Vehicle Emissions Fixed Penalty Regulations <p>Have at least two anti-idling tasking days per year</p>	tasking days.	
2.6 Reduce NO2 and PM10 emissions from private hire vehicles and black cabs	<ul style="list-style-type: none"> • Participate in the green minicab project currently being trialled by Islington and Hackney • Continue liaising with TfL and the GLA to extend the ULEZ to Waltham Forest 		This measure is likely to be removed from final AQAP as TfL/GLA have created euro standards compliance requirements for black cabs and private hire vehicles.
2.7 Installation of electric vehicle charge points in pollution hotspot areas	At least two electric vehicle charge points with associated parking in Walthamstow, Leytonstone,	<ul style="list-style-type: none"> • Report for charge point installations approved by Portfolio lead, charge points to be installed by 2018. • The Council is part of the successful Go Ultra Low bid which will install electric vehicle charge points throughout London: file:///C:/Users/Home/AppData/Local/Temp/FINAL%20London%20OLEV%20Bid%202015.10.2.pdf 	

	Wood Street, Blackhorse Road, Lea Bridge Road and Chingford areas		
2.8 Improving cycling and pedestrian pathways	Increase cycling uptake in the borough by 10%	<ul style="list-style-type: none"> Mini Holland project is improving cycling and pedestrian infrastructure borough wide and influencing a modal shift from private vehicle usage to more sustainable forms of transportation 	
Reducing Emissions from Businesses and Residents			
3.1 Reducing boiler emissions from commercial and residential	<ul style="list-style-type: none"> All new builds and retrofits to comply with the emission limits in The London Plan's SPG on Sustainable Design and Construction 	<ul style="list-style-type: none"> All new planning applications have a condition put on to ensure boilers NOx emissions do not exceed 40 mg/kWh (0%) and that CHP and biomass emissions do not exceed Band B Emission Standards for Solid Biomass Boilers and CHP Plant as listed in Appendix 7 of the London Plan's Sustainable Design and Construction SPG document. 	
3.2 Ensure that all Part B Installations in the borough maintain the highest standards of air pollution	<ul style="list-style-type: none"> Annual review of emission figures from each permitted process 	This is a statutory function and therefore continues to be delivered	

emission control.			
3.3 To continue to obtain S106 monies for air quality-related projects	<ul style="list-style-type: none"> • Monies to contribute to at least one air quality project per year 	<ul style="list-style-type: none"> • The Council has a specific formula for S106 air quality contributions. Refer to section 15.6-15.9 of our SPD https://branding.walthamforest.gov.uk/Documents/Revised%20Planning%20Obligations%20SPD_Adopted%20March%202014.pdf • S106 air quality money is given annually to help support airText • S106 air quality money is used to help keep our air quality monitoring network running • S106 air quality money was used in September 2016 for an air quality awareness raising event (Healthy Lungs) 	
3.4 To encourage car free and car capped developments in areas with high PTALS.	<ul style="list-style-type: none"> • Developments in PTAL 5 or higher to be discouraged from having parking. 	<ul style="list-style-type: none"> • Policy DM16 of our Development Management Policies (local Plan) states that the Council will seek to effectively manage parking and to ensure the provision of safe and attractive parking facilities by encouraging car-free and car-capped development in locations that are highly accessible by public transport; are accessible to opportunities and services, and/or have high levels of parking stress 	In terms of new developments there have been: 32 car free developments in 2013; 25 car free developments in 2014; 37 car free developments in 2015; 31 car free developments in 2016
3.5 All new developments that do have parking must install one electric vehicle charge point and associated parking space for every five parking spaces	<ul style="list-style-type: none"> • Inclusion of this requirement in the Development Management Policy Document 	<ul style="list-style-type: none"> • Policy DM16 of our Development Management Policies (local Plan) requires that one in five parking spaces (for both active and passive) provide an electrical charging point to encourage the uptake of electric vehicles in accordance with the London Plan 	
3.6 Ensuring business	<ul style="list-style-type: none"> • Ensure new planning 		This action will be modified or removed from the final AQAP as this is not enforceable via Town & Country Planning Act.

<p>freight deliveries in pollution hotspot areas occur during off-peak traffic hours.</p>	<p>applications have conditions specific to delivery times Ensure enforcement action is taken</p>		
<p>3.7 Changing loading parking bay times in main arterial roads to hours outside of peak traffic hours</p>	<ul style="list-style-type: none"> • Ensure enforcement action is taken Changes to occur by 2017 		<p><i>The date deadline will be adjusted based on when the AQAP is approved</i></p>
<p>3.8 Reducing emissions from developments</p>	<ul style="list-style-type: none"> • Ensure every major development has a construction management condition. • Ensure every development over 1000m2 is at least air quality neutral Ensure 	<ul style="list-style-type: none"> • Every new planning application has a construction management condition (when applicable) to control dust and emissions from site • Air quality neutral conditions are put on for all applications that meet the 1000m2 requirement • The Council have received funding from MAQF2 for a Shared Enforcement Officer for Construction Sites who will focus on dust and emission reductions from construction sites as well as compliance with the NRMM regulations 	

	enforcement action is taken		
3.9 Providing a personal travel planner to businesses, residents, and schools	Feasibility assessment and business case to be presented by 2017		The date deadline will be adjusted based on when the AQAP is approved
Increasing Air Quality Awareness			
4.1 Improving our website with regards to air quality information and accessibility for our residents	<ul style="list-style-type: none"> Have at least four out of five rating on the Air Quality Bulletin (an independent reviewer which looks at Local Authority websites in relation to air quality information, content, ease of access, etc.) 	Website has been updated; however there are limitations based on corporate policy. Option to develop a micro-site is being considered.	<i>Dependant on if the AQ Bulletin ranking websites is still being published</i>
4.2 Post air quality information	<ul style="list-style-type: none"> At least one post annually in Waltham 	<ul style="list-style-type: none"> The Council has posted in the WF Newspaper, twitter and website (including microsite) in relation to the Mini Holland project, the Green Courier project and the schools anti-idling project. 	

<p>on council TVs, website, twitter, newspaper and other media currently used to communicate with our residents</p>	<p>Forest News Use council TVs to showcase projects or important bulletins</p>	<ul style="list-style-type: none"> • The Council continues to tweet when air pollution levels are high to advise residents to take action to reduce their exposure. • The schools anti-idling project and key messages are currently projected in Council TV screens in customer waiting areas. • Air quality information and project updates are also provided to resident air quality Facebook groups (ie: Waltham Forest Cares About Clean Air) to post on their pages and update members • The schools anti-idling project has been publicised in the Evening Standard, the Times and the Express <p>http://www.standard.co.uk/news/london/smog-wars-at-the-school-gates-council-tells-school-run-drivers-to-switch-off-cars-or-face-fines-a3505516.html</p> <p>http://www.thetimes.co.uk/edition/news/turn-engines-off-at-schools-parents-told-86w2zmpwk?utm_source=LGiU+Subscribers&utm_campaign=7af8593e6e-EMAIL_CAMPAIGN_2017_04_04&utm_medium=email&utm_term=0_4e47157211-7af8593e6e-199020149</p> <p>http://www.express.co.uk/life-style/cars/787633/parents-driving-fine-school-parking-idling-engine-air-pollution-London</p>	
<p>4.3 Continue partnership working with other Local Authorities, GLA and Defra</p>	<ul style="list-style-type: none"> • At least one bid submission to Defra/GLA etc. per year Continued participation 	<ul style="list-style-type: none"> • 1 bid submitted to Defra in 2016 (not successful) • The Council continues to attend steering group meetings, air quality events and cluster group meetings for both North London and East London Cluster Groups 	

	at LA, GLA and Defra meetings																																																		
4.4 Continue to influence a modal switch from cars to tubes, buses, cycling and walking	<ul style="list-style-type: none"> Annual traffic counts Annual cycling counts Evaluation of Mini Holland outputs	<table border="1"> <thead> <tr> <th>AADFYear</th> <th>PedalCycles</th> <th>Motorcycles</th> <th>CarsTaxis</th> <th>BusesCoaches</th> <th>LightGoodsVehicles</th> </tr> </thead> <tbody> <tr> <td>2010</td> <td>7497</td> <td>14176</td> <td>1012983</td> <td>22579</td> <td>159306</td> </tr> <tr> <td>2011</td> <td>5441</td> <td>13157</td> <td>868275</td> <td>20031</td> <td>143871</td> </tr> <tr> <td>2012</td> <td>5270</td> <td>13931</td> <td>899743</td> <td>20828</td> <td>158380</td> </tr> <tr> <td>2013</td> <td>7318</td> <td>14756</td> <td>935160</td> <td>20211</td> <td>158857</td> </tr> <tr> <td>2014</td> <td>8454</td> <td>17315</td> <td>1076851</td> <td>19327</td> <td>190449</td> </tr> <tr> <td>2015</td> <td>13010</td> <td>18337</td> <td>1000865</td> <td>20624</td> <td>183632</td> </tr> <tr> <td>2016</td> <td>21525</td> <td>21083</td> <td>1021585</td> <td>20692</td> <td>193361</td> </tr> </tbody> </table>	AADFYear	PedalCycles	Motorcycles	CarsTaxis	BusesCoaches	LightGoodsVehicles	2010	7497	14176	1012983	22579	159306	2011	5441	13157	868275	20031	143871	2012	5270	13931	899743	20828	158380	2013	7318	14756	935160	20211	158857	2014	8454	17315	1076851	19327	190449	2015	13010	18337	1000865	20624	183632	2016	21525	21083	1021585	20692	193361	<ul style="list-style-type: none"> Mini Holland team still analysing data and therefore unable to provide figures for this report therefore data derived from DfT AADF data. Although an increase is seen in all transport modes, the most significant increase is seen in pedal/cycles. This increase is likely linked to the Mini Holland infrastructure influencing residents to shift to cycling and walking for short distance trips. Side road rat running is also likely to decrease significantly due to motor vehicle restrictions on these roads, therefore influencing an increase in pedestrian and cycling modes of travel. This will be assessed when the Mini Holland team finalise their count data.
AADFYear	PedalCycles	Motorcycles	CarsTaxis	BusesCoaches	LightGoodsVehicles																																														
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2015	13010	18337	1000865	20624	183632																																														
2016	21525	21083	1021585	20692	193361																																														
4.5 Increase resident uptake of airText	Increase sign up by 2% annually	June 2016-January 2017 – 16 new subscribers November 2015-May 2016 – 12 new subscribers June 2015-October 2015 – 6 new subscribers November 2014-May 2015 – 44 new subscribers March 2014-June 2014 – 6 new subscribers November 2013-February 2014 – 0 new subscribers																																																	
4.6 Continue air quality engagement work with communities, schools, businesses etc.	<ul style="list-style-type: none"> At least one engagement project per year where key outputs are measured at the end of the project. Aim to create projects that 	<ul style="list-style-type: none"> Mini Holland currently delivering various engagement activities with businesses and members of the public. A sustainable transportation legacy will be established as a result of the Mini Holland infrastructure Green Courier project being delivered over the next 3 years will engage with businesses and residents to reduce their pollution contribution Healthy Lungs air quality awareness raising event in September 2016 Schools anti-idling days with enforcement officers and volunteers once a month at a min. of 2 schools 																																																	

	will continue and have their own legacy	<ul style="list-style-type: none"> Produced anti-idling banners and provided to schools in areas of poor air quality and that have requested banners. AQ officer attends regular Council ward forums discussing air quality matters and answering questions with residents and ward councillors. 	
4.7 Increase car free days in key pollution hot spot areas	<ul style="list-style-type: none"> One car free day per town centre per year 	<ul style="list-style-type: none"> Currently have 1 car free day per year in Leytonstone 	Will need to modify this action in final AQAP as car free days have been merged in with other community events.
4.8 Closer working relationship with Public Health linking projects which are relevant to air quality and illnesses impacted by poor air quality	<ul style="list-style-type: none"> At least one joint project per year Ensure air quality continues to be taken into consideration with Public Health decisions / projects/schemes 	<ul style="list-style-type: none"> Air quality is included in the JSNA document AQ officer attended one public health resident/care givers seminar to discuss air quality in 2016 	Bid to Defra to continue the pharmacy project was not successful. Currently seeing if this project can continue with S106 monies.

3. Planning Update and Other New Sources of Emissions

Table L. Planning requirements met by planning applications in London Borough of Waltham Forest in 2016

Condition	Number <i>Please complete all fields in this column with the total numbers</i>
Number of planning applications reviewed for air quality impacts	1463♦
Number of planning applications required to monitor for construction dust	0♦♦
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	1 biomass and 11 CHP/energy centres/decentralised heating networks
Number of AQ Neutral building and/or transport assessments undertaken	29♦♦♦
Number of AQ Neutral building and/or transport assessments not meeting the benchmark and so required to include additional mitigation	3♦♦♦♦
Number of planning applications with S106 agreements including other requirements to improve air quality	11
Number of planning applications with CIL payments that include a contribution to improve air quality	Number of LCIL planning applications in 2016/17: 248 Total amount of Local CIL received in 2016/17: £2,591,673.92 Amount of LCIL spent on air quality in 2016/17: £0
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.	N/A
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	<ul style="list-style-type: none"> - 20 conditions included registered - 7 compliant - 13 unregistered/uncompliant and being chased.

the Directive and/or exemptions to the policy.	
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◆Based on amount of emails received regarding planning matters

◆◆Excludes sites that voluntarily included monitoring as part of their construction management statement

◆◆◆Based on amount of emails received regarding AQ neutral matters. Number likely higher as all developments which provide an AQ assessment also provide an AQ neutral assessment.

◆◆◆◆Based on emails discussing marginal abatement costs

3.1 New or significantly changed industrial or other sources

No new sources identified.

Appendix A Details of Monitoring Site QA/QC

A.1 Automatic Monitoring Sites

The three automatic monitoring sites in the London Borough of Waltham Forest are currently part of the Air Quality England Network operated by Ricardo Energy & Environment. Ricardo Energy & Environment are the current data management providers. The data has traceability to national standards and operational procedures defined for the AURN network. All the monitoring sites are currently audited by Ricardo Energy & Environment. Data from the Council's automatic monitoring data can be found on the following site: <http://www.airqualityengland.co.uk/>

The sites are serviced every six months and are calibrated every 2 weeks by our current service and maintenance provider, Matts Monitors.

PM₁₀ Monitoring Adjustment

Ricardo Energy & Environment add the Volatile Correction Model (VCM) for correction of conventional TEOM PM10 datasets to the Air Quality England web pages. This function automates the VCM process and enables near real time VCM corrected TEOM datasets and statistics to be generated and downloaded. Annually, when AURN FDMS TEOM datasets on which the model is based are ratified, the provisional VCM corrected data will be replaced by ratified VCM corrected datasets.

Ricardo Energy & Environment version of the VCM model follows best practice as advised by Defra and will use available FDMS data as set out within the guidance. For example the model uses the volatile fraction measured by FDMS analysers within a 130 km range where available. This process will correct conventional TEOM measurement to account for the loss of the volatile component of particulate matter due to the high sampling temperatures generated by the TEOM instrument.

A.2 Diffusion Tube Quality Assurance / Quality Control

The Council currently uses Gradko International for the supply and analysis of its diffusion tubes. The tubes are prepared using a 20%TEA/water solution. Gradko International is UKAS accredited and follows the procedures set out in the Practical Guidance.

Refer to <https://laqm.defra.gov.uk/assets/tubeprecision2016version0317finalreducedv2.pdf> for the summary of precision results for nitrogen dioxide diffusion tube collocation studies. Table 1 below

demonstrates Gradko International's performance summary for WASP/AIR quality scheme from April 2013 to February 2015.

Table 1:

The following table lists those UK laboratories undertaking LAQM activities that have participated in recent AIR NO₂ PT rounds and the percentage (%) of results submitted which were subsequently determined to be **satisfactory** based upon a z-score of $\leq \pm 2$ as defined above.

AIR PT Round	AIR PT AR007	AIR PT AR009	AIR PT AR010	AIR PT AR012	AIR PT AR013	AIR PT AR015	AIR PT AR016	AIR PT AR018
Round conducted in the period	April – May 2015	July – August 2015	October – November 2015	January – February 2016	April – May 2016	July – August 2016	September – October 2016	January – February 2017
Aberdeen Scientific Services	100 %	75 %	100 %	100 %	100 %	100 %	100 %	100 %
Cardiff Scientific Services	NR [3]	NR [3]	NR [3]	NR [3]	NR [3]	NR [3]	NR [3]	NR [3]
Edinburgh Scientific Services	100 %	100 %	100 %	100 %	100 %	100 %	100 %	100 %
Environmental Services Group, Didcot [1]	100 %	100 %	100 %	100 %	75 %	75 %	100 %	100 %
Exova (formerly Clyde Analytical)	NR [3]	NR [3]	NR [3]	NR [3]	NR [3]	NR [3]	NR [3]	NR [3]
Glasgow Scientific Services	100 %	100 %	100 %	75 %	100 %	0 %	100 %	100 %
Gradko International [1]	100 %	100 %	100 %	100 %	100 %	100 %	100 %	100 %
Kent Scientific Services	NR [3]	NR [3]	NR [3]	NR [3]	NR [3]	NR [3]	NR [3]	NR [3]
Kirklees MBC	100 %	100 %	100 %	100 %	100 %	100 %	NR [2]	NR [2]
Lambeth Scientific Services	100 %	100 %	100 %	100 %	100 %	100 %	75 %	100 %
Milton Keynes Council	100 %	100 %	100 %	50 %	100 %	100 %	75 %	100 %
Northampton Borough Council	100 %	100 %	100 %	50 %	100 %	NR [2]	75 %	0 %
Somerset Scientific Services	100 %	100 %	100 %	100 %	100 %	100 %	100 %	100 %
South Yorkshire Air Quality Samplers	100 %	100 %	75 %	100 %	100 %	75 %	100 %	100 %
Staffordshire County Council	100 %	75 %	75 %	75 %	75 %	100 %	NR [2]	100 %
Tayside Scientific Services (formerly Dundee CC)	NR [2]	NR [2]	NR [2]	100 %	NR [2]	100 %	NR [2]	100 %
West Yorkshire Analytical Services	75 %	75 %	75 %	75 %	100 %	NR [2]	50 %	100 %

[1] Participant subscribed to two sets of test samples (2 x 4 test samples) in each AIR PT round.

[2] NR No results reported

[3] Kent Scientific Services, Cardiff Scientific Services and Exova (formerly Clyde Analytical) no longer carry out NO₂ diffusion tube monitoring and therefore did not submit results.

Source: <https://laqm.defra.gov.uk/diffusion-tubes/qa-qc-framework.html>

A bias adjustment factor of 0.94 was used to bias adjust the 2016 diffusion tubes. This figure was obtained from the National Diffusion Tube Bias Adjustment Factor Spreadsheet (spreadsheet version number 03/17 V2) provided by Defra. Previous adjustment factors were also derived from the

National Diffusion Tube Bias Adjustment Factor Spreadsheet found on the Defra website: <https://laqm.defra.gov.uk/bias-adjustment-factors/bias-adjustment.html> Bias adjustment factors used in previous years are as follows:

Bias adjustment factors used for previous annual review and assessment reports are as follows:

Year	Bias adjustment factor used	Lab
2010	.85	Bristol Scientific Services
2011	.82	Bristol Scientific Services
2012	.97	Gradko International
2013	.95	Gradko International
2014	.91	Gradko International
2015	.88	Gradko International
2016	.94	Gradko International

All bias adjustment factors were derived from the National Diffusion Tube Bias Adjustment Factor Spreadsheet on the Defra website.

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

A triplicate diffusion tube local co-location study was conducted at our Dawlish Rd urban background automatic monitoring site. As seen in table 2 below, a precision and accuracy check of the local co-location study confirmed good results, however, after reviewing Box 4.10 of the LLAQM technical guidance, the Council has decided to use the National diffusion tube bias adjustment factor. The guidance also states that the national factor is likely to be more reliable which backs our decision to use the national factor.

The Council does regularly submit co-location information to the national diffusion tube study, however, due to difficulties in 2015 meeting data capture rates, the Council ceased submitting figures until 2017 when we were confident in our data capture rates. As such, Waltham Forest is not listed as a participant in the most recent National Diffusion Tube Adjustment Factor Spreadsheet.

A.3 Adjustments to the Ratified Monitoring Data

Short-term to Long-term Data Adjustment

No adjustments have been calculated as Ricardo Energy & Environment conduct all the relevant calculations for their customers.

Appendix B Full Monthly Diffusion Tube Results for 2016

Table N. NO₂ Diffusion Tube Results

Site ID	Valid data capture for monitoring period % ^a	Valid data capture 2016 % ^b	Annual Mean NO ₂												Annual mean – raw data ^c	Annual mean – bias adjusted ^c
			Jan	Feb	March	Apr	May	June	Jul	Aug	Sept	Oct	Nov	Dec		
Chingford	N/A	91.67%	35.35	28.91	23.84	n/a	21.81	22.38	20.42	20.11	30.08	26.84	39.84	48.83	28.95	27.21
Dawlish Rd tube 1	N/A	100%	35.71	39.70	25.79	26.70	25.55	23.89	20.31	19.15	28.66	28.85	43.80	50.58	30.72	28.88
Tube 2	N/A	91.67%	42.73	38.72	24.54	28.80	24.72	22.87	19.76	20.49	28.83	n/a	41.96	49.93	31.21	29.34
Tube 3	N/A	91.67%	40.26	35.94	26.00	24.86	24.38	20.31	20.56	20.81	28.07	n/a	43.15	47.74	30.19	28.38
Leyton	N/A	100%	53.83	50.79	41.09	50.97	43.94	45.27	50.23	45.81	56.50	74.41	70.99	75.86	54.97	51.68
Connaught School	N/A	91.67%	59.17	45.85	37.48	42.89	40.53	40.20	n/a	28.26	43.68	40.52	53.64	68.56	45.53	42.79

Exceedance of the NO₂ annual mean AQO of 40 µgm⁻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%

Appendix C Letter from Council Leader Demonstrating Commitment to Being an Exemplar Borough

Leader's Office
London Borough of Waltham Forest

Boris Johnson
Mayor of London
City Hall
Queen's Walk
London
SE1 2AA

Dear Boris

Becoming a Cleaner Air Borough

As part of the London Borough of Waltham Forest's application to the Mayor's Air Quality Fund, I am writing to confirm that my borough will be signing up to the Cleaner Air Exemplar Borough Criteria (political leadership, taking action, leading by example, informing the public, using the planning system and integrating air quality into public health) and will be actively working towards meeting them.

I look forward to working with you to continue improving air quality in Waltham Forest and London as a whole.

Kind regards

Councillor Chris Robbins
Leader
London Borough of Waltham Forest