# Lambeth Air Quality Annual Status Report for 2016
# Date of publication: 4 May 2017


Pictures (from left to right) from Lambeth Vehicle Action Days, Bike the Borough cycle training, Lambeth electric car, air quality information stall, pupils putting up $NO_2$ diffusion tubes as part of Air-mazing school project, diffusion tube monitoring in Waterloo

This report provides a detailed overview of air quality in Lambeth during 2016. It has been produced to meet the requirements of the London Local Air Quality Management statutory process[1].

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

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**Tables**

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

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

## 1. Air Quality Monitoring

### *1.1 Locations*

**Table B. Details of Automatic Monitoring Sites for 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 |
|---|---|---|---|---|---|---|---|---|---|---|
| LB4 | Brixton Road | 531070 | 175593 | Kerbside | Y | 1 | 0.1 | 2 | $NO_2$, $PM_{10}$ | BAM1020, $NO_x$ Analyser, |
| LB5 | Vauxhall Bondway Interchange | 530317 | 177952 | Industrial[a] | Y | 5 | 3 | 2 | $NO_2$, $PM_{10}$, $SO_2$ | BAM1020, $NO_x$ Analyser, $SO_2$ Analyser |
| LB6 | Streatham Green | 529971 | 171570 | Background | Y | 15 | 6 | 2 | $NO_2$, $PM_{10}$ | BAM1020, $NO_x$ Analyser |

[a] The GLA's advisory note on Lambeth's Updated and Screening Assessment 2015 advised this site should be reclassified as Kerbside. However, King's College London has informed us about a previous agreement with Defra that this site should be classified as Industrial due to nearby PM10 emissions source from the tube station.

**Table C. Details of Non-Automatic Monitoring Sites for 2016**

In 2016 Lambeth did not carry out any continuous diffusion tube monitoring.

### *1.2 Comparison of Monitoring Results with AQOs*

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

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

| Site ID | Site type | Valid data capture for monitoring period % [a] | Valid data capture 2016 % [b] | Annual Mean Concentration (μg$m^{-3}$) | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | 2010 [c] | 2011 [c] | 2012 [c] | 2013 [c] | 2014 [c] | 2015 [c] | 2016 [c] |
| LB4 (Brixton Road) | Automatic | N/A | 91% | **173** | **158** | **162** | **112** | **149** | **129** | **92 (118)[d]** |
| LB5 (Vauxhall Bondway Interchange) | Automatic | N/A | 97% | **77** | **77** | **72** | **62 (64.9)** | **71** | **75** | **65 (69)[d]** |
| LB6 (Streatham Green) | Automatic | N/A | 67% | **46** | 38 | 37 | **43 (44.9)** | 37 (38.1) | 29 | 33 (34)[cd] |

Notes: Exceedance of the $NO_2$ annual mean AQO of 40 μg$m^{-3}$ are shown in **bold**.
$NO_2$ annual means in excess of 60 μg $m^{-3}$, indicating a potential exceedance of the $NO_2$ hourly mean AQS objective are shown in **bold and underlined**.
[a] data capture for the monitoring period, in cases where monitoring was only carried out for part of the year
[b] data capture for the full calendar year (e.g. if monitoring was carried out for six months the maximum data capture for the full calendar year would be 50%)
[c] Means should be "annualised" in accordance with LLAQM Technical Guidance, if valid data capture is less than 75%. Whenever applicable, short-term to long-term monitoring data adjustment calculations are shown in Appendix A.3.
[d] Means results have been adjusted for distance to a location of relevant public exposure in accordance with LLAQM Technical Guidance. For comparison, values in brackets show actual annual mean readings at each monitoring station.

The LB4 kerbside site at Brixton Road significantly exceeded the objective in 2016. It has exceeded the objective for all years reported and consistently monitored some of the highest concentrations in London. The results from 2016 indicate a slight fall in $NO_2$ annual mean concentrations compared with all previous years since 2010, except 2013, with the overall trend suggesting a gradual fall. However, the $NO_2$ concentration levels are still significant at this location. Brixton Road itself is a busy shopping street in Lambeth, with offices and other accommodation at first floor level and above. This site is located at

the kerbside near traffic lights and hence it monitors emissions from close to vehicle exhausts. The station is also located in a street canyon. This location has a high footfall and is usually busy throughout the day with shoppers, commuters and school children travelling through the area.

The LB5 industrial site at Vauxhall Bondway Interchange exceeded the objective in 2016 and for the past 6 years has reported annual mean concentrations that range between 62 and 77 µg $m^{-3}$ . This site is located close to the busy Bondway gyratory and a major bus station. The nearest receptors at this site are people using the bus interchange. The area is being redeveloped in the next few years and the air quality monitoring station may need to be moved in the bus station's new layout.

The background site at Streatham Green (LB6) did not exceed the annual mean objective of 40 µg $m^{-3}$ for 2016. This result was slightly higher than in 2015 but similar in value to results in 2010-2014, which were borderline or exceeding the AQO. We will be monitoring future results closely.

**Table E. $NO_2$ Automatic Monitoring 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 µgm$^{-3}$ | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | 2010 [c] | 2011 [c] | 2012 [c] | 2013 [c] | 2014 [c] | 2015 [c] | 2016 [c] |
| LB4 (Brixton Road) | N/A | 91% | **2677** | **1632** | **2182** | **250** | **1732** | **883** | **539** |
| LB5 (Vauxhall Bondway Interchange) | N/A | 97% | 17 | 4 | 4 (182) | 0 (161) | 3 | 4 | 1 |
| LB6 (Streatham Green) | N/A | 67% | 0 | 0 | 0 | 2 (143) | 0 (135) | 0 | 0 (0)[c] |

Notes: Exceedance of the $NO_2$ short term AQO of 200 $\mu gm^{-3}$ 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%

LB4 Brixton Road exceeded the hourly mean objective by an extremely large margin. 2016 once again shows a fall compared to all previous years except 2013 but more data from monitoring in future years will show if this represents an overall trend.

Both LB5 Vauxhall Bondway Interchange and LB6 Streatham Green have met the objective.

**Table F. Annual Mean PM10 Automatic Monitoring Results ($\mu g\ m^{-3}$)**

| Site ID | Valid data capture for monitoring period % [a] | Valid data capture 2016 % [b] | Annual Mean Concentration ($\mu gm^{-3}$) | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | 2010 [c] | 2011 [c] | 2012 [c] | 2013 [c] | 2014 [c] | 2015 [c] | 2016 [c] |
| LB4 (Brixton Road) | N/A | 92% | 33 | 37 | 39 | 32 (32.3) | 30 (29.8) | 28 (26.9) | 40 |
| LB5 (Vauxhall Bondway Interchange) | N/A | 58% | **43** | **43** | 29[d] | 38 (39.2) | 40 | **43** | 39 (38)[c] |
| LB6 (Streatham Green) | N/A | 27% | 23 | 27 | 27 | 17 (17.6) | 24 (22.8) | 18.2 (19) | 20 (22)[c] |

Notes: Exceedance of the $PM_{10}$ annual mean AQO of 40 $\mu gm^{-3}$ 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%. Value before annualisation is shown in brackets. See Appendix A.3 for further details.
[d] Data capture in 2012 at LB5 was 29%

At Brixton Road LB4 kerbside monitoring station the annual mean $PM_{10}$ objective was met but was at the maximum permissible and at its highest in the 7 year trend. $PM_{10}$ levels at this location remain a concern and are closely monitored.

Vauxhall Bondway Interchange LB5 industrial site was marginally below the objective in 2016, however it still remains a concern due to borderline results in previous years. There has been a significant increase in construction activity in Vauxhall and nearby Nine Elms. At the time of writing, early 2017 results show an increase in $PM_{10}$ levels in this location and we are currently working with the developers in Nine Elms and with Wandsworth, the neighbouring borough, where the majority of construction is taking place to address this issue.

At Streatham Green LB6 urban background monitoring station the annual mean $PM_{10}$ objective was met but the annual mean concentration of $PM_{10}$ remains at a similar level to previous years with no apparent decreasing trend.

**Table G. $PM_{10}$ Automatic Monitoring 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 µgm$^{-3}$ | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | 2010 [c] | 2011 [c] | 2012 [c] | 2013 [c] | 2014 [c] | 2015 [c] | 2016 [c] |
| LB4 (Brixton Road) | N/A | 92% | 15 | 36 | **55** | 13 (46.6) | 12 (43.7) | 11 (39.5) | **57** |
| LB5 (Vauxhall Bondway Interchange) | N/A | 58% | **72** | **89** | 15[d] | 22 (**53.8**) | **62** | **73 (60.6)** | **43 (62.7)** |

| Site ID | Valid data capture for monitoring period % [a] | Valid data capture 2016 % [b] | Number of Daily Means > 50 µgm$^{-3}$ | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | 2010 [c] | 2011 [c] | 2012 [c] | 2013 [c] | 2014 [c] | 2015 [c] | 2016 [c] |
| LB6 (Streatham Green) | N/A | 27% | 6 | 20 (46.8) | 12 (41.7) | 4 (27.4) | 10 (40.44) | 1 (34.5) | 2 (33.8) |

Notes: Exceedance of the $PM_{10}$ 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% .

[d] Data capture in 2012 at LB5 was 29%.

Brixton Road LB4 has recorded a breach of the objective for the first time since 2012. As mentioned above, PM10 levels at this location remain a concern and are closely monitored.

Vauxhall Bondway Interchange LB5 has also recorded a breach. At the time of writing, early 2017 results show an increase in $PM_{10}$ levels in this location and we are currently working with the developers in Nine Elms and with the neighbouring London Borough of Wandsworth, where the majority of construction activity is taking place, to address this issue.

Streatham Green LB6 met the objective and no significant increases in daily mean exceedance were noted.

**Table H. $SO_2$ Automatic Monitoring Results for 2016: Comparison with Objectives**

| Site ID | Valid data capture for monitoring period % [a] | Valid data capture 2016 % [b] | Number of: [c] | | |
|---|---|---|---|---|---|
| | | | 15-minute means > 266 µgm$^{-3}$ | 1-hour mean > 350 µgm$^{-3}$ | 24-hour mean > 125 µgm$^{-3}$ |
| LB5 (Vauxhall Cross Interchange) | N/A | 85% | 0 | 0 | 0 |

Exceedances of the $SO_2$ 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)

[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" as in Box 3.2 of TG(09) (http://laqm.defra.gov.uk/technical-guidance/index.html?d=page=38), if valid data capture is less than 75%

There were no exceedences of $SO_2$ concentrations which is in line with previous years' results.

## 2. Action to Improve Air Quality

### Table I. 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 | *No evidence required* |
| | ***1.b*** | Provided an up-to-date Air Quality Action Plan (AQAP), fully incorporated into LIP funding and core strategies. | Y | • Lambeth consulted on its 2017-2022 AQAP from 15 August to 15 November 2016 (www.lambeth.gov.uk/AQAP). AQAP is scheduled to appear at Cabinet on 15 May 2017 to be ratified and includes actions funded through LIP (e.g. Action Point 33: £40k LIP to investigate building LENs)<br>• In 2016, Lambeth funded its Air-Mazing schools engagement project with Sustrans (£25k) and its Love Lambeth Air project (£5k) through LIP<br>• On 20 October 2016 Lambeth Sustainability presented the 2017-2022 AQAP to the Health and Wellbeing Board, where it was agreed to advocate air quality in all local strategies |
| **And 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 | • We carried out our Air-Mazing schools engagement project from October 2016, which entailed working with 10 primary schools highlighted by the Mayor as exposed to high pollution. At the schools we carried out a variety of activities, including assemblies, parent coffee mornings, lichen walks, etc. An example includes a classroom session about route planning in St John the Divine School on 1 December 2016<br>• On 16 December 2016 we submitted a planning application to build a green screen at St Helen's Roman Catholic Primary School to separate the school's |

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| | | | | main playground from Brixton Road. We have also carried out $NO_2$ diffusion tube and $PM_{2.5}$ handheld monitoring at the site during 2016<br>• During our AQAP consultation we attended an Age UK Lambeth event on 12 October 2016 at Gracefield Gardens Health Centre organised as part of the Celebrating Age Festival to discuss actions older citizens would like included in the Plan and to raise awareness about air pollution and ways to avoid exposure<br>• We are part of the MAQF2 anti-idling project and held two events in 2016 (17 October in Windrush Square, Brixton and 23 November in Brockwell Park, Herne Hill) |
| | **2.b** | Developed plans for business engagement (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). | Y | • As part of our MAQF2 Low Emission Logistics (LEL) project we carried out a workshop with Brixton BID businesses on 13 September 2016 (at the BIDs' offices) to discuss how to reduce deliveries<br>• We attended the Lambeth BID forum on 18 January 2016 at Brixton Pop to discuss what should be included in Lambeth's new AQAP<br>• From October 2016 we have included an anti-idling module in the training for any staff driving Lambeth fleet |
| | **2.c** | Integrated transport and air quality, such as: improving traffic flows on borough roads to reduce stop/start conditions, improving the public realm for walking and cycling, and introducing traffic reduction measures. | Y | • From Monday 31 October Estreham Road will be 'No Entry' for northbound vehicles (expect for pedal cycles) as part of a six month trial<br>• We spent 2016/17 liaising with residents in 4 wards as part of the our streets programme discussing how they would like their area to be improved. In 2017/18 we will be delivering this work, including traffic calming measures. The consultation on what residents would like to see in their streets closed on 17 January 2017 |
| | **2.d** | Made additional resources available to improve local air quality, including by pooling its collective resources (s106 funding, LIPs, parking revenue, etc). | Y | • Our Co-operative Local Investment Plan for Stockwell, Vassall and Larkhall wards was approved at Cabinet on 16 January 2017 detailing how CIL will be spent to improve these wards and includes air quality measures |

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| | | | | • Until 2016 LIP money had always been used on projects which complement air quality, such as cycling. But in 2016 for the first time ever, money was allocated specifically to air quality: £25k for the Air-Mazing schools engagement project and £5k for the Love Lambeth Air project |
| **3. Leading by example** | **3.a** | Invested sufficient resources to complement and drive action from others. | Y | • As per the ASR 2015, Air Quality in Lambeth is headed by the Sustainability team, which includes the Sustainability Manager, Sustainability Officer and Flood Risk Officer. All three officers work on air quality projects. But in December 2016 Lambeth advertised for another Sustainability Officer to join the team. Interviews were completed in January 2017 and the new officer joined the team in March 2017.<br>• Through our Low Emission Logistics (LEL) project funded by MAQF2, we also employed on a temporary basis from May 2016 the Freight Consolidation Project Manager and Officer<br>• We have a budget of £31k per year within Sustainability for projects to improve air quality and raise awareness. We also have other budgets for air quality monitoring, Part B enforcement, etc.<br>• We worked with departments across the Council, especially transport, planning and public health, to write the new AQAP |
| | **3.b** | Maintained an appropriate monitoring network so that air quality impacts within the borough can be properly understood | Y | • Lambeth still has three air quality monitoring stations and we are part of the London Air Quality Monitoring Network<br>• We also carried out the Love Lambeth Air project and diffusion tube monitoring at St Helen's RC Primary school and Waterloo train station |
| | **3.c** | Reduced emissions from council operations, including from buildings, vehicles and all activities. | Y | • Lambeth officers are encouraged to work remotely up to 3 days a week. Throughout November 2016 Lambeth introduced Skype for Business to encourage officers to meet virtually and therefore work from home more and not travel for meetings<br>• From October 2016 we have included a module on reducing engine idling at |

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| | | | | training sessions for staff using Lambeth fleet<br>• An additional bike shelter was added at Blue Star House on 2 May 2016 to encourage staff to cycle more |
| | **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 | • In 2016 Lambeth committed in its AQAP to include air quality in the Lambeth Sustainability strategy, which is due to be published in 2017 |
| **4. Using the planning system** | **4.a** | Fully implemented the Mayor's policies relating to air quality neutral, combined heat and power and biomass. | Y | • During 2016 secured a resource to assess planning applications for 2017 onwards |
| | **4.b** | Collected s106 from new developments to ensure air quality neutral development, ***where possible*** . | Y/N | • Didn't collect in 2016, but process put in place to collect from 2017 onwards |
| | **4.c** | Provided additional enforcement of construction and demolition guidance, with regular checks on medium and high risk building sites. | Y | • From early January 2017 Lambeth has been assessing planning applications and is now working with colleagues to develop a system to enforce against construction and demolition<br>• Lambeth is part of the South London NRMM project, which is funded through MAQF2. Compliance officers from the project led by Merton have been in contact with Lambeth sites since late 2016 and started visiting in 2017 |
| **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 | • In 2016 Sustainability officers worked with colleagues in Public Health and there is now an air quality JSNA on our website. The JSNA will be regularly updated with the help of Public Health and other colleagues who participate in the new Air Quality Action Plan steering group |
| **6. Informing the public** | **6.a** | Raised awareness about air quality locally. | Y | • We have continued to contribute to AirTEXT (£1k in 2016)<br>• We carried out the Love Lambeth Air project in 2016 with Mapping for Change, which enabled residents to monitor air quality in their local area. On 20 October 2016 there were workshops (at our office in Brixton) for residents to attend to be trained how to install and change a diffusion tube and also ask questions about air quality in Lambeth |

| | | | | |
|---|---|---|---|---|
| | | | | • We held open evenings 15th (at Roots and Shoots) and 28th (Streatham Library) September 2016 as part of our AQAP consultation where a number of residents attended to discuss air quality with us. Some of the residents went onto participating in our idling actions days and citizen science Love Lambeth Air $NO_2$ monitoring project<br>• We held an air quality information stall at Lambeth Country Show on 16 and 17 July 2016 in Brockwell Park, where we talked to residents about reducing exposure, about their responsibility to reduce pollution by travelling sustainably, as well as engine idling and ways to report pollution coming from construction activities in the borough |

## 2.1 Air Quality Action Plan Progress

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

Table J provides a brief summary of Lambeth's progress against its Air Quality Action Plan (AQAP), showing progress made this year. During 2016 we prepared and consulted on our new Air Quality Action Plan 2017-2022 (www.lambeth.gov.uk/AQAP). While actions included in the new AQAP are to be implemented from 2017 onwards, work on some of the action points has started in 2016 and are included in Table J. Once finalised, the new AQAP will be available on Lambeth's website.

We have highlighted in grey all actions in the Action Plan which have now been completed. All other actions listed are continuous and will now form part of the new Action Plan 2017-2022.

We have included a brief description of projects relevant to each of the actions which we carried out in 2016. Wherever possible, we quantified the impact of each project on air quality. But with older projects this has been difficult. For the 2017 ASR our new Air Quality Action Plan will be in place and each project's impact will be easier to quantify.

| Measure | Action | Progress<br>• Emissions/Concentration data<br>• Benefits<br>• Negative impacts / Complaints | Further Information |
|---|---|---|---|

| | | | |
|---|---|---|---|
| Low Emission Zone | Low Emission Zone<br>The Council will continue to work with the GLA and other London Boroughs in assessing the feasibility of introducing a London –wide LEZ | This action is complete, as the LEZ has been introduced. Lambeth is now working with TfL and the GLA to discuss widening/strengthening the ULEZ/LEZ. Lambeth represented the *Central London Air Quality Cluster Group* as part of the ULEZ/LEZ TfL Borough Engagement Group during 2016. | |
| Promotion of cleaner vehicle technologies and alternative fuels | The Council will promote the environmental and financial benefits to both its staff and other organisations through its travel plans strategy | The Staff Travel Plan was implemented before 2016.<br><br>In addition, Lambeth continues to provide pool bikes to staff to travel between buildings for meetings, pays £25 each month to officers who make all work journeys by bike and recently installed a new bike shed at Blue Star House.<br><br>Lambeth works closely with schools in the borough as part of the TfL STARS programme. 56 schools in the borough were engaged with the programme in 2016 as opposed to 37 schools in 2015. A hands-up survey of the 56 schools showed that 23.25% of journeys to school were made by car in 2016. The number is predicted to decrease in the coming years with more school engagement work and more schools aiming for Silver or Gold.<br><br>In 2016 we arranged for Sustrans to run our Air-mazing school engagement project. Between October and December 2016 we held 9 air quality talks and presentations during school assemblies, 9 pop-up air-quality | Air-Mazing schools engagement project |

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|---|---|---|---|
| | | themed stalls throughout a school day, 5 coffee morning for parents, 1 route-planning session with Year 5s, 1 car-free day and 8 $NO_2$ monitoring sessions with pupils of various ages. We engaged with approximately 2,300 children either through assembly presentations (where the whole school was present) or directly by engaging classes or groups in activities. In addition, 250 parents have been engaged at coffee mornings and pop-up stalls. The project continues until May 2017 and is aimed to raise air quality awareness and encourage pester power towards modal shift. | |
| Replace Council's own vehicle fleet with green fuelled fleet | Provide properly equipped cars/ vehicles (using zero or very low emission fuels) for duties where it is deemed essential for a vehicle to be used. | When writing this plan the target was for all fleet diesel vehicles to meet Euro IV standards, which has now been achieved.<br><br>In our new AQAP 2017-2022, which will be submitted for Cabinet approval in May 2017 we are asking that council vehicles are only used when essential and raising this target, by asking for FORS Gold accreditation for our fleet, moving to Euro VI and 6 vehicles. | Fleet diesel vehicles now all meet Euro IV standards. |
| Encourage greater availability of green fuels in borough | The Council will approach local fuel providers to encourage them to stock fuels such as LPG. Any new development including proposals for a filling station will be required though the planning system to stock LPG; | Previously a promotional leaflet was produced and circulated to local fuel providers. This action is now complete. In our new AQAP 2017-2022 we want to encourage even greener fuel and reduce vehicle use by developing electric charging points, reducing freight on our roads, and investigate installing further cycling facilities in the borough | |

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| Support a London wide approach to Vehicle Emissions Testing | The Council will carry out vehicle emissions testing within its Air Quality Management Areas in order to enforce the vehicle emissions standards (with a target to carrying out 18 test days per year within the borough) | This action is complete as the Council previously participated in the London wide emissions testing initiative. In 2016 Lambeth, in partnership with 11 other London boroughs, carried out an anti-idling campaign funded through MAQF2 with monthly Vehicle Idling Action days held in Lambeth town centres.<br>Two action days (of six organised in 2016-17 as part of MAQF2 Year 1 programme for this project) were held in 2016 – in Brixton and in Herne Hill. Lambeth staff and trained volunteers had 199 interactions with members of the public, most of whom were idling drivers, and 240 people were spoken to in total. There were also 124 pledges not to idle in the future. | http://love.lambeth.gov.uk/engine-idling-action-days/<br><br>http://love.lambeth.gov.uk/engine-idling-action-days-2/<br><br>http://idlingaction.london/ |
| Implementation of traffic reduction measures | The Council endorse the concept of traffic reduction in Lambeth through policies in the UDP | This action is now complete as the UDP has been replaced by the Lambeth Local Plan. Our current Local Plan lists lots of measures to encourage sustainable transport and reducing traffic. We are also currently working on a freight reduction project Low Emission Logistics as part of MAQF2 | http://www.lambeth.gov.uk/planning-and-building-control/planning-policy/archived-local-plans<br><br>http://www.lambeth.gov.uk/sites/default/files/pl-lambeth-local-plan-2015-web.pdf<br><br>http://love.lambeth.gov.uk/low-emission-logistics-project/ |
| Traffic reduction through land use planning | The Council will seek to reduce the impact of transport on the environment by coordinating land use and transport so as to reduce the need to travel, and by encouraging more use of public transport, walking cycling and less car use. | This action is complete. The Lambeth Local Plan encourages modal shift to sustainable transport | http://www.lambeth.gov.uk/sites/default/files/pl-lambeth-local-plan-2015-web.pdf |

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| Recognises Congestion Charging as a method of direct traffic restraint | The Council is working with TfL and others to study in more detail the effects of congestion charging in North Lambeth and along the principal routes into the north of the Borough | This action is now complete. Lambeth is now working with TfL and the GLA to widen/strengthen the ULEZ/LEZ | |
| Lambeth and neighbouring boroughs will work with the GLA and TfL to maximise the effects within the congestion charge area of North Lambeth | The Council is proposing a number of local actions through its UDP and LIP in support of the Mayor's congestion charging scheme. These include:<br><br>A combination of area wide traffic management and street improvements to encourage through traffic to keep to the principal route network<br><br>Review of Controlled Parking Zones in the north of the borough | This action is now complete as the CCZ has been implemented.<br><br>Lambeth is now completing a new CPZ review as part our new AQAP 2017-2022. We completed the first part in March 2017, which has seen the creation of new CPZ areas and we are looking at more areas in 2017 | |
| Lambeth will promote Workplace and School Travel Plans | Introduce travel information into induction packs<br><br>Audit and improvement to walking routes between council offices | This action is complete. The Transport team engages with schools throughout the borough to develop travel plans. Lambeth has now reduced from 14 to just 4 key buildings, so the amount of journeys for work has reduced. Also as part of *Your New Town Hall* project, we will only have 2 key buildings, which will be joined together. Furthermore, council officers are encouraged to work remotely and use Skype for Business whenever possible to eliminate the need for travel | |

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| The Council will manage the supply of parking spaces as a means of restricting traffic and promoting sustainable choices | The Council seeks to prioritise the use of existing spaces for the disabled, local residents and essential business use. | As above Lambeth is now carrying out a new CPZ review and as part our new AQAP 2017-2022, to be submitted for Cabinet's approval in May 2017, we are considering introducing emission based parking permits, discounted charges at parking meters based on emissions, etc. We are also carrying out a freight consolidation project (Low Emission Logistics) as part of MAQF2. | http://love.lambeth.gov.uk/low-emission-logistics-project/ |
| The Council will develop its Parking Enforcement Plan to discourage commuter traffic and improve bus journey times/reliability | The Council is currently developing a parking Enforcement Plan that aims to introduce consistent enforcement strategies across Lambeth | This action is now complete as the Lambeth Parking Plan was adopted. We have a robust enforcement team, which helps to encourage modal shift | |
| The Council will work with the TfL to promote and implement a package of enhanced, intensified and enforced bus priority measures in the most heavily used bus routes | Expansion of the Bus Priority Network throughout Lambeth<br><br>CCTV roadside camera enforcement on busiest routes.<br>Provision of more road space for buses and longer bus stop clearways (subject to impact on congestion).<br>Extended bus lane operating hours.<br>Bus Plus routes will be introduced along some of the most heavily used bus routes in Lambeth, which give enhanced bus priority | This action is now complete as the *London Bus Initiative* programme has finished. Lambeth has campaigned for TfL to clear up its bus fleet and now looks forward to working with TfL and the Mayor to introduce clean bus corridors and other air quality measures, which were announced in 2016 | |
| All bus routes will be | As above | This action is now complete as the *London Bus Initiative* programme has finished | As above |

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| effectively enforced | | | |
| Lambeth is supporting and developing the Cross River Transit/London Tram scheme | Working with TfL/ GLA to develop the new Tram link from Camden to Brixton<br>The Council will look at the possibility of extending the link from Brixton to Streatham and<br>Norwood and possible extensions to the Croydon Tram link | This project has now finished | |
| Lambeth will work with the GLA and TfL in their programme of investment and expansion of the underground tube network as a means of enhancing more sustainable transport in London | The Council welcomes and supports the extension of the East London Line via Tulse Hill and Streatham to Wimbledon<br>The Council will work with TfL to investigate the long term possibility of an additional extension of the East London Line to fit in with the Brixton hub proposals and the southwards extension of the Victoria Line to provide a new interchange at<br>Herne Hill Station | These projects have now finished. However, as part of the Nine Elms development work, the Northern Line is being extended | |
| Lambeth will pursue possibilities to improve rail services provision in the borough in order to promote rail travel as a viable alternative to the car | The Council is developing a number of proposals to promote improved rail service in Lambeth<br>The Brixton Hub proposals<br>Examining the feasibility of providing South London Line High Level platforms at Brixton Station<br>Linking to this are proposals by the Mayor to develop the | The council continues to promote a Crossrail2 station for Streatham which will reduce road traffic emissions on the A23 | |

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| | South London Line between Victoria and London Bridge | | |
| The Council supports river transport on the Thames as an alternative mode of transport for commuters and tourists | The Council will investigate the options for improved interchange facilities that both encourage greater passenger use, and transfer of freight from road to river to relieve road congestion | This action is complete. Policy T5 in the Lambeth Local Plan supports and promotes use of the River Thames as a strategic transport route for passengers and freight. | |
| Lambeth will continue to develop its Walking Strategy in order to improve the walking environment | Lambeth has set up a transport taskforce (Feet First) to promote walking and re-balance the priorities for action away from the car and towards pedestrians<br><br>The Taskforce will identify the fine detail of those factors presently discouraging walking, such as<br>poor lighting levels, footway conditions, poor pedestrian safety and pedestrian signing, and<br>propose ways in which these issues can be rectified | The Feet First group no longer exists.<br><br>However, Lambeth has a number of policies and initiatives to encourage modal shift to sustainable transport. This is a priority in our Local Plan. Also we have the Silver Cyclists group for citizens over 60. Lambeth also has a staff walking group which meets regularly. | |
| Lambeth will work with TfL to encourage walking as a viable alternative to other forms of transport | The Council is developing a walking map of Lambeth<br><br>Lambeth is commissioning a study to develop a North South-South<br>South Walking route in Lambeth | This action is now complete | |

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| | TfL are developing an internet based journey planner that will include waking routes in addition to public transport options | | |
| The Council will continue to develop its Walking Strategy to encourage children to walk to school as an alternative mode of transport | Identify safe routes to school<br><br>Improvements to physical road safety<br><br>Road Safety Education<br><br>Promoting national schemes such as Walk to School Week | As part of our school safety programme, we regularly engage with schools to encourage children to walk. We work closely with schools as part of STARS programme, with more schools achieving or aiming to achieve Silver and Gold. Working with Schools is also an important part of our new 2017-2022 AQAP.<br><br>We have also encouraged children to walk to school as part of our Child Obesity programme.<br><br>In 2016 we arranged for Sustrans to run our Air-mazing school engagement project for schools. Between October and December 2016 we held 9 air quality talks and presentations during school assemblies, 9 pop-up air-quality themed stalls throughout a school day, 5 coffee mornings for parents, 1 route-planning session with Year 5s, 1 car-free day and 8 $NO_2$ monitoring sessions with pupils of various ages. We engaged with approximately 2,300 children either through assembly presentations (where the whole school was present) or directly by engaging classes or groups in activities. In addition, 250 parents have been engaged at coffee mornings and pop-up stalls. The project continues until May 2017 and is aimed to raise air quality awareness and encourage pester power towards modal shift. | Air-Mazing schools engagement project |

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| The Council will continue to carry out and support measures to promote and make cycling safer and more convenient | The Council supports the continued development of the London Cycle Network throughout the borough<br><br>Provide continuous and safe cycle networks and other facilities such as cycle parking – the aim is to reduce road anger and improve driver attitude so that all roads can be used by cyclists, but also to provide separate cycle lanes where traffic speeds are high<br><br>The provision of separate cycle paths will be done by taking road space from motor vehicles rather than pedestrians and shared use of footpaths will only be considered where pedestrian safety can be maintained<br><br>Improving facilities at public transport interchanges to ensure secure cycle parking at transport hubs and the council will lobby for spaces for bikes to be provided on trains<br><br>Major road works and junction improvements will take into account the needs | The Council is working with TfL on the Quietways programme. We also offer Dr Bike sessions for residents to take their bikes to receive free cycle maintenance checks and advice. In addition, we offer cycling safety courses to staff and residents<br><br>As part of our 2017-2022 Air Quality Action Plan we want to install bike hire facilities in Brixton. | http://www.lambeth.gov.uk/parking-transport-and-streets/cycling/find-a-dr-bike-event |

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| | of the cyclist, adapting infrastructure for improved cycle provision | | |
| The Council will require developers to include cycle facilities within new developments and where appropriate encourage them to provide shower and changing facilities | Cycling will be considered in all aspects of transport planning in accordance with the council's policy of developing a truly integrated transport system.<br><br>Provision of secure and assessable cycle storage at new developments<br>Provision of changing and shower facilities | This is now included in Lambeth Local Plan (policy T3). | http://www.lambeth.gov.uk/sites/default/files/pl-lambeth-local-plan-2015-web.pdf |
| Lambeth will support the work of the Mayor to investigate methods for reducing emissions from diesel powered stock | The Council is supporting the programme of diesel replacement of rail freight stock through its liaison with SELTRANS | This action is now completed | |
| Lambeth welcomes the commitment in the Mayor's Strategy to take action to reduce particulate emissions | The Council will continue to work in partnership with other central London Boroughs (Central London Cluster Group) to support the work of the GLA to reduce particulate emissions throughout London<br><br>The Council will produce a 4th Stage Review and Assessment of Air Quality in Lambeth which will specifically model existing | The 4th Stage Review and Assessment was completed in 2015. In April 2016 Lambeth, along with other London boroughs, became part of the new London Local Air Quality Management (LLAQM) system overseen jointly by the GLA and Defra. LLAQM requires Annual Status Reports and Annual Summary Status Reports to be prepared and published.<br><br>In 2016 Lambeth became chair of the Central London Air Quality Cluster Group and works closely with all members. | ASR and ASSR for 2015 published in Downloads section under this link:<br><br>www.lambeth.gov.uk/AirQuality |

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| | and future levels of particulate pollution in the borough | We are now working with other boroughs as much as possible, such as the joint MAQF2 anti-idling project led by City of London. | |
| Lambeth welcomes and supports the environmental controls proposed for London wide airport development | Lambeth will give full consideration to the environmental, economic and transport implications of any future proposals for further development of Heathrow. | Lambeth has continued to be involved in pollution from aviation. We have commented on the consultations about Heathrow having a third runway | |
| The Council will continue to regulate pollution from industrial processes | Part B permitting / Statutory Nuisance<br><br>Air Quality Review and Assessment | We are continuing to issue permits, conduct inspections and if necessary enforce for Part B installations.<br>In 2016 we carried out a comprehensive review of all Part B activities in the borough which resulted in 11 previously unregulated Part B activities (dry cleaners) being added to the register and being fully inspected and regulated. | |
| Reduce emissions of VOCs from industry | Part B permitting of dry cleaners, small scale vehicle resprayers, degreasing operations | Please see the entry above | |
| Promote the best practices and procedures to ensure pollution emissions and dust generation is kept to a minimum during construction activities | Council to promote the uptake of the BRE Code of Construction Best Practice when finalised<br><br>Ensure Air Quality is taken into account along with other material considerations in making decisions on development proposals | In late 2016 Lambeth started work to tackle dust emissions from Nine Elms | |

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| The Council will use its statutory nuisance powers to control smoke nuisance from bonfires | Statutory nuisance action to be taken in cases where such action is considered necessary and Appropriate<br><br>Council to increase priority of bonfires complaints by improving response time. Target: same day response | In 2016 Lambeth did not receive any complaints regarding bonfires | |
| The council will promote composting and recycling of waste to encourage greener methods of disposal | To recycle or compost 15% of household waste<br><br>To ensure 100% of the population of Lambeth is either serviced by a kerbside collection of recyclables or lives within a kilometre of a recycling centre<br><br>To have the green box service available to all street domestic properties. To have 20% of households with gardens participate in home composting | This action is now complete. All residents have access to recycling and we have introduced a kerbside food waste collection service. Residents in estates are also able to compost food and garden waste if they want to through our composting scheme. | |
| The Council will seek to use the cleanest conventional energy sources in its own buildings | The Council continue an ongoing programme of oil to gas conversion | In 2015 the Council moved from 14 down to 4 key buildings, which obviously reduces the amount of energy used. In addition, with the *Your New Town Hall* project we will only be using energy in two buildings | |
| The Council will introduce policies in its revised UDP to encourage high | The Council will: Require developers to consider | This action is complete as the Lambeth Local Plan contains policies regarding energy and sustainable design and construction. | |

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| standards of energy efficiency and the use of renewable energy in developments through sustainable design principles | sustainable design and resource efficient principles in new buildings in line with its Sustainable Construction Policy<br><br>Encourage the use of natural ventilation and lighting and effective energy conservation and thermal insulation to conserve energy and reduce heat loss and air pollution<br><br>Encourage new developments to meet the highest standards of sustainable design and construction, including the re-use of existing building stock where practicable<br><br>Consider and require efficient local energy generating schemes where practicable<br><br>Assess combined heat and power schemes (CHP) proposals using Customs and Excise "Good quality CHP" index and ensuring developers demonstrate that opportunities for utilising heat have been fully assessed | | |
| **New actions in 2016 not included in AQAP table above** | LLECP<br><br>Love Lambeth Air | • Lambeth continues to be an active member of the LLECP project | www.llecp.org.uk<br><br>http://love.lambeth.gov.uk/love-lambeth-air/ |

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| | | • Lambeth offered diffusion tubes to residents and businesses in 2016 to monitor air quality at home or at work | |

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

**Table K. Planning requirements met by planning applications in Lambeth in 2016**

| Condition | Number |
|---|---|
| Number of planning applications reviewed for air quality impacts | **Data not available** (In 2016 Lambeth Sustainability officers did not assess planning applications for AQ. Instead an Environmental Health consultant commented on large majors; but data regarding how many applications was not recorded. Since January 2017 Lambeth Sustainability officers have been commenting on all major planning applications and are recording data manually to be able to complete this cell in the 2017 ASR) |
| Number of planning applications required to monitor for construction dust | **Data not available** (This information was not recorded during 2016. Since January 2017 Lambeth Sustainability officers have been commenting on all major planning applications and are maintaining a list of major demolition sites, etc. where additional on-site monitoring may be required due to the potential for dust). This list will be passed regularly to a member of our Highways team to inspect |
| Number of CHPs/Biomass boilers refused on air quality grounds | **None** |
| Number of CHPs/Biomass boilers subject to GLA emissions limits and/or other restrictions to reduce emissions | **Data not available** (Data regarding CHPs/Biomass boilers was not recorded during 2016. Since January 2017 Lambeth Sustainability |

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| | officers now comment on all major planning applications and will record manually how many CHPs/Biomass boilers were allowed subject to GLA emission limits and/or other restrictions) |
| Number of AQ Neutral building and/or transport assessments undertaken | **Data not available** (The data was not recorded during 2016. From January 2017 Lambeth Sustainability officers have been commenting on all major planning applications and will record this information manually) |
| Number of AQ Neutral building and/or transport assessments not meeting the benchmark and so required to include additional mitigation | **Data not available** (Data regarding AQ neutral building and/or transport assessments was not recorded during 2016. Since January 2017 Lambeth Sustainability officers now comment on all major planning applications and will record manually when an assessment is not acceptable) |
| Number of planning applications with S106 agreements including other requirements to improve air quality | **None** (From January 2017 Lambeth officers have started commenting on all major planning applications. We are now working with colleagues in planning and regeneration to request s106 money for AQ. Action Point 1.3 in our 2017-2022 AQAP says we want to use s106 for AQ when possible) |
| Number of planning applications with CIL payments that include a contribution to improve air quality | **None** (From January 2017 Lambeth officers have started commenting on all major planning applications. We are now working with colleagues in planning and regeneration to request CIL money for AQ. Action Point 1.3 in our 2017-2022 AQAP says we want to use CIL for AQ when possible) |

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| **NRMM: Central Activity Zone and Canary Wharf**<br>Number of conditions related to NRMM included.<br>Number of developments registered and compliant.<br>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. | **3** conditions included<br>**8** registered and compliant<br>**5** registered but with no plant on site or works complete<br>**12** unregistered or uncompliant and being chased<br><br>Lambeth is part of the MAQF2 South London NRMM project led by Merton. As part of this project, since early 2017 an NRMM compliance officer has been visiting all sites checking and advising on compliance. A Sustainability officer from Lambeth has participated in two of the site visits and will continue to assist with compliance checks throughout 2017. Our aim is to achieve 90-100% compliance by the end of 2017. |
| **NRMM: Greater London (excluding Central Activity Zone and Canary Wharf)**<br>Number of conditions related to NRMM included.<br>Number of developments registered and compliant.<br>Please include confirmation that you have checked that the development has been registered at www.nrmm.london and that all NRMM used on-site is compliant with Stage IIIA of the Directive and/or exemptions to the policy. | **5** conditions included<br>**3** registered and compliant<br>**4** unregistered/uncompliant and being chased<br><br>Lambeth is part of the MAQF2 South London NRMM project led by Merton. As part of this project, since early 2017 an NRMM compliance officer has been visiting all sites checking and advising on compliance. A Sustainability officer from Lambeth has participated in two of the site visits and will continue to assist with compliance checks throughout 2017. Our aim is to achieve 90-100% compliance by the end of 2017. |

Process to ensure relevant planning applications are reviewed:
At present the computer system used by Lambeth Planning is set-up to automatically forward any planning application to Sustainability when comments are required regarding energy or flooding; we are also commenting on these applications for air quality when relevant. Lambeth Sustainability is working with colleagues in planning to set up the system to also be sent automatically any planning application (major or minor) in the CAZ and all major applications outside the CAZ.

Process to ensure air quality conditions are enforced:

- Lambeth is part of the Merton MAQF2 NRMM project and is sending an updated list of NRMM conditioned developments to Merton on a quarterly basis and will ask Merton to return an updated list showing which developments are registered at nrmm.london and are compliant with the condition on site; this information will be used in the 2017 ASR. As per Action Point 2.2 in our 2017-2022 Air Quality Action Plan, Lambeth is developing a process to monitor compliance with NRMM conditions after March 2019, when MAQF2 funding expires for the Merton project
- Lambeth Sustainability will manually keep a list of sites requiring additional monitoring for dust. Sustainability officers will work with colleagues in Highways and also Planning to arrange unscheduled visits to ensure compliance
- Regarding other conditions, planning will send Sustainability a notification whenever an applicant sends further information following a condition. Sustainability will then assess the information to confirm that the condition has been met

### *3.1 New or significantly changed industrial or other sources*

We have received and accepted as duly made two new applications: one from a timber processing plant (Part B Authorised Process Timber and Manufacture of Wood Based Products PG6/02 (12)) and one from a dry cleaning shop (Part B Authorised Process Dry Cleaners PG6/46 (04)).

In addition, we have allocated resources to identifying and inspecting premises operating Part B authorised processes without a permit. As a result of this action, in 2016 eleven new dry cleaning installations were inspected and are now fully regulated.

## Appendix A Details of Monitoring Site QA/QC

### *A.1 Automatic Monitoring Sites*

Routine calibrations of equipment and periodic site audits were carried out by Enviro Technology, through our contract with King's College London Environmental Research Group (KCL). Routine calibrations are scheduled for every two weeks. Site audits and services are carried out bi-yearly.

- **Low $NO_2$ data capture of 67%** (<75% threshold) at **Streatham Green LB6** was due to a fault with the ozone generator in the $NO_x$ analyser, which has since been replaced. The issue with the unit started on 11/06/16 and was initially identified by an engineer as a leak. However, the issue persisted and an engineer established on 28/07/16 that the fault was actually due to a fault with the ozone generator. The ozone generator was replaced on 07/10/16 after following the appropriate procurement procedure. Therefore data between 11/06/16 and 07/10/16 has been deemed invalid.

- **Low $PM_{10}$ data capture of 58%** (<75% threshold) at **Vauxhall Bondway Interchange LB5** was due to a fault with an old BAM1020, which has since been replaced. The old BAM had had erratic readings due to O ring issues since December 2015 and into early 2016. Our maintenance contractor, Enviro Technology (ET) responded to a callout in January 2016 but the fixings to the sample inlet had ceased working and ET could not get access to the sample inlet without it being cut off. The BAM was taken back to the workshop and it was assessed that the instrument was so dated that most of the bolts had seized up and no spare parts for the model were available. A new smart-heated BAM1020 was installed on 09/06/16 and has been working well since.

- **Very low $PM_{10}$ data capture of 27%** (<75% threshold) at **Streatham Green LB6** was due to flow issues with the BAM1020, which in turn were due to a fault on the sensor. The sensor was replaced in December 2016. In addition, during ratification in early 2017 it was noted that $PM_{10}$ BAM concentrations observed were much higher compared to London Background concentration and a large portion of the collected data was again rejected.

  The following notes were made by KCL and are associated with the periods where data was excluded and the reasons why:

| Site | Species | StartDate | EndDate | Ratifier | Flag | Reason | Evidence |
|---|---|---|---|---|---|---|---|
| LB6 | DUST | 05/02/2016 | 24/02/2016 | AF | X | Service found that flow in the BAM was 50% out; X'ed data since last LSO visit (reading started overrading) | Overrading LMN and RB7 |

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| LB6 | DUST | 24/03/2016 | 11/04/2016 | AF | X | X'ed as data lower than LMN and RB7 | Dialled in and BAM reported flow faults - flow out of calibration. X'ed since it was lower than reference sites |
| LB6 | DUST | 05/05/2016 | 05/12/2016 | AF | X | 12/5 flow 60% out; on 5/12/ engineer replaced flow sensor | Overrading LMN and RB7 |

$PM_{10}$ Monitoring Adjustment

The correction of 1/1.2 is applied to raw PM10 BAM data at an hourly basis so the fully ratified PM10 data is reference equivalent. This is done by KCL as we are part of the London Air Quality Network.

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

Not applicable

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

Short-term to Long-term Data Adjustment

**Table L. Short-Term to Long-Term Monitoring Data Adjustment**

As mentioned in section A.1 above, low $NO_2$ data capture (at 67%) at Streatham Green LB6 (at 67%) as well as $PM_{10}$ data capture at Vauxhall Bondway Interchange LB5 (at 58%) and at Streatham Green LB6 (at 27%) was below the 75% threshold. The results were therefore annualised using methodology described in London Local Air Quality Management Technical Guidance LLAQM.TG(16). The table below shows the process of annualisation and the resultant annualisation factors used. We have used data from three nearby urban background monitoring stations which had at least 85% data capture and which had all their results ratified at the time of writing. Urban background monitoring sites chosen for annualisation: Southwark – Elephant and Castle (SK6), City of London – Sir John Cass School (CT3) and Camden – Bloomsbury (BL0) are all representative of typical London urban background locations and are located within radiuses of between 1 and 13 miles from either Vauxhall Bondway or Streatham Green, well within the recommended radius of under 50 miles.

| Site | Site Type | Annual Mean ($A_m$) ($\mu g/m^3$) $NO_2$ | Period Mean ($P_m$) ($\mu g/m^3$) $NO_2$ | | Ratio $A_m/P_m$ | Annual Mean ($A_m$) ($\mu g/m^3$) $PM_{10}$ | Period Mean ($P_m$) ($\mu g/m^3$) $PM_{10}$ | Ratio $A_m/P_m$ | Annual Mean ($A_m$) ($\mu g/m^3$) $PM_{10}$ | Period Mean ($P_m$) ($\mu g/m^3$) $PM_{10}$ | | Ratio $A_m/P_m$ |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 2016 | 01/01/16 to 10/06/16 ; 08/10/16 to 31/12/16 (periods of valid data at LB6) | | | 2016 | 09/06/16 to 31/12/16 (periods of valid data at LB5) | | 2016 | 01/01/16 to 04/02/16; 25/02/16 to 23/03/16; 12/04/16 to 04/05/16 ; 06/12/16 to 31/12/16 (periods of valid data at LB6) | | |
| Southwark – Elephant and Castle (SK6) | Urban background | 39 | 41.3 | 45 | 0.87 | 26 | 20.5 | 1.27 | 25.6 | 21.6<br>33.7<br>20.8<br>33 | 27.3 | 0.93 |
| | | | 48.6 | | | | | | | | | |
| City of London - Sir John Cass School (CT3) | Urban background | 42 | 44.2 | 46.9 | 0.89 | 24 | 24.4 | 0.98 | 24.4 | 23.9<br>30.8<br>20.4<br>32.7 | 27 | 0.9 |
| | | | 49.5 | | | | | | | | | |
| Camden - Bloomsbury (BL0) | Urban background | 42 | 45.9 | 49 | 0.86 | 20 | 24.4 | 0.82 | 19.9 | 17<br>24.6<br>14.4<br>29.7 | 21.4 | 0.93 |
| | | | 52.3 | | | | | | | | | |
| **Annualisation factor** | | | **Average** | | **0.87** | | **Average** | **1.02** | | **Average** | | **0.92** |

Distance Adjustment

All $NO_2$ results have been adjusted for distance to the point of relative public exposure as per Table B using Defra $NO_2$ fall-off tool. For comparison purposes values in brackets in Table D show actual annual mean readings at each monitoring station.

## Appendix B Full Monthly Diffusion Tube Results for 2016

### Table M. $NO_2$ Diffusion Tube Results

Lambeth did not carry out continuous diffusion tube monitoring.