

# **London Borough of Enfield Air Quality Annual Status Report for 2018**

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This report provides a detailed overview of air quality in *the London Borough of Enfield* during 2018. It has been produced to meet the requirements of the London Local Air Quality Management statutory process<sup>1</sup>.

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<sup>1</sup> 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 <sub>10</sub>	Particulate matter less than 10 micron in diameter
PM <sub>2.5</sub>	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**

<b>Pollutant</b>	<b>Objective (UK)</b>	<b>Averaging Period</b>	<b>Date<sup>1</sup></b>
Nitrogen dioxide - NO <sub>2</sub>	200 µg m <sup>-3</sup> not to be exceeded more than 18 times a year	1-hour mean	31 Dec 2005
	40 µg m <sup>-3</sup>	Annual mean	31 Dec 2005
Particles - PM <sub>10</sub>	50 µg m <sup>-3</sup> not to be exceeded more than 35 times a year	24-hour mean	31 Dec 2004
	40 µg m <sup>-3</sup>	Annual mean	31 Dec 2004
Particles - PM <sub>2.5</sub>	25 µg m <sup>-3</sup>	Annual mean	2020
	Target of 15% reduction in concentration at urban background locations	3 year mean	Between 2010 and 2020
Sulphur Dioxide (SO <sub>2</sub> )	266 µg m <sup>-3</sup> not to be exceeded more than 35 times a year	15 minute mean	31 Dec 2005
	350 µg m <sup>-3</sup> not to be exceeded more than 24 times a year	1 hour mean	31 Dec 2004
	125 µg m <sup>-3</sup> not to be exceeded more than 3 times a year	24 hour mean	31 Dec 2004

Note: <sup>1</sup> by which to be achieved by and maintained thereafter

## 1. Air Quality Monitoring

### 1.1 Locations

Table B. Details of Automatic Monitoring Sites for 2018

Site ID	Site Name	X (m)	Y (m)	Site Type	In AQM A?	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
ENF1	Bush Hill Park	533881	195832	Urban Background	Y	(8m)	N/A	2.5	NO <sub>2</sub>	Chemiluminescent
ENF 4	Derby Road (2)	535056	192470	Roadside	Y	(32m)	3m	2.5	NO <sub>2</sub> , SO <sub>2</sub>	Chemiluminescent
ENF5	Bowes Road (3)	529893	192224	Roadside	Y	(1m)	3m	2.5	NO <sub>2</sub> , PM <sub>10</sub>	Chemiluminescent FDMS
ENF7	Prince of Wales School	536886	198497	Urban Background	Y	(4m)	N/A	1.5	NO <sub>2</sub>	Chemiluminescent

**Table C. Details of Non-Automatic Monitoring Sites for 2018**

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)
Enfield 1	Enfield 1	X 532668	Y 196555	<i>Kerbside</i>	Y	5	1	2.5	NO <sub>2</sub>	N
Enfield 2	Enfield 2	X 529753	Y 194332	<i>Kerbside</i>	Y	5	1	2.5	NO <sub>2</sub>	N
Enfield 3	Enfield 3	X 531981	Y 195305	<i>Roadside</i>	Y	10	1	2.5	NO <sub>2</sub>	N
Enfield 4	Enfield 4	X 530966	Y 192714	<i>Roadside</i>	Y	5	1	2	NO <sub>2</sub>	N
Enfield 5	Enfield 5	X 534238	Y 196314	<i>Roadside</i>	Y	15	1	2	NO <sub>2</sub>	N
Enfield 6	Enfield 6	X526449	Y 198404	Urban background	Y	1	8	2	NO <sub>2</sub>	N
Enfield 7	Enfield 7	X 535460	Y 199849	Roadside	Y	10	20	1.5	NO <sub>2</sub>	N

Enfield 8	Enfield 8	X 534195	Y 192806	<i>Kerbside</i>	Y	10	1	2.5	NO <sub>2</sub>	N
Enfield 9	Enfield 9	X 529945	Y 192118	<i>Urban Background</i>	Y	1	5	1.5	NO <sub>2</sub>	N
Enfield 10	Enfield 10	X 530150	Y 190007	<i>Urban Background</i>		1	8	1.8	NO <sub>2</sub>	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<sub>2</sub> Ratified and Bias-adjusted Monitoring Results (µg m<sup>-3</sup>)**

Site ID	Site type	Valid data capture for monitoring period % <sup>a</sup>	Valid data capture 2018 % <sup>b</sup>	Annual Mean Concentration (µg m <sup>-3</sup> )						
				2012 <sup>c</sup>	2013 <sup>c</sup>	2014 <sup>c</sup>	2015 <sup>c</sup>	2016 <sup>c</sup>	2017 <sup>c</sup>	2018 <sup>c</sup>
ENF1	Automatic		100	38	30	33	27	28	26	26
ENF4	Automatic		99	<b>43</b>	<b>44</b>	<b>44</b>	46	<b>43</b>	38	35
ENF5	Automatic		99	<b>49</b>	<b>46</b>	<b>42</b>	46	<b>47</b>	44	<b>44</b>

Site ID	Site type	Valid data capture for monitoring period % <sup>a</sup>	Valid data capture 2018 % <sup>b</sup>	Annual Mean Concentration ( $\mu\text{g m}^{-3}$ )						
				2012 <sup>c</sup>	2013 <sup>c</sup>	2014 <sup>c</sup>	2015 <sup>c</sup>	2016 <sup>c</sup>	2017 <sup>c</sup>	2018 <sup>c</sup>
ENF7	Automatic		98	31	27	25	24	25	23	23
Enfield 1	Diffusion tube		92	<b>44.2</b>	<b>43</b>	32	29.1	37.8	32.4	<b>46.2</b>
Enfield 2	Diffusion tube		100	36.9	34.6	29.9	25.9	32.1	30	36.9
Enfield 3	Diffusion tube		100	23.9	28.3	27.9	21.8	27.3	23.2	27.9
Enfield 4	Diffusion tube		100	21.9	26.4	21.6	17.9	22.4	20.8	30.2
Enfield 5	Diffusion tube		100	30.1	35.4	36.7	28.9	32.8	24.5	<b>42.6</b>
Enfield 6	Diffusion tube		100	18.8	22.5	24.9	17.2	20.5	19.1	19.2
Enfield 7	Diffusion tube		100	31.1	38.1	32.4	25.7	33.9	27.6	22.8
Enfield 8	Diffusion tube		100	<b>40.3</b>	<b>48.9</b>	37.8	36.6	<b>41.3</b>	37.9	<b>48.9</b>
Enfield 9	Diffusion tube		100	<b>44.5</b>	<b>54.6</b>	<b>43.1</b>	39.2	<b>51</b>	27	26
Enfield 10	Diffusion tube		92	N/A	N/A	N/A	N/A	N/A	N/A	36.5

Notes: Exceedance of the NO<sub>2</sub> annual mean AQO of 40  $\mu\text{g m}^{-3}$  are shown in **bold**.

NO<sub>2</sub> annual means in excess of 60  $\mu\text{g m}^{-3}$ , indicating a potential exceedance of the NO<sub>2</sub> hourly mean AQS objective are shown in bold and underlined.



<sup>a</sup> data capture for the monitoring period, in cases where monitoring was only carried out for part of the year

<sup>b</sup> 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%)

<sup>c</sup> Means should be “annualised” in accordance with LLAQM Technical Guidance, if valid data capture is less than 75%

Diffusion tube sites ENF1,2,3,4,5,6,8 and 9 were changed in January 2018 so the results should not be used for trends in comparison to previous years. ENF 6 and 7 remain the same and ENF10 is new.

**Table E. NO<sub>2</sub> Automatic Monitor Results: Comparison with 1-hour Mean Objective**

Site ID	Valid data capture for monitoring period % <sup>a</sup>	Valid data capture 2018 % <sup>b</sup>	Number of Hourly Means > 200 µg m <sup>-3</sup>							
			2012 <sup>c</sup>	2013 <sup>c</sup>	2014 <sup>c</sup>	2015 <sup>c</sup>	2016 <sup>c</sup>	2017 <sup>c</sup>	2018 <sup>c</sup>	
ENF 1		100	0	0	0	0	0	0	0	0
ENF4		99	0	0	0	0	1	0	0	0
ENF5		99	24	0	0	1	6	3	0	0
ENF7		98	0	0	0	0	0	0	0	0

Notes: Exceedance of the NO<sub>2</sub> short term AQO of 200 µg m<sup>-3</sup> over the permitted 18 days per year are shown in **bold**.

<sup>a</sup> data capture for the monitoring period, in cases where monitoring was only carried out for part of the year

<sup>b</sup> 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%)

<sup>c</sup> Means should be “annualised” in accordance with LLAQM Technical Guidance, if valid data capture is less than 75%

**Table F. Annual Mean PM<sub>10</sub> Automatic Monitoring Results (µg m<sup>-3</sup>)**

Site ID	Valid data capture for monitoring period % <sup>a</sup>	Valid data capture 2018 % <sup>b</sup>	Annual Mean Concentration (µg m <sup>-3</sup> )						
			2012 <sup>c</sup>	2013 <sup>c</sup>	2014 <sup>c</sup>	2015 <sup>c</sup>	2016 <sup>c</sup>	2017 <sup>c</sup>	2018 <sup>c</sup>
ENF4	N/A	N/A	27	31	31	31	N/A	27	N/A
ENF5	88	88	24	22	21	19	22	24	18

Notes: Exceedance of the PM<sub>10</sub> annual mean AQO of 40 µg m<sup>-3</sup> are shown in **bold**.

<sup>a</sup> data capture for the monitoring period, in cases where monitoring was only carried out for part of the year

<sup>b</sup> 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%)

<sup>c</sup> Means should be “annualised” in accordance with LLAQM Technical Guidance, if valid data capture is less than 75%

**Table G. PM<sub>10</sub> Automatic Monitor Results: Comparison with 24-Hour Mean Objective**

Site ID	Valid data capture for monitoring period % <sup>a</sup>	Valid data capture 2018 % <sup>b</sup>	Number of Daily Means > 50 µg m <sup>-3</sup>						
			2012 <sup>c</sup>	2013 <sup>c</sup>	2014 <sup>c</sup>	2015 <sup>c</sup>	2016 <sup>c</sup>	2017 <sup>c</sup>	2018 <sup>c</sup>
ENF4	N/A	N/A	15	28	21	6	N/A	N/A	<b>N/A</b>
ENF5	88	88	16	4	11	1	10	9	2

Notes: Exceedance of the PM<sub>10</sub> short term AQO of 50 µg m<sup>-3</sup> over the permitted 35 days per year or where the 90.4th percentile exceeds 50 µg m<sup>-3</sup> 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.

<sup>a</sup> data capture for the monitoring period, in cases where monitoring was only carried out for part of the year

<sup>b</sup> 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%)

<sup>c</sup> Means should be “annualised” in accordance with LLAQM Technical Guidance, if valid data capture is less than 75%

**Table H. SO<sub>2</sub> Automatic Monitor Results: Comparison with Objectives**

Site ID	Valid data capture for monitoring period % <sup>a</sup>	Valid data capture 2018 % <sup>b</sup>	Number of: <sup>c</sup>		
			15-minute means > 266 µg m <sup>-3</sup>	1-hour mean > 350 µg m <sup>-3</sup>	24-hour mean > 125 µg m <sup>-3</sup>
ENF4		99	0	0	0

Exceedances of the SO<sub>2</sub> AQOs are shown in **bold** (15-min mean = 35 allowed a year, 1-hour mean = 24 allowed a year, 24-hour mean = 3 allowed / year)

<sup>a</sup> data capture for the monitoring period, in cases where monitoring was only carried out for part of the year

<sup>b</sup> 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%)

<sup>c</sup> Means should be “annualised” in accordance with LLAQM Technical Guidance, if valid data capture is less than 75%

## **2. Action to Improve Air Quality**

### **2.1 Air Quality Action Plan Progress**

Table J provides a brief summary of *Enfield Council's* progress against the Air Quality Action Plan, showing progress made this year. New projects which commenced in 2018 are shown at the bottom of the table.

**Table J. Delivery of Air Quality Action Plan Measures**

<b>Measure</b>	<b>Action</b>	<b>Progress</b>	<b>Further information</b>
Seek the integration of the Enfield AQAP with the LDF and ensure that all development proposals with the	Environmental Health are consulted on all planning applications which will have an environmental impact.	<ul style="list-style-type: none"> <li>• Emissions/Concentration data</li> <li>• Benefits</li> <li>• Negative impacts / Complaints</li> </ul> Environmental Health are required to respond to 90% of allocated planning consultations within the 21 day period every year. For the year 2018 we responded to 100% of consultations on time.	

<p>potential to exert an impact on the Enfield AQMA continue to be assessed for air quality impacts and where permissible, appropriate mitigation measures are provided.</p>	<p>In 2018 Environmental Health responded to 469 planning consultations and requested planning conditions to protect air quality where appropriate. Equally objections were also made where applications would negatively impact upon the local environment and could not be mitigated by conditions.</p>		
<p>Continue and enhance joint working within the Council to encourage the integration of air quality within existing and future Council strategies</p>	<p>Environmental Health has strong links with Highways Services, Development Control, Transportation Planning and Fleet Services among other departments.</p>	<p>Air quality forms part of the transportation planning and has been an important factor in the implementation of Cycle Enfield during the consultation period. The aim for Cycle Enfield is to achieve a 5% reduction in cars along the routes.</p> <p>Air pollution is incorporated into both the public health strategy and it forms part of the agenda for the monthly Public Health Delivery meeting.</p> <p>The Enfield 2020 is the Council's carbon reduction strategy and local air quality management actions form part of the document. As part of this we provide data on performance indicators within the strategy.</p>	

Continue to integrate the Enfield Transport Strategy with the Enfield AQMA and so seek the improvement of air quality.	The links forged with Transportation Planning mean that air quality is an important consideration in the preparation of any transport strategies.	Joint working has led to the implementation of air quality projects such as the green wall, which is now being extended to 2 other schools in the borough. Joint working on the Anti-Idling campaign in 2018/19 has led to 2 action days taking place.	
Effectively monitor and manage existing network and smooth traffic flow through the adjustment of traffic signal timings and the introduction of traffic signal efficiency technology.	The approved congestion management strategy makes provision for improving traffic flow	Annually monitored in terms of delays on 25 most congested links in the AM peak and PM peak.	
Co-ordinate street works to reduce delays and disruption.	London permit scheme implemented in Enfield to reduce congestion	GLA scheme and monitored by TfL.	
Work with TfL to improve strategic roads, particularly the A406 North Circular.	No progress at this time, Council position under consideration, reconsidering policy		
Improve key junctions on the A1055 and other strategic routes.	Part of the LIP programme as approved in Jan 2012	The improvements to the A1055 have been completed.	

Introduce and enforce proportionate waiting and loading restrictions.	Waiting and loading restrictions are in place throughout the borough	Parking enforcement enforce the restrictions, issuing fixed penalty notices where necessary	
Continue to provide road safety education and training for pedestrians and cyclists of all ages.	Enfield Council has developed a Cycle Strategy and Action Plan. One to one training sessions are on offer to all borough residents over the age of ten who live, work or study in Enfield. Those younger than ten will be able to get cycle training at school.	Cycling training will improve rider confidence and encourage more cycling therefore reducing reliance on the car for short journeys.  Cycle Enfield has made this action highly important and the Council is committed to safe cycling.	<a href="http://cycleenfield.co.uk/category/cycling-events/cycle-training/">http://cycleenfield.co.uk/category/cycling-events/cycle-training/</a>  In 2018, 5740 young people received cycle training and 350 adults
With the health services, undertake local promotional and marketing campaigns and events to encourage people to walk and cycle more.	Bike workshops are on offer to borough residents. These workshops include basic maintenance and cycling skills. A scheme has been set up to allow residents to borrow a bike for a month for £10.	There are Sunday rides being run which allow people to have a guided cycle around the borough; they are on the second Sunday of every month. There are also cycle kills courses, maintenance classes and Dr Bike cycle checks.	<a href="http://cycleenfield.co.uk/category/cycling-events/sunday-bike-rides/">http://cycleenfield.co.uk/category/cycling-events/sunday-bike-rides/</a>  <a href="http://cycleenfield.co.uk/category/cycling-events/cycle-maintenance-classes/">http://cycleenfield.co.uk/category/cycling-events/cycle-maintenance-classes/</a>  <a href="http://cycleenfield.co.uk/activities/cycleskills/">http://cycleenfield.co.uk/activities/cycleskills/</a>  <a href="http://cycleenfield.co.uk/activities/drbike/">http://cycleenfield.co.uk/activities/drbike/</a>
Increase the cycling network to eliminate gaps and ensure continuity, plus increase access,	Enfield Council has developed a Cycle Strategy and Action Plan. As part of the action plan the cycle	Cycle Enfield build has begun. The Green Lanes section has been completed and sections in Ponders End have also been completed.	<a href="http://cycleenfield.co.uk/">http://cycleenfield.co.uk/</a>

essential services, employment opportunities, green spaces and leisure services.	routes throughout the borough will be improved to encourage more cycling.	The A1010 South Scheme is under construction and the A1010 North Scheme is due to start in late 2019.  The latest data for Cycle Enfield shows that between June 2018-June 2019 there were 110,000 cycle journeys.	
Work with businesses to promote and support the development of Travel Plans and take up of the Cycle to Work Guarantee.	Travel planning through Council action is aimed at schools and Council staff	There is a school travel planning officer who works with all schools in the borough regarding their travel plans.	
Working with the Lee Valley Regional Park Authority to improve facilities and infrastructure for cycles and pedestrians.	Routes through the parks have improved and new signage has also been implemented	The new signage makes it clearer where the routes through the Lee Valley Park are located.	
Standardise, improve and update walking and cycling route signing, provision of maps, lighting, and disabled access on the pedestrian network.	Cycle Enfield will lead to the implementation of cycling signs.	With the advent of Cycle Enfield standardised signs for cycle routes will be prominent throughout the borough.	



<p>Develop a high quality network of 'Greenway' cycle and walking routes using parks, open spaces, quiet traffic routes, and 20mph zones.</p>	<p>Cycle Enfield sets out strategic dedicated cycle routes throughout the borough. Green routes can be found through all parks. 20mph Cycle zones have been introduced</p>	<p>The Green Lanes section is complete, as are sections in Ponders End.</p> <p>A new section of walk/cycleway has been opened between Little Bury Street and Latymer Road. This links Edmonton to Winchmore Hill.</p> <p>Greenways are signposted in the borough's parks.</p> <p>A number of roads containing schools have 20 mph zones implemented, a wider strategy is being considered.</p>	
<p>Increase provision of secure and sufficient cycle parking in major centres, at or within easy reach of every public building and cycling generator.</p>	<p>Cycling facilities are implemented as part of Cycle Enfield</p>	<p>As part of the scheme design cycle parking facilities will be improved to allow safe storage of bikes. Good facilities already exist in Enfield Town Centre and by the Civic centre. New cycle parking hubs have been installed close to Enfield Town Station and Edmonton Green Station.</p> <p>Residential bike hangers, which provide storage for bikes have been installed in several locations, including Winchmore Hill and Palmers Green. 20 have been installed in various locations with another 15 planned for 2019/20.</p>	<p><a href="http://cycleenfield.co.uk/plans/cycleparking/">http://cycleenfield.co.uk/plans/cycleparking/</a></p>
<p>Review CPZ coverage on a regular basis and consult with residents over local needs in areas with</p>	<p>LIP funded programme to improve current CPZs and facilitate creation of new CPZs</p>	<p>There are now 15 CPZs in the borough.</p>	<p><a href="https://new.enfield.gov.uk/services/parking/controlled-parking-zones/">https://new.enfield.gov.uk/services/parking/controlled-parking-zones/</a></p>

high levels of parking stress.			
Improve management of parking better to reduce congestion; improve safety; and ensure a turnover of spaces to help maintain the viability of town centres.	The management of parking is controlled by parking wardens and Cycle Enfield will impact upon levels of road traffic	FPNs are issued where infringement of parking regulations has occurred. The penalty is at a level designed to deter illegal and unsafe parking.  By reducing car use Cycle Enfield will reduce congestion in Palmers Green, Winchmore Hill, Enfield Town and Edmonton Green.	
Prioritise enforcement to achieve our parking management aims.	Parking Enforcement has a high number of Enforcement Officers ensuring all parking restrictions are enforced.	FPNs are issued where infringement of parking regulations has occurred. The penalty is at a level designed to deter illegal and unsafe parking.  An enforcement vehicle with cameras tours the borough thereby increasing the area covered by enforcement officers. This is in addition to the enforcement officers on scooters.	
Improve bus reliability and journey times with new bus priority measures.	2 routes 191, 259 are being made more reliable by work on the route on parking controls, improvement of pinch points and priority maintenance	This is a LIP target and is an ongoing action.	
Lobby for new services in areas with poor public transport and plan for new services in	The Council will continue to lobby TfL to improve public transport throughout the borough to ensure		

areas to support future growth.	comprehensive coverage of the borough.		
Lobby for the introduction of low emission vehicles and fuel in hot spots of poorest air quality.	<p>The Council has lobbied TfL to have the cleanest buses along the most polluted routes through the borough.</p> <p>The Council intends to install electric charging points in residential roads and town centres.</p>	The Council has initiated a program of electric charging point replacement. have been replaced in 2018.	
Encourage the creation of an environment in and around schools, which promotes sustainable travel through the provision of safer routes.	Schools in Enfield are encouraged to develop a School Travel Plan (STP). STP's encourage safe and sustainable modes of travel to school, such as walking and cycling. As a result air pollution and traffic congestion are reduced and students benefits from healthier and active lifestyles.	<p>The Council has a School Travel Planning Officer who works with schools throughout the borough to develop school travel plans which are designed to increase sustainable travel to and from schools.</p> <p>77% of schools have sustainable travel plans.</p>	<p>48 schools have gold level STARS</p> <p>1 school has silver level STARS</p> <p>2 have bronze level STARS</p> <p>2 schools are engaged</p>
Establish "Road Rangers" in primary schools to promote road safety and sustainable travel to school.	The Road Rangers scheme has now developed into 'Junior Road Safety Officers		

<p>Make cycle training to national standards freely available to all school age pupils.</p>	<p>Enfield Council has developed a Cycle Strategy and Action Plan. Among the action points are cycle training for schools and cycle promotional programmes in schools</p>	<p>Cycle training is offered to year groups 3, 4, 5 and 6. Years 3 &amp; 4 cover Bikeability level 1. Years 5 &amp; 6 cover Bikeability levels 1 &amp; 2, which includes on road training in small groups. The cycle training usually takes place during schools hours, though after school or holiday sessions are also be provided. In secondary schools training is given to small groups rather than being based on year groups.</p>	
<p>Improve cycle routes to schools and support initiatives in school to motivate children to take up cycling.</p>	<p>Enfield Council has developed a Cycle Strategy and Action Plan. As part of the action plan the cycle routes throughout the borough will be improved to encourage more cycling, this includes the routes around schools.</p>	<p>The uptake of cycling is linked in to the school travel plans.</p> <p>The implementation of cycle Enfield will also provide a greatly increased set of cycle routes which will allow safe cycling to schools and therefore lead to an increase in children cycling to school.</p>	<p><a href="http://cycleenfield.co.uk/">http://cycleenfield.co.uk/</a></p>
<p>Implement a scheme promoting public awareness of the Enfield AQMA using signage and information where appropriate.</p>	<p>Information regarding air quality management is on the Council's website</p>	<p>The website informs the public about the AQMA.</p>	<p><a href="https://new.enfield.gov.uk/services/environment/environmental-issues/pollution/">https://new.enfield.gov.uk/services/environment/environmental-issues/pollution/</a></p>
<p>Promote green travel plans via planning agreements and other liaison with businesses. The</p>	<p>All major developments are required to submit a Travel Plan.</p>	<p>This is a standard condition attached to planning permissions for major developments.</p>	

<p>Council will normally require major new developments to adopt a Travel Plan as a condition of planning permission.</p>			
<p>Support the expansion of car clubs and encourage their use of ultra-low carbon vehicles.</p>	<p>Car clubs are readily available in Enfield. The Council has had discussions with Zipcar about creating bays for car clubs.</p>	<p>In May 2013 The Council made The Enfield (Car Club) (Parking Places) (Amendment No. 1) Experimental Traffic Order 2013; and (b) The Enfield (Residents' Parking Places) (Enfield Town)(Amendment No.2) Experimental Traffic Order 2013; under sections 9 and 10 of the Road Traffic Regulation Act 1984, as amended. This order creates parking spaces for Car Club vehicles in the Borough.</p>	
<p>If it can be proven that proposals for development are likely to significantly increase traffic flows, and thereby significantly increase NO<sub>2</sub> within the Enfield AQMA, then the Council, as Planning Authority, will refuse planning permission.</p>	<p>All planning applications are judged on their merits. Where a proposal would significantly increase NO<sub>2</sub> levels Environmental Health would put in a detailed objection to the application for planning permission stating the borough's air quality issues and clearly stating why the development would be unacceptable.</p>	<p>To date there have been no applications which will significantly increase NO<sub>2</sub> levels in the borough. This is demonstrated through air quality assessments submitted as part of planning applications.</p>	

<p>Conditions will be imposed on any new residential development within the AQMA to mitigate the impact of poor air quality.</p>	<p>All developments likely to have a negative impact upon air quality have suitable mitigation conditions attached to them.</p> <p>All developments in an area where the air quality objectives are exceeded are required to have measures installed to protect residents.</p>	<p>To date there have been no new developments that have had a detrimental impact upon air quality. Any developments which do negatively impact upon air quality will have conditions imposed to reduce the impact.</p> <p>There have been several developments in the borough that have had alternative ventilation installed to allow residents to ventilate their properties without having to open windows.</p>	
<p>Plant trees along streets to improve the urban environment.</p>	<p>A planting programme is in place</p>	<p>The improvements to air quality through this measure are not quantifiable in terms of ug/m<sup>3</sup></p> <p>The green wall project results showed that the wall reduced nitrogen dioxide concentrations by 22% comparing the roadside to the playground side. A further 2 schools will be offered green walls this year.</p>	<p>As the green wall project had a positive effect on nitrogen dioxide concentrations we will extend the project to other schools close to busy roads.</p> <p>We are in discussion with another school regarding installing a green wall.</p>
<p>Promote the use of lower carbon modes and eco-driving practices.</p>	<p>Information on car sharing and eco-driving practices are all on the Council's website. Low carbon modes are tied into the Council's work to promote walking and cycling.</p>	<p>It is not possible to quantify how successful the advertising on the website is. Council drivers are given training on eco-driving practices to ensure we lead by example. Council staff have been required to complete online driver training courses in an attempt to improve driving techniques.</p>	
<p>Install publicly accessible electronic</p>	<p>There are currently 9 publicly accessible electronic charging</p>	<p>The Council has initiated a program of electric charging point replacement. 3 have been replaced this year.</p>	

charging points at key locations.	points, most of which are dual recharging points allowing 2 cars to recharge at the same time.		
The Council will seek to maintain and where appropriate increase its air quality monitoring in and around the Enfield AQMA.	The Council has 4 real-time monitoring stations which are representative of roadside and background locations. There are also 9 diffusion tube sites	The data generated by the monitoring stations has been used for all of the Council's review and assessment documents.  Following comments from the GLA in January on the previous ASR diffusion tube sites have been reallocated to monitor areas identified as 'hotspots' by the GLA. The data in this report reflects the different site locations.	
Continued enforcement of industrial emissions by the Council to ensure compliance with the Pollution Prevention Control Act (Part A2 and B installations).	The Council currently has 101 Part B processes all of which are inspected on a risk basis.	All inspections due in 2017/18 were completed with compliance by the businesses at 100%. 46 inspections were completed.	
Continued enforcement by the Council of emissions to ensure compliance with Clean Air Act 1993.	The Council is statutorily required to enforce the provisions of the Clean Air Act and has officers who fulfil this function.	Complaints which affect air quality are dealt with quickly and effectively.	A project has been set-up to monitor all charcoal grill restaurants as they are generating complaints regarding both smoke and odour and current abatement technology does not seem to be sufficient to control smoke from charcoal grilling.
Continued enforcement by the Council of statutory	The Council is statutorily required to investigate nuisance complaints and	Nuisance complaints which affect air quality are dealt with quickly and effectively.	

<p>nuisances that give rise to emissions in contravention of Environmental Protection Act 1990 (Part 3).</p>	<p>has officers dedicated to this function.</p>		
<p>The Council will promote the Best Practice Guidance on “The control of dust and emissions from construction and demolition” (produced by London Councils) to seek to ensure that building contractors minimise emissions.</p>	<p>Environmental Health comment on all applications involving construction/demolition and attach a condition requiring a construction management plan written in accordance with the Mayor of London’s Best Practice Guidance.</p>	<p>Construction dust from sites is properly controlled and air quality is ingrained into site management.</p> <p>On larger development sites we require a construction management plan written in line with the Mayor of London’s Supplementary Planning Guidance 'The Control of Dust and Emissions During Construction and Demolition'.</p> <p>As part of the MAQF Enfield is participating in the London-wide project to control emissions from construction sites.</p>	
<p>The Council will undertake a programme of improvements to Council buildings to improve insulation and environmental building controls, and reduce carbon emissions.</p>	<p>Through the Enfield 2020 Action Plan the council is on track to meet its target of a 25% reduction in its carbon dioxide emissions, as compared to a 2008/09 baseline. The council has invested through both the Salix Recycling Fund and the REFIT projects to improve the</p>	<p>1. Salix Recycling Fund</p> <ul style="list-style-type: none"> <li>• Operated since 2010 as part of the Council’s energy retrofitting programme</li> <li>• Total Salix programme has now invested just over £1 million on more than 90 energy saving projects at 46 different sites</li> <li>• Projects installed include lighting upgrades and movement sensors, draught proofing, boiler management controls, pipework and building insulation, voltage optimisation units and variable speed drives</li> </ul>	



	<p>energy performance of its buildings. The council is also delivering New Ways of Working. Again under the Enfield 2020 Sustainability Programme, this project is reducing the amount of office space required through a combination of remote working, hot desking and mobile working.</p>	<ul style="list-style-type: none"> <li>• Projects are making annual energy savings of over £225,000 and saving over 1,100 tonnes of CO2 each year with overall pay back in 4.5 years</li> <li>• The fund is likely to last another 10 years</li> </ul> <p>2. RE:FIT Framework</p> <ul style="list-style-type: none"> <li>• Invested £1.7 million in 3 corporate buildings and 11 schools</li> <li>• Projects installed in 2013/14 include lighting upgrades, boiler management controls, pipework and building insulation, air handling units</li> <li>• Saving £240k per year</li> <li>• Overall payback of 7 years</li> </ul> <p>3. Solar PV</p> <ul style="list-style-type: none"> <li>• In November 2016, the Council completed its solar photo-voltaic panel programme on the roofs of five corporate buildings</li> <li>• Total programme cost £65,000</li> <li>• Annual energy savings of £4,500</li> <li>• PV panels are generating 42,000 kWh per year</li> <li>• Saving 21 tonnes of CO2 savings per year</li> <li>• Overall programme payback of 10.9 years</li> </ul>	
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<p>Support SuDS and Green Infrastructure projects across the borough in line with objectives highlighted in the Local Flood Risk Management Strategy.</p>	<p>Firs Farm wetlands are complete as are the wetlands along the A10.</p>	<p>The effect of this planting on air pollution is not measurable.</p>	
<p>Identify funding opportunities for monitoring air quality benefits of Green Infrastructure</p>	<p>There has been a green wall project at Bowes Primary School.</p>	<p>The green wall project results showed that the wall reduced nitrogen dioxide concentrations by 22% comparing the roadside to the playground side. 2 schools will be selected to be offered the installation of a green wall.</p>	<p>As the green wall project had a positive effect on nitrogen dioxide concentrations we will extend the project to other schools close to busy roads.</p>

### 3. Planning Update and Other New Sources of Emissions

**Table K. Planning requirements met by planning applications in the London Borough of Enfield in 2018**

Action	Number	Notes
a) Number of planning applications where an air quality impact assessment was reviewed for air quality impacts	25	
b) Number of planning applications required to monitor for construction dust	<u>41</u>	
c) Number of CHPs/Biomass boilers refused on air quality grounds	<u>0</u>	
d) Number of CHPs/Biomass boilers subject to GLA emissions limits and/or other restrictions to reduce emissions	<u>0</u>	<u>All applications demonstrated that emissions from CHP would not cause any exceedences of air quality objectives</u>
e) Number of developments required to install Ultra-Low NO <sub>x</sub> boilers	<u>0</u>	
f) Number of developments where an AQ Neutral building and/or transport assessments undertaken	<u>22</u>	
g) Number of developments where the AQ Neutral building and/or transport assessments not meeting the benchmark and so required to include additional mitigation	<u>0</u>	

h) Number of planning applications with S106 agreements including other requirements to improve air quality	<u>0</u>	
Number of planning applications with CIL payments that include a contribution to improve air quality	<u>0</u>	
<b>NRMM: Greater London (excluding Central Activity Zone and Canary Wharf)</b> 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 <a href="http://www.nrmm.london">www.nrmm.london</a> and that all NRMM used on-site is compliant with Stage IIIA of the Directive and/or exemptions to the policy.	<i>28 conditions included</i>	<i>Compliance checked by NRMM officer, issue raised with 2 sites and plant changed</i>

We recognise that this table has been difficult for some boroughs to complete, either because planning data is not collected or not collected in a form that is easily translatable into the table. The purpose of each row in the table is to assess implementation of GLA planning or policies. An additional column has been added for notes where you can note any qualifications to the data or local policies that are relevant (e.g. use of standard conditions).

Notes on the table:

- a. The purpose of this row is to identify whether all applications that are submitted with an air quality assessment or EIA are checked by the air quality officer/team. The requirement to submit an assessment is subject to local validation criteria, however the new London Plan specifies that all major developments should be accompanied by an assessment, so this should equal at least the number of major applications received once the new London Plan is finalised.
- b. The purpose of this row is to understand how widely active dust monitoring is used on construction sites. Dust monitoring is recommended in the GLA Control of Dust and Emissions during Construction and Demolition SPG for some high-risk sites. This number should include all sites where monitoring is required by condition or secured as part of a construction management plan or similar.

- c. This purpose of this row is to understand how far air quality policies are influencing the design or choice of communal heating systems. For the purposes of recording, “refused” should include applications where air quality impacts from the heating system are included in the reasons for formal refusal and applications where the energy strategy has been revised post-submission to remove CHP or biomass as a result of air quality concerns raised during the decision-making process.
- d. The purpose of this row is to ensure that the emissions limits for CHP and Biomass set out in Appendix 7 of the GLA Sustainable Design and Construction SPG are implemented. You should only count instances where compliance with these limits (or tighter limits, if required) have been secured by condition. You may want to note instances where conditions have not been imposed in the notes column.
- e. This row should record the number of planning permissions where use of ultra-low NO<sub>x</sub> boilers were required as a direct condition or as a condition securing conformity with submitted documents, not the total number of boilers. Where standard conditions are used it is sufficient to say all developments, or all developments that meet a particular threshold (or however the decision to use standard conditions is done.)
- f. The purpose of this row is to identify how well applicants are implementing the requirement to undertake an air quality neutral assessment as part of the overall air quality assessment for developments.
- g. This row is intended to identify how challenging it is for developers to meet air quality neutral and should count the number of applications where the initial air quality neutral calculation showed the benchmarks were not met and additional on-site mitigation measures were agreed with the developer prior to grant of consent.
- h. These rows should be used to record the number of developments where payments of off-site measures were secured from the developments. This could be measures in lieu of meeting Air Quality Neutral on-site or other actions and payments relating to local policies or needs. It is not necessary to provide the amount of financial contributions.
- i. These rows should record the number of planning permissions where compliance with the NRMM LEZ is required as a direct condition or as a condition securing conformity a code of practice or a CMS requiring compliance. Where standard conditions are used it is sufficient to say all developments, or all developments that meet a particular threshold (or however the decision to use standard conditions is done.)

**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**

All sites are calibrated every two weeks with audits taking place every 6 months. The sites are audited by a contractor, NPL, who is engaged by the London Air Quality Network. Any issues raised at audit are fixed during the routine servicing that follows, which is also on a six monthly basis.

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

The FDMS at ENF5 is equivalent to the reference method.

### **A.2 Diffusion Tube Quality Assurance / Quality Control**

- The laboratory supplying the diffusion tubes is Socotec.
- The preparation is 50% TEA:50% acetone.
- Socotec follows the procedures set out in the Harmonisation Practical Guidance.
- Under the WASP scheme Environmental Scientifics Group was rated as a satisfactory lab. The correction factor applied for the tubes is 0.75 for 2018 (factor taken from the National Bias Adjustment spreadsheet).

### **A.3 Adjustments to the Ratified Monitoring Data**

#### **Short-term to Long-term Data Adjustment**

No adjustment required.

#### **Distance Adjustment**

No adjustment required.

## Appendix B Full Monthly Diffusion Tube Results for 2018

Table M. NO<sub>2</sub> Diffusion Tube Results

Site ID	Valid data capture for monitoring period % <sup>a</sup>	Valid data capture 2018 % <sup>b</sup>	Annual Mean NO <sub>2</sub>													Annual mean – raw data <sup>c</sup>	Annual mean – bias adjusted <sup>c</sup>
			Jan	Feb	March	Apr	May	June	Jul	Aug	Sept	Oct	Nov	Dec			
ENF1		92	44.9	53	54	48	48	58	43		62	80	92	94	62	46	
ENF2		100	42.2	49	64	55	32	39	41	44	47	48	62	63	49	37	
ENF3		100	28	39	37	39	31	33	34	35	32	40	49	41	37	28	
ENF4		100	23.6	43	56	42	30	29	35	32	36	56	41	45	40	30	
ENF5		100	36.4	62	66	58	53	54	48	48	45	59	68	63	57	43	
ENF6		100	25.6	24	25	21	15	13	13	16	17	85	28	25	26	19	
ENF7		100	28.7	38	40	29	26	25	27	25	28	34	35	30	30	23	
ENF8		100	45.4	55	75	69	82	63	63	63	67	20	79	81	65	49	
ENF9		100	33.4	45	35	28	34	37	31	28	31	44	32	37	35	26	
ENF10		92	46.4	49	57		52	42	49	36	42	68	48	47	49	37	

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

<sup>a</sup> Data capture for the monitoring period, in cases where monitoring was only carried out for part of the year

<sup>b</sup> 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%)

<sup>c</sup> Means should be “annualised” in accordance with LLAQM Technical Guidance, if valid data capture is less than 75%