# Royal Borough of Kensington and Chelsea
# Air Quality Annual Status Report for 2015
# Date of publication: 01 August 2016

This report provides a detailed overview of air quality in the Royal Borough of Kensington and Chelsea during 2015. It has been produced to meet the requirements of the London Local Air Quality Management statutory process[1].

## Contact details

Elizabeth Fonseca
Environmental Quality Manager
Royal Borough of Kensington and Chelsea
Council Offices
37 Pembroke Road
W8 6PW
airquality@rbkc.gov.uk
www.rbkc.gov.uk

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

## CONTENTS



**Tables**

**Figures**



**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*

Following a major public consultation in the summer of 2000 a decision was reached by the full Council to declare the whole of the borough an Air Quality Management Area (AQMA). The Order making the declaration came into force on the 6th December 2000 and was based on exceedences of nitrogen dioxide ($NO_2$) and particulate matter ($PM_{10}$).

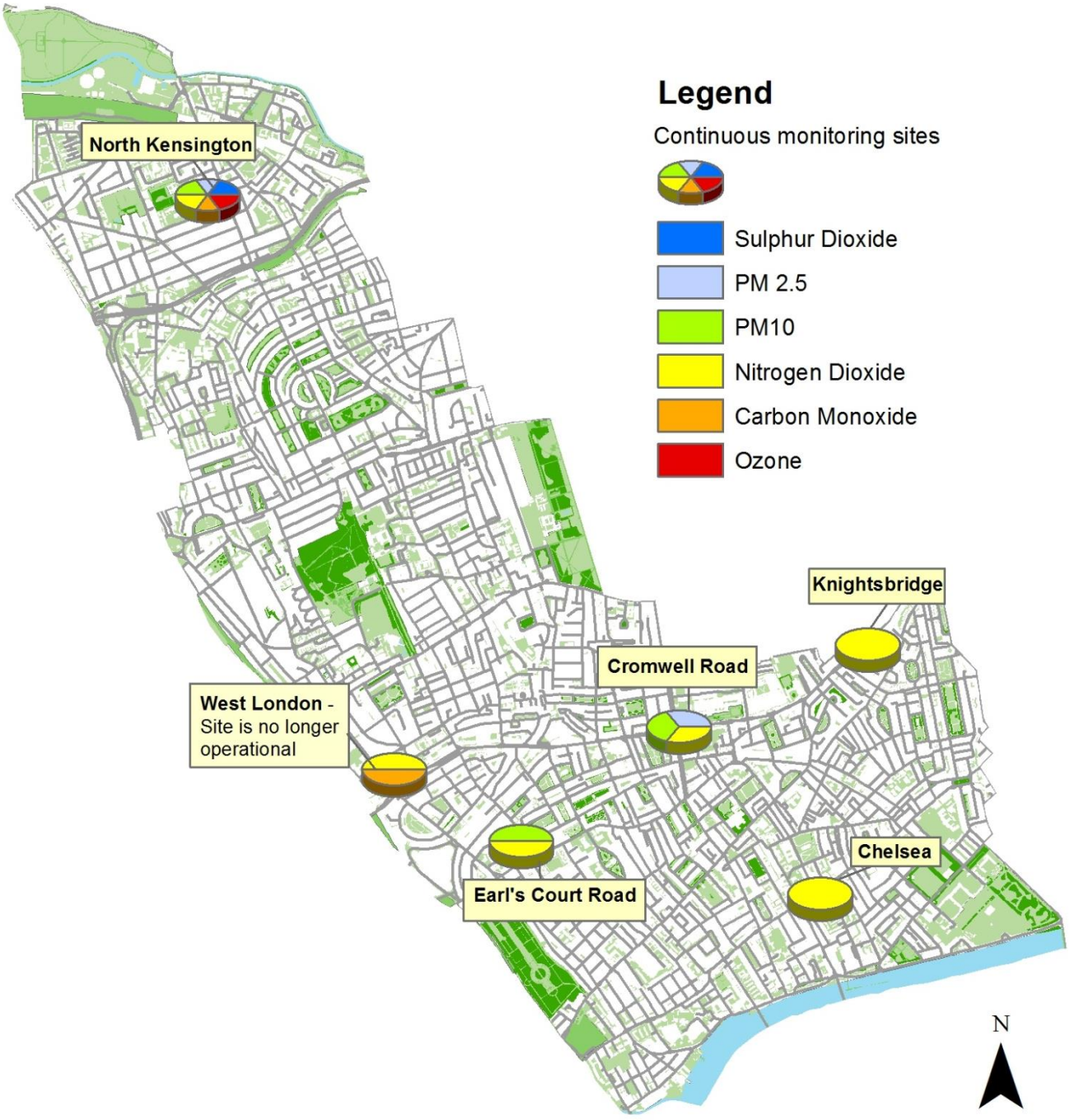
**Figure 1. Map of RBKC AQMA Boundary**

**Table B. Details of Automatic Monitoring Sites for 2015**

| Site Code | Site Name | OS Grid Ref | | Site Type | In AQMA? | Does this location represent worst-case exposure | Relevant exposure (Y/N) 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 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| KC1 | North Kensington | X524045 | Y 181752 | Urban background LAQN & AURN affiliate | Y | N | Y - 10m | Approx within 8m of St Charles Square | 3 | Nitrogen oxides<br>$PM_{10}$<br>Carbon monoxide<br>Sulphur dioxide<br>Ozone<br>Other<br>Defra/ERG monitoring undertaken: $PM_{10}$ & $PM_{2.5}$ | Chemiluminescent<br>FDMS and TEOM<br>GFC<br>Fluorescence UV<br>Photometric<br><br>FDMS , partisols |
| AURN to Sept 2012 | Cromwell Rd/ Cromwell Rd 2 | X 26524 | Y 178965 | Roadside, AURN | Y | N | Y - 10m | 4m from Cromwell Road | 2 | Nitrogen oxides<br>Carbon monoxide<br>Sulphur dioxide<br>Other monitoring undertaken: Lead and heavy metals | Chemiluminescent<br>GFC<br>Fluorescence UV<br><br>Partisol |
| KC2 | Cromwell Rd 2 | X 26524 | Y 178965 | Roadside, LAQN | Y | N | Y - 10m | Approx within 4m of Cromwell Rd and 5m of Queens Gate. | 2 | $PM_{10}$<br>$PM_{2.5}$ | FDMS<br>FDMS |
| AURN | West London Closed in 2007 | X 25026 | Y 178741 | Urban background AURN | Y | N | n/a | 50m from Warwick Rd | n/a | Nitrogen oxides<br>Carbon monoxide | Chemiluminescent |
| | Knightsbridge | | | Kerbside, | Y | Y | Y – 1m | Located on | 3 | Nitrogen oxides | Chemiluminescent |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| KC3 | | X 27518 | Y 179395 | LAQN | | | | the kerb of Hans Road 1.5 and 4m from Brompton Rd | | | |
| KC4 | Kings Rd Chelsea | X 27268 | Y 178089 | Roadside, LAQN | Y | N | Y 14m | Approx 8m from Kings Rd | 3 | Nitrogen oxides | Chemiluminescent |
| KC5 | Earls Court | X 25695 | Y 178363 | Kerbside, LAQN | Y | Y | Y -1m | Sited on the kerb of Earls Court Rd (0.5m) | 2 | $PM_{10}$ gravimetric Nitrogen oxides | Partisol plus Chemiluminescent |

**Figure 2. Map of Automatic Monitoring Sites**






Status: Final
Date: April 2014
Author:Environmental Quality

**Table C. Details of Non-Automatic Monitoring Sites for 2015**

| Site ID | Site Name | OS Grid Ref X (m) and Y (m) | | Site Type | In AQMA? | Distance from monitoring site to relevant exposure (m). Relevant exposure (y/n). | 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) | Worst-case Location ? |
|---|---|---|---|---|---|---|---|---|---|---|---|
| KC31 | Ladbroke Grove/Nth Ken Library | X 524342 | Y 181271 | Roadside | Y | Y – 6 | 3.5 | 5 | $NO_2$ | N | No |
| KC32 | Holland Park | X 524784 | Y 179599 | Urban Background | Y | Y – 5 | 380 | 4 | $NO_2$ | N | No |
| KC33 | Cromwell Rd/ Earls Court Rd | X 525355 | Y 178841 | Roadside | Y | Y – 1 | 1.1 | 2.1 | $NO_2$ | N | Yes |
| KC34 | Dovehouse Street | X 527164 | Y 178103 | Urban Centre | Y | Y – 30 | 26 | 2.8 | $NO_2$ | N | No |
| KC35 | Brompton Road/ Cottage Place | X 527192 | Y 179185 | Roadside | Y | Y – 40 | 8 | 1.5 | $NO_2$ | N | No |
| KC38 | Earls Court Station | X 525548 | Y 178556 | Roadside | Y | Y - 1 | 1.7 | 2.7 | $NO_2$ | N | Yes |
| KC39 | Lots Road/ Upcerne Road | X 526317 | Y 177022 | Roadside | Y | Y – 30 | 8.1 | 2.5 | $NO_2$ | N | No |
| KC40 | Brompton Road | X 527214 | Y 179153 | Urban Centre | Y | Y – 20 | 65 | 2.7 | $NO_2$ | N | No |
| KC41 | Ladbroke Crescent | X 524294 | Y 181200 | Urban Background | Y | Y – 8 | 70 | 2.2 | $NO_2$ | N | No |
| KC42 | Pembridge Square Library | X 525191 | Y 180705 | Roadside | Y | Y – 9 | 6 | 3.1 | $NO_2$ | N | No |
| KC43 | St Marks Grove | X 525950 | Y 177487 | Urban Background | Y | Y – 12 | 38 | 2.3 | $NO_2$ | N | No |
| KC44 | Donne Place | X 527335 | Y 178810 | Urban Background | Y | Y – 15 | 55 | 2.4 | $NO_2$ | N | No |
| KC45 | Chatsworth Court | X 525263 | Y 178936 | Roadside | Y | Y – 13 | 13 | 2 | $NO_2$ | N | No |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| KC46 | Marlborough Court-closed | X 525157 | Y 178892 | Roadside | Y | Y n/a | 8 | 2 | $NO_2$ | N | No |
| KC47 | Sion Manning School | X 524046 | Y 181758 | Urban Background | Y | Y - 10 | 8.5 | 2.1 | $NO_2$ | Y | No |
| KC48 | Sloane Square | X 528011 | Y 178675 | Roadside | Y | Y – 1 | 7 | 3 | $NO_2$ | N | No |
| KC49 | Harrods | X 527516 | Y 179395 | Urban Centre | Y | Y – 1 | 4 | 2.5 | $NO_2$ | Y | Yes |
| KC50 | Chelsea Physic Garden (Gate) | X 527726 | Y 177727 | Roadside | Y | Y – 1 | 4 | 2.9 | $NO_2$ | N | No |
| KC51 | Chelsea Physic Garden (Met Station) | X 527690 | Y 177800 | Urban Background | Y | Y – 3 | 92 | 1.5 | $NO_2$ | N | No |
| KC52 | Sloane Avenue | X 527411 | Y 178659 | Roadside | Y | Y – 5 | 2.6 | 2.4 | $NO_2$ | N | No |
| KC53 | Walmer House | X 523792 | Y 181189 | Urban Background | Y | Y – 20 | 12.5 | 2.3 | $NO_2$ | N | No |
| KC54 | Cromwell Rd/ Natural History Museum | X 526550 | Y 178968 | Roadside | Y | Y – 10 | 3.1 | 2.6 | $NO_2$ | y | No |
| KC55 | Blantyre St | X 526608 | Y 177429 | Urban Background | Y | Y - 20 | 100 | 3 | $NO_2$ | N | No |
| KC56 | Chelsea Old Town Hall | X 527268 | Y 178089 | Roadside | Y | Y - 14 | 9 | 3.1 | $NO_2$ | Y | No |
| KC57 | Pavilion St/ Sloane Ave | X 527889 | Y 179145 | Roadside | Y | Y – 25 | 3 | 2.4 | $NO_2$ | N | No |
| KC58 | Kensington H St/Kensington Church St | X 525630 | Y 179674 | Roadside | Y | Y – 1 | 13 | 2.7 | $NO_2$ | N | No |
| KC59 | Kensington High St/Argyll St | X 525342 | Y 179464 | Kerbside | Y | Y - 1 | 0.7 | 2.5 | $NO_2$ | N | No |
| KC60 | Old Brompton Rd/ | X 526231 | Y 178425 | Kerbside | Y | Y – 8 | 0.7 | 2.5 | $NO_2$ | N | No |

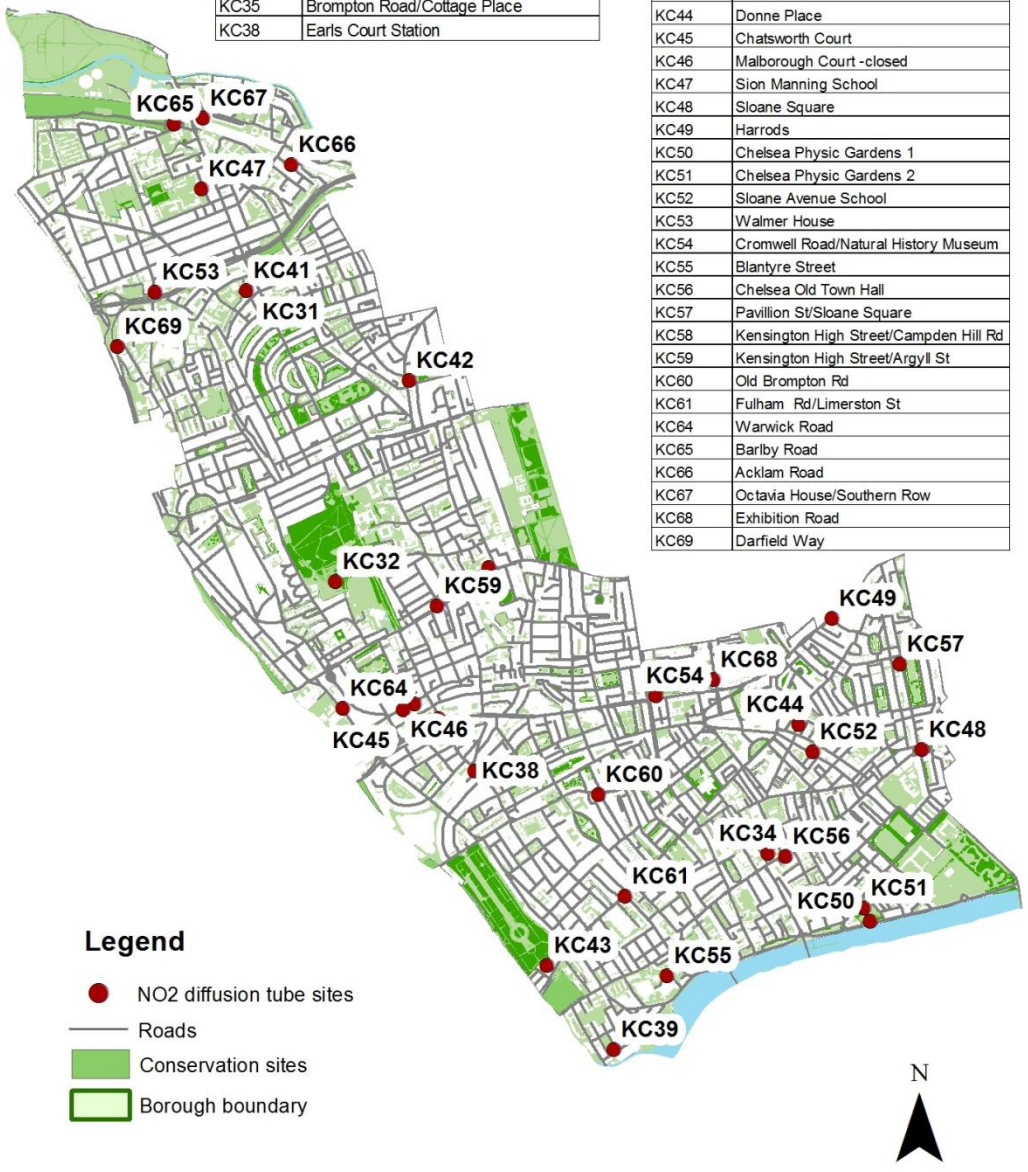
| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | Draycott Ave | | | | | | | | | | |
| KC61 | Fulham Rd/ Limerston St | X 526377 | Y 177867 | Roadside | Y | Y – 20 | 10 | 2.4 | $NO_2$ | N | No |
| KC64 | Warwick Road | X 524825 | Y 178902 | Roadside | Y | Y – 8 | 3.5 | 2.6 | $NO_2$ | N | No |
| KC65 | Barlby Road | X 523899 | Y 182113 | Roadside | Y | Y – 20 | 0.5 | 2.5 | $NO_2$ | N | No |
| KC66 | Acklam Road | X 524541 | Y 181893 | Railway | Y | Y – 18 | 16 | 2.5 | $NO_2$ | N | No |
| KC67 | Southern Row | X 524056 | Y 182148 | Railway | Y | Y – 55 | 38 | 2.5 | $NO_2$ | N | Yes |
| KC68 | Exhibition Road | X 526863 | Y 179060 | Kerbside | Y | Y – 0.5 | 0.5 | 2.1 | $NO_2$ | N | Yes |
| KC69 | Darfield Way | X 523587 | Y180893 | Background | Y | Y – 2 | 11.7 | 2.0 | NO2 | N | No |
| KC01 | Ladbroke Grove/Nth Ken Library | X 524342 | Y 181271 | Roadside | Y | Y – 6 | 3.5 | 5.5 | Benzene | N | No |
| KC02 | Holland Park | X 524784 | Y 179599 | Urban Background | Y | Y – 5 | 380 | 4 | Benzene | N | No |
| KC03 | Warwick Rd - Petrol Station (forecourt) now closed | X 524911 | Y 178736 | Petrol station | Y | Y – n/a | N/A | 3 | Benzene | N | No |
| KC04 | Dovehouse Street | X 527111 | Y 178165 | Urban Background | Y | Y – 30 | 45 | 2.2 | Benzene | N | No |
| KC05 | Pembridge Square Library | X 525191 | Y 180705 | Roadside | Y | Y – 9 | 6 | 4 | Benzene | N | No |
| KC0X | Old Brompton Rd/ Clareville Grove Petrol St | X 526496 | Y 178553 | Petrol station | Y | Y - 3 | 12 | | Benzene | N | No |

Grey highlighted row denotes closed site
Orange highlighted rows denote Benzene locations

**Figure 3. Map of Non-Automatic Monitoring**

| Site code | Diffusion tube location |
|---|---|
| KC31 | Ladbroke Grove/North Kensington Library |
| KC32 | Holland Park |
| KC33 | Cromwell Road/Earls Court Road |
| KC34 | Dovehouse Street |
| KC35 | Brompton Road/Cottage Place |
| KC38 | Earls Court Station |

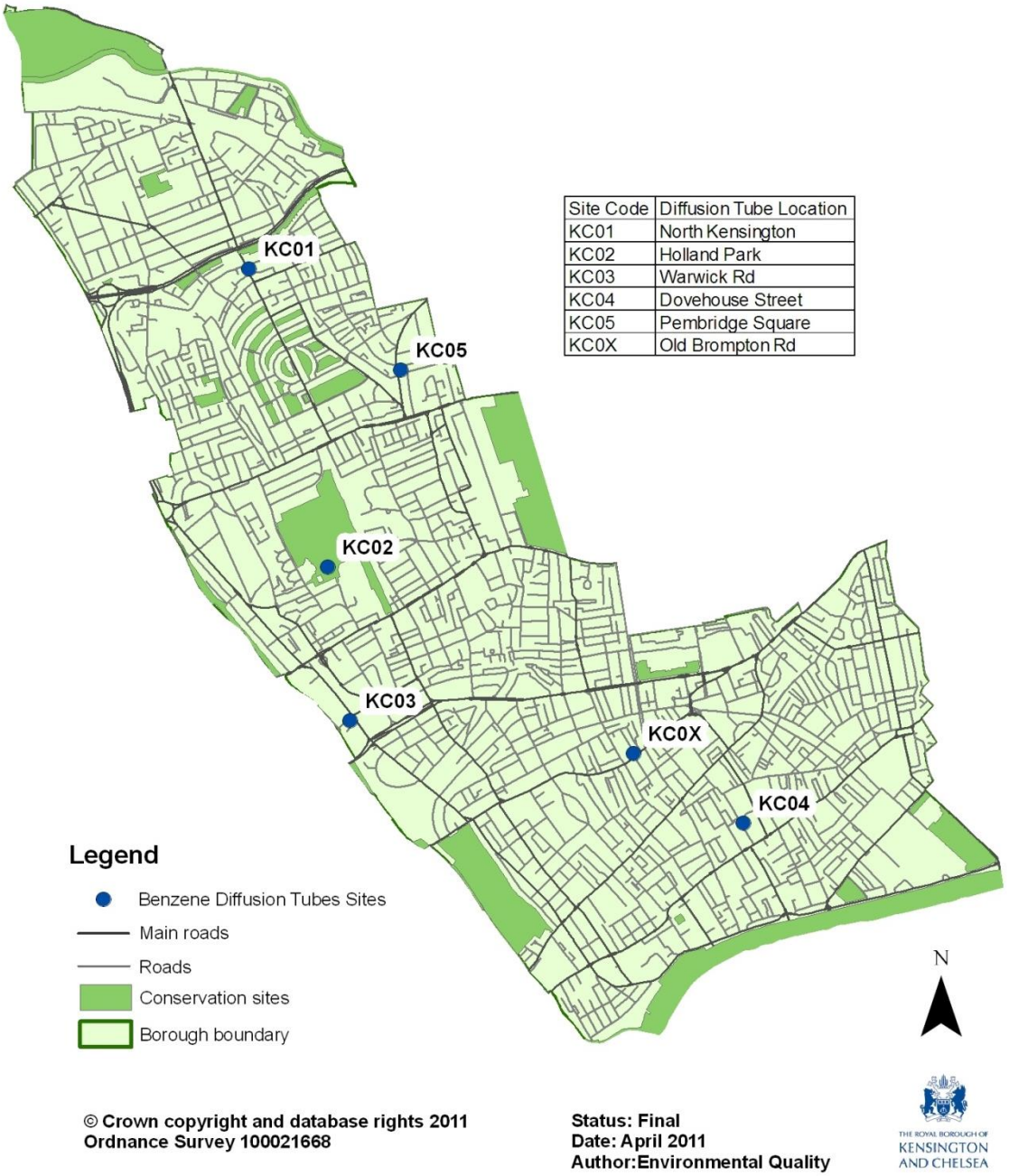
| Site code | Diffusion tube location |
|---|---|
| KC39 | Lots Road/Upcerne Road |
| KC40 | Brompton Road |
| KC41 | Ladbroke Crescent |
| KC42 | Pembridge Square |
| KC43 | St Marks Grove |
| KC44 | Donne Place |
| KC45 | Chatsworth Court |
| KC46 | Malborough Court -closed |
| KC47 | Sion Manning School |
| KC48 | Sloane Square |
| KC49 | Harrods |
| KC50 | Chelsea Physic Gardens 1 |
| KC51 | Chelsea Physic Gardens 2 |
| KC52 | Sloane Avenue School |
| KC53 | Walmer House |
| KC54 | Cromwell Road/Natural History Museum |
| KC55 | Blantyre Street |
| KC56 | Chelsea Old Town Hall |
| KC57 | Pavillion St/Sloane Square |
| KC58 | Kensington High Street/Campden Hill Rd |
| KC59 | Kensington High Street/Argyll St |
| KC60 | Old Brompton Rd |
| KC61 | Fulham Rd/Limerston St |
| KC64 | Warwick Road |
| KC65 | Barlby Road |
| KC66 | Acklam Road |
| KC67 | Octavia House/Southern Row |
| KC68 | Exhibition Road |
| KC69 | Darfield Way |






Status: Final
Date: April 2014
Author:Environmental Quality

**Figure 4. Map of non-automatic benzene monitoring sites**



## *1.2 Comparison of Monitoring Results with AQOs*

**Table D. Annual Mean NO2 Ratified and Bias-adjusted Monitoring Results (μg $m^{-3}$)**

| Site ID | Location | Site Type | Valid data capture for monitoring period % [a] | Valid data capture 2015 % [b] | 2015 Data Capture No. of months | Annual mean concentrations (μg/$m^3$) Adjusted for bias (shown below) | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | 2009 DT BAF 1.00 | 2010 DT BAF 1.06 | 2011 DT BAF 1.02 | 2012 DT BAF 1.04 | 2013 [c] DT BAF 1.14 | 2014[c] DT BAF 1.03 | 2015[c] DT BAF 1.07 |
| **KC1** | **North Kensington** | Automatic | 99 | 99 | 11/12 | 33 | 37 | 36 | 37 | 37 | 34[d] | **32** |
| **KC5** | **Earls Court** | Automatic | 99 | 99 | 11/12 | **107** | **113** | **100/ 101** | **101** | ***95*** | **93** | **91** |
| **KC2** | **Cromwell Rd 2** | Automatic | 63 | 63 | 8 | **72** | **74** | **66** | **69** | **60** | **56** | **55** |
| **KC3** | **Knightsbridge** | Automatic | 97 | 97 | 11/12 | **90** | **91** | **81** | **92** | **90** | **72[d]** | **71** |
| **KC4** | **Kings Road Chelsea** | Automatic | 100 | 100 | 12 | **93** | **91** | **91** | **92/ 93** | **84** | **76[d]** | **73** |
| **KC31** | **Ladbroke Grove/Nth Ken Library** | Diffusion tube (DT) | *100* | *100* | 12 | **57.7** | **60.0** | **52.9** | **52.6** | **60.9** | **53.5** | **49.26** |
| **KC32** | **Holland Park** | Diffusion tube (DT) | *100* | *100* | 12 | 31.7 | 32.8 | 29.0 | 29.1 | 34.0 | 29.2 | 27.49 |
| **KC33** | **Cromwell Road/Earls Court Rd** | Diffusion tube (DT) | 92 | 92 | 11 | **90.9** | **91.2** | **83.6** | **84.2** | **106.3** | **98.2** | **84.45** |
| **KC34** | **Dovehouse Street** | Diffusion tube (DT) | 100 | 100 | 12 | **47.2** | **44.9** | **42.6** | **42.4** | **50.3** | **45.1** | **40.76** |
| **KC35** | **Brompton Road/Cottage Place** | Diffusion tube (DT) | 100 | 100 | 12 | **67.9** | **66.8** | **71.8** | **81.3** | **90.9** | **82.4** | **75.68** |
| **KC38** | **Earls Court Station** | Diffusion tube (DT) | 100 | 100 | 12 | **101.2** | **96.1** | **95.3** | **100.7** | **108.8** | **100.7** | **99.01** |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **KC39** | **Lots Road/Upcerne Road** | Diffusion tube (DT) | 100 | 100 | 12 | **41.4** | **40.7** | 33.4 | 34.0 | 37.1 | 34.5 | 32.51 |
| **KC40** | **Brompton Road** | Diffusion tube (DT) | 100 | 100 | 12 | **51.6** | **49.5** | **49.9** | **49.1** | **52.9** | **44.1** | **41.56** |
| **KC41** | **Ladbroke Crescent** | Diffusion tube (DT) | 100 | 100 | 12 | 39.6 | **40.9** | 35.5 | 34.8 | **41.7** | 36.7 | 34.60 |
| **KC42** | **Pembridge Square Library** | Diffusion tube (DT) | 92 | 92 | 11 | **46.3** | **46.4** | **43.5** | **43.8** | **50.9** | **42.4** | **41.16** |
| **KC43** | **St Marks Grove** | Diffusion tube (DT) | 100 | 100 | 12 | 39.1 | **40.8** | 34.8 | 36.5 | **47.1** | 38.7 | 34.22 |
| **KC44** | **Donne Place** | Diffusion tube (DT) | 100 | 100 | 12 | **42.1** | **45.3** | 39.9 | **42.1** | **47.0** | 40.0 | 39.60 |
| **KC45** | **Chatsworth Court** | Diffusion tube (DT) | 100 | 100 | 12 | **50.5** | **52.0** | **51.7** | **50.5** | **57.9** | **53.5** | **48.58** |
| **KC47** | **Sion Manning School** | Diffusion tube (DT) | 100 | 100 | 12 | 35.61 | 37.1 | 32.3 | 33.8 | 36.7 | 32.9 | 27.45 |
| **KC48** | **Sloane Square** | Diffusion tube (DT) | 100 | 100 | 12 | **81.8** | **86.3** | **82.4** | **80.8** | **86.6** | **73.9** | **63.03** |
| **KC49** | **Harrods** | Diffusion tube (DT) | 100 | 100 | 12 | **79.8** | **79.0** | **70.6** | **80.0** | **94.0** | **74.5** | **69.70** |
| **KC50** | **Chelsea Physic Garden (Gate)** | Diffusion tube (DT) | 100 | 100 | 12 | **58.9** | **57.5** | **56.4** | **58.5** | **62.9** | **59.4** | **48.19** |
| **KC51** | **Chelsea Physic Garden (Met Station)** | Diffusion tube (DT) | 100 | 100 | 12 | 37.1 | 36.8 | 33.2 | 33.5 | 36.6 | 33.3 | 31.58 |
| **KC52** | **Sloane Ave. nr Marlborough school** | Diffusion tube (DT) | 100 | 100 | 12 | **59.4** | **59.4** | **51.5** | **56.5** | **65.3** | **58.4** | **52.89** |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **KC53** | **Walmer House** | Diffusion tube (DT) | 100 | 100 | 12 | **49.6** | **49.4** | **46.3** | **48.5** | **53.6** | **48.4** | **42.60** |
| **KC54** | **Cromwell Rd/Natural History Museum** | Diffusion tube (DT) | 83 | 83 | 10 | **75.6** | **70.7** | **73.2** | **73.4** | **80.6** | **73.7** | **62.94** |
| **KC55** | **Blantyre St** | Diffusion tube (DT) | 100 | 100 | 12 | **43.2** | **44.3** | **40.6** | **41.7** | **48.8** | **44.1** | 35.45 |
| **KC56** | **Chelsea Old Town Hall** | Diffusion tube (DT) | 100 | 100 | 12 | **81.9** | **80.6** | **84.3** | **87.1** | **88.2** | **74.4** | **63.65** |
| **KC57** | **Pavilion St/Sloane Ave** | Diffusion tube (DT) | 100 | 100 | 12 | **55** | **57.7** | **52.5** | **53.5** | **59.0** | **54.4** | **43.62** |
| **KC58** | **Kensington H St/Kensington Church St** | Diffusion tube (DT) | 100 | 100 | 11 | **62.8** | **68.2** | **58.1** | **62.4** | **75.0** | **58.9** | **50.94** |
| **KC59** | **Kensington H St/Argyll St** | Diffusion tube (DT) | 100 | 100 | 12 | **86.1** | **82.2** | **83.0** | **83.4** | **86.9** | **74.9** | **70.31** |
| **KC60** | **Old Brompton Rd/Draycott Ave** | Diffusion tube (DT) | 100 | 100 | 12 | **76.4** | **78. 9** | **69.3** | **68.6** | **75.1** | **69.9** | **61.22** |
| **KC61** | **Fulham Rd/Limerston St** | Diffusion tube (DT) | 100 | 100 | 12 | **60** | **63.5** | **60.5** | **54.9** | **64.7** | **54.6** | **51.54** |
| **KC64** | **Warwick Rd** | Diffusion tube (DT) | 100 | 100 | 12 | **51.7** | **63.0** | **49.0** | **49.6** | **55.5** | **54.8** | **50.55** |
| **KC65** | **Barlby Road*** | Diffusion tube (DT) | 100 | 100 | 12 | 37.3 | **40.8** | 38.8 | 38.0 | **47.2** | **40.5** | 33.08 |
| **KC66** | **Acklam Road*** | Diffusion tube (DT) | 100 | 100 | 12 | **41.6** | **45 9** | **43.5** | 39.9 | **45.4** | **44.2** | 34.43 |
| **KC67** | **Southern Row*** | Diffusion tube (DT) | 100 | 100 | 12 | 39.3 | **43.6** | **43.8** | **42.3** | **48.7** | **44.2** | 36.21 |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **KC68** | **Exhibition Road** | Diffusion tube (DT) | 100 | 100 | 12 | **n/a** | **55.9** | **<u>60.6</u>** | **48.0** | **58.3** | **52.9** | **44.64** |
| **KC69** | **Darfield Way** | Diffusion tube (DT) | 100 | 100 | 12 | **n/a** | **n/a** | **<u>n/a</u>** | **n/a** | **n/a** | **48.7** | 39.34 |

KC47 and KC54 are the mean results of triplicate exposure. Additionally KC47, KC49, KC54 and KC56 are all co-located with continuous analysers.
**Bold** indicates an exceedence of the annual mean objective of 40 µg/$m^3$.
NO2 annual means in excess of 60 µg $m^3$ indicating a potential exceednace of the NO2 hourly mean AQS objective are shown in **<u>bold and underlined</u>**
Where the capture rate is less than 90% for the year results may not be representative of the full year and should only be used as for guidance only

[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] Data capture for Cromwell Rd automatic monitoring site is 63% for 2015. Means should be "annualised" in accordance with LLAQM Technical Guidance, if valid data capture is less than 75% (9 months) however this has not been undertaken. Source: Londonair.org.uk

d – LAQN ratified annual mean updated from previous year reported annual mean

DT = Diffusion Tube

BAF = Bias Adjustment Factor`

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

| Site ID | Location | Valid data capture for monitoring period % [a] | Valid data capture 2015 % [b] | Number of Hourly Means > 200 µgm$^{-3}$ | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | 2009 | 2010 | 2011 | 2012 | 2013 [c] | 2014 [c d] | 2015 [c] |
| **KC1** | **North Kensington** | 99 | 99 | 0 | 0 | 0 | 1 | 0 | 0 | 0 |
| **KC5** | **Earls Court*** | 99 | 99 | **411** | **515** | **386** | **323** | **140** | ***212*** | **135** |
| **KC2** | **Cromwell Rd 2** | 63 | 63 | 3 | 1 | 4 | 2 | 0 | *0 (119.7)* | *0* |
| **KC3** | **Knightsbridge** | 97 | 97 | **371** | **307** | **181** | **500** | **466** | ***109*** | **97** |
| **KC4** | **Kings Road Chelsea** | 100 | 100 | **71** | **63** | **76** | **74** | **47** | *5* | 9 |

Notes: Exceedance of the $NO^2$ short term AQO of 200µgm$^3$ over the permitted 18 days per year 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%, however this has not been undertaken.

[d] Means the 99.8$^{th}$ percentile of hourly means is shown in brackets as the period of valid data was less than 90%

2014 data (in italics) is provisional and should be treated with caution. Source Londonair.org.uk.

**Bold** indicates an exceedence of the hourly mean objective.

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

| Site ID | Location and method | Adjst. Method | Data Capture % | | | | | | Valid data capture for monitoring period 2015 % [a] | Valid data capture 2015 % [b] | Annual mean concentrations (μg/m$^3$) | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | | | 2009 | 2010[c] | 2011[c] | 2012[c] | 2013 | 2014[c] | 2015[c] |
| KC1 | N Kensington TEOM | VCM | 98 | 96 | 93 | 97 | 99 | 96 | 97 | 97 | 21 | 20 | 23 | 20 | 23 | 17 | 16 |
| KC1 | N Kensington FDMS | None | 86 | 64 | 84 | 81 | 95 | 74 | 97 | 97 | 21 | 21 | 24 | 20 | 23 | *23* | 20 |
| AURN | N Kensington Partisol | None | 81 | 95 | 95 | 98 | 98 | 100 | 99 | 99 | 20 | 16 | 19 | 18 | *19* | 18 | 16 |
| KC2 | Cromwell Rd 2 VCM corrected /FDMS from 2010 | VCM | 95 | 62 | 74 | 67 | 91 | 63 | 51 | 51 | 28 | 29 | 27 | 27 | 26 | *25* | *23* |
| KC5 | Earls Court Partisol | None | 95 | 98 | 87 | 96 | 87 | 92 | 95 | 95 | 36 | 34 | 33 | 34 | 34 | 31 | 27 |

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

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

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

[c] Means should be "annualised" in accordance with LLAQM Technical Guidance, if valid data capture is less than 75%, however this has not been undertaken

Data in *italics* is provisional and should be treated with caution.

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

| Site ID | Location and method | Valid data capture for monitoring period % [a] | Valid data capture 2015 % [b] | Number of Daily Means > 50 µgm$^{-3}$ Number of exceedences of 24 hourly mean >50 µg/m$^3$ - 35 are permitted | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | 2009 | 2010 [c] | 2011 [c] | 2012 [c] | 2013 | 2014 [c d] | 2015 [c] |
| KC1 | N. Kensington TEOM | 97 | 97 | 6 | 3 | 15 | 7 | 9 | *0* | *1* |
| KC1 | North Kensington FDMS | 97 | 97 | 7 | 3 | 17 | 12 | 9 | *10 (36.7)* | *7* |
| AURN | North Kensington Partisol | 99 | 99 | 0 | 2 | 14 | 11 | *8* | *N/A* | *0* |
| KC2 | Cromwell Rd 2 TEOM/FDMS | 51 | 51 | 14 | 11 | 8 (42.1) | 13 | 12 | *11 (39.1)* | *4* |
| KC5 | Earls Court Partisol | 95 | 95 | 42 | 30 | 42 | 43 | 39 | *25* | *15* |

Data in *italics* is provisional and should be treated with caution.

Notes: Exceedance of the PM $_{10}$ short term AQO of 50 µgm$^3$ over the permitted 35 days per year or where the 90.4$^{th}$ percentile exceeds 50 µgm$^3$ 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%, however this has not been undertaken

[d]Means the 99.8$^{th}$ percentile of hourly means in brackets as the period of valid data was less than 90%

**Table H. Annual Mean PM2.5 Automatic Monitoring Results (μg m-3)**

| Site ID | Location | Valid data capture for monitoring period % [a] | Valid data capture 2015 % [b] | Annual Mean Concentration (μgm$^{-3}$) (Cap Level 25μg/m3) | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 [C] | 2015 [c] |
| KC1 | North Kensington FDMS | 97 | 97 | 19.7 | 14 | 16.4 | 14.5 | 14.7 | 15.9 | 10.9 |
| AURN | N Kensington Partisol | 89 | 89 | 11 | 11 | 14 | 11 | 12 | 10 | 9 |
| KC2 | Cromwell Rd 2 FDMS | 51 | 51 | n/a | 16 | 16.6 | 14.8 | 15.8 | N/A | *14.7* |

Notes: Exceedance of the $PM_{2.5}$ annual mean AQO of 25 μgm$^3$ are shown in **bold**

Data in *italics* is provisional and should be treated with caution.

[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%, however this has not been undertaken

**Table I. SO2 Automatic Monitor Results for 2015: Comparison with Objectives**

| Site ID | Location | Valid data capture for monitoring period % [a] | Valid data capture 2015 % [b] | Annual Mean | Number of Exceedences 2015 | | |
|---|---|---|---|---|---|---|---|
| | | | | | 15-minute mean Objective (>266 μg/m³) | 1-hour mean Objective (>350 μg/m³) | 24-hour mean Objective (>125 μg/m³) |
| **KC1** | **North Kensington** | 99 | 99 | 2.24 | 0 | 0 | 0 |

Exceedances of the $SO_2$ AQOs are shown in **bold** (15-min mean >266 μg/m³ = 35 allowed a year, 1-hour mean >350 μg/m³= 24 allowed a year, 24-hour mean >125 μg/m³ = 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%.

**Table Benzene Annual Average Benzene Levels Using Diffusion Samplers (μg/m3)**

| Year | KC01 Ladbroke Grove/Nth Ken Library | KC02 Holland Park | KC03 Warwick Rd Petrol St. (forecourt) | KC04 Dovehouse St | KC05 Pembridge Square Library | KC0X Old Brompton Rd/Clareville Grove Petrol St |
|---|---|---|---|---|---|---|
| 2000 | 5.1 | 3.1 | 11.4 | 2.6 | 4.2 | - |
| 2001 | 4.3 | 2.0 | 11.0 | 3.7 | 2.9 | - |
| 2002 | 4.9 | 1.8 | 12.5 | 2.1 | 2.6 | - |
| 2003 | 3.9 | 2.4 | 9.6 | 2.5 | 2.9 | - |
| 2004 | 2.1 | 1.2 | 9.5 | 1.4 | 1.6 | - |
| 2005 | 2.0 | 1.3 | 9.2 | 1.4 | 1.8 | - |
| 2006 | 2.3 | 1.9 | 9.2 | 1.7 | 2.0 | 5.7 |
| 2007 | 2.2 | 1.6 | Closed | 1.5 | 1.7 | 3.2 |
| 2008 | 2.3 | 1.6 | - | 1.6 | 2.0 | 2.8 |
| 2009 | 2.1 | 1.6 | - | 1.7 | 1.8 | 2.6 |
| 2010 | 1.6 | 1.0 | - | 1.2 | 1.6 | 1.7 |
| 2011 | 1.4 | 1.3 | - | 1.4 | 1.9 | 2.8 |
| 2012 | 1.2 | 1.1 | - | 1.0 | 1.1 | 1.6 |
| 2013 | 1.0 | 0.7 | - | 0.7 | 0.9 | 1.2 |

| | | | | | | |
|---|---|---|---|---|---|---|
| 2014 | 0.9 | 0.7 | - | 0.7 | 0.8 | 1.3 |
| 2015 | 1.25 | 0.78 | - | 1.0 | 0.94 | 1.8 |

**Monitoring Data Summary:**

We currently undertake sampling at five locations using diffusion tubes, these include two roadside, two background, and one site in close proximity to a petrol station forecourt. The petrol station has operated stage two (in addition to stage one) vapour recovery since 2007.

Two objectives have been set for the assessment of benzene, a running annual mean of 16.25μg/$m^3$ to be met by 31.12.2003 and a more stringent annual mean of 5μg/$m^3$ to be achieved by 31.12.2010.

The highest levels of benzene have generally been recorded at the petrol station sites. The table above shows the 2010 objective has been met at all sites since 2007; the 2003 (16.25μg/$m^3$) objective has been met since 2000 (the measured annual mean is assumed to be the equivalent of the running annual mean).

After an initial steep decline, all sites (apart from the petrol station site) have generally shown a much more gradual reduction. Whilst little change was observed between 2013 and 2014, results for 2015 show a slight increase between 2014 and 2015 across all sites has occurred.

## 2. Action to Improve Air Quality

### Table J. Commitment to Cleaner Air Borough Criteria

| Theme | Criteria | | Achieved (Y/N) | Evidence |
|---|---|---|---|---|
| **1. Political leadership** | ***1.a*** | Pledged to become a Cleaner Air for London Borough (at cabinet level) by taking significant action to improve local air quality and signing up to specific delivery targets. | Y | The Council has made thispledge. |
| | ***1.b*** | Provided an up-to-date Air Quality Action Plan (AQAP), fully incorporated into LIP funding and core strategies. | Y | The 2016 Air Quality and Climate Change<br>Action Plan is available online at - https://www.rbkc.gov.uk/environment/air-quality/air-quality-and-climate-change-action-plan-2016-2021-0<br>*Incorporated into LIP process/public health via a number of projects including using LIP to match fund air quality projects including the Clean Air Better Buisness project. Regular programme Transport/Highways LIP meetings are held with air quality officers to discuss how air quality may be embedded in other LIP projects.* |
| **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 | Many relevant actions have been taken – examples given here are further explained in Table K:<br>• Action 1- Support vulnerable patients discharged from hospital with heart and lung conditions.<br>• Action 3 – Support school and community campaigns to reduce smoking at home.<br>• Action 65 – Promote green infrastructure (walls, roofs) and other eco-initiatives in schools.<br>• Also actions 6 and 8. |

| | | | | |
|---|---|---|---|---|
| | **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 | Many relevant actions have been taken – examples given here are further explained in Table K:<br>• Action 12 – Improve the energy efficiency of the six main Council buildings.<br>• Action 36 – Increase public awareness to reduce engine idling.<br>• Action 52 – Support businesses to reduce their emissions from deliveries.<br>• Also actions: 13, 14, 15, 16, 17, 35, 49, 50. |
| | **2.c** | Integrated transport and air quality, including by improving traffic flows on borough roads to reduce stop/start conditions | Y | Many relevant actions have been taken – examples given here are further explained in Table K:<br>• Action 40 – Encourage car clubs to go electric.<br>• Action 44 – Open up more one-way streets to cyclists using both directions.<br>• The Council has initiated a study of the Notting Hill road network to locate bus stops in better positions, close some road junctions and improve traffic flows.<br>• Also actions 37, 38, 43 |
| | **2.d** | Made additional resources available to improve local air quality, including by pooling its collective resources (s106 funding, LIPs, parking revenue, etc). | Y | The Council continues to draw on s106 funding (see Action 73) and LIP money. In 2015-16 £x of s106 and LIP funding was devoted to air quality work. |
| **3. Leading by example** | **3.a** | Invested sufficient resources to complement and drive action from others | Y | The Environmental Health Directorate continues to have 4 full-time equivalent posts to carry out its air quality obligations. It also gains from partnership work with the Climate Change Team and has been able to fund an extra post from s106 funding. |
| | **3.b** | Maintained an appropriate monitoring network so that air quality impacts within the borough can be properly understood | Y | The Council maintains 5 automatic monitoring stations and > 30 passive diffusion tube sampling sites, and has established a long-running data set to assess trends in pollution levels.. |

| | | | | |
|---|---|---|---|---|
| | **3.c** | Reduced emissions from council operations, including from buildings, vehicles and all activities. | Y | The Council set a target to reduce carbon emissions from its own operations and from key contractors by 40% by March 2020, based on the 2007/2008 levels.<br>In 2014/15 the Council reduced its own carbon emissions from its buildings, operations and contractors by **6,213 tonnes**, which reflects a reduction of nearly **27 per cent** when compared to baseline levels, and<br>○ It is estimated that this reduction in energy and resource use represented a cumulative saving of approximately **£3,649,000** since 2009/10.<br>○ This includes carbon produced from energy use from council and contractor offices and schools, waste and water consumption from council offices, energy consumed at leisure centres, street lighting and emissions from council and contractor fleet.<br><br>The Council completed a refurbishment of its main offices, improving insulation, deploying solar panels, double glazing and replacing boilers, which has resulted in carbon reduction, and a corresponding reduction in $NO_2$ emissions |
| | **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 | The Climate Change Team is working with individual teams championing the lease of electric vehicles, such as Parks Police and their electric van.<br>Suez is planning to make rounds more efficient Plans to reduce number of tips for refuse collection vehicles.<br>Potentially 5 new vehicles with euro 6 engines will be introduced in 2016/17.<br><br>Long-term (post 2016/2017)<br>• Sub-contractorSuez are interested in exploring bio-fuel and electric vehicle options once the technology is reliable. Suez has an internal team to investigate these potential technologies. |

| | | | | |
|---|---|---|---|---|
| **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 | The Planning Directorate confers with the Directorate of Environmental Health to ensure that all major applications are accompanied by an air quality assessment, and that proposals including CHP and biomass conform with the Mayor's Sustainable Design and Construction SPG Planning permissions, and conditions set, reflect the requirement for developments to be air quality neutral. (See Actions 28, 29) |
| | **4.b** | Collected s106 from new developments to ensure air quality neutral development, ***where possible*** | Y | (See Table K - Action 73) The amount collected for air quality purposes in 2015-16 was: £--------- |
| | **4.c** | Provided additional enforcement of construction and demolition guidance, with regular checks on medium and high risk building sites. | Y | (See Table K -Action 27) Developers of major sites are obliged to submit demolition/ construction management plans, and where required, to install automatic dust and air quality monitoring in accordance with the Mayor's Control of Dust and Emissions SPG. The monitoring data is scrutinized remotely by Council officers. Medium and high risk sites are routinely checked. |

| | | | | |
|---|---|---|---|---|
| **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 | The Kensington and Chelsea Health and Wellbeing Strategy is undergoing revision. The KCHWS consultation draft states the following:-(page 7) – "We will continue to encourage people to incorporate active travel into everyday journeys, create safer routes and raise participation in cycling. We will work to encourage the creation of school travel plans and cycle initiatives to contribute to reducing road traffic accidents. Our borough's poor air quality affects all of us – bringing forward everyone's death by nearly 16 months on average. This compares with the least polluted area, rural Cumbria, where the reduction in life is an average of 4 months. But it also affects vulnerable groups more acutely, particularly young children and people living with chronic heart and respiratory diseases".<br><br>One of the JSNA priorities is:<br>Creating sustainable communities and places that foster health and wellbeing (including satisfactory) air quality. |
| **6. Informing the public** | **6.a** | Raised awareness about air quality locally | Y | Breathe London, Airtext and Walkit schemes are promoted (see Table K - Action 2). Awareness raising also carried out see Actions: 24, 35, 36, 37, 41, 46, 49, 51, 69, |

### *2.1 Air Quality Action Plan Progress*

Table K provides a brief summary of the Royal Borough of Kensington and Chelsea progress against the Air Quality Action Plan, showing progress made this year. New projects which commenced in 2015 are shown at the bottom of the table.

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

| Measure | Action | Progress<br>• Emissions/Concentration data<br>• Benefits<br>• Negative impacts / Complaints<br>*Include emissions data and KPIs where possible. Please include recently completed projects as well as any new projects (which have commenced since you last reviewed your AQAP)* | Further information |
|---|---|---|---|
| **1**<br>**Support vulnerable hospital discharge patients with heart and lung conditions** | Provide air quality advice and home modifications to discharged hospital patients, particularly those most vulnerable (i.e. children/elderly) with heart and lung diseases. | Global Action Plan (GAP) is a leading air quality charity and has been commissioned to implement a project in LBHF (as well as WCC and RBKC) to mitigate the impact of poor air quality in vulnerable groups. GAP is producing resources for people living with COPD and CVD as well as training health care professionals and working with them to embed air quality considerations into their patient pathways. A final report is due later this year. | . |
| **2**<br>**Support and promote air quality awareness programmes** | Support and promote the schemes Breathe London, Airtext and Walkit to include CityAir/LondonAir and 'Breathe Better Together' principles to provide more information to a wider audience of subscribers. | The Public Health Grant funds the LBHF contribution to the AirText service which is run by Islington Council on behalf of all London boroughs. The Council continues to seek opportunities to promote these schemes. | |

| | | | |
|---|---|---|---|
| **3**<br><br>**Support school and community campaigns to reduce smoking at home** | Carry out air quality campaign through the 'Healthy School Partnership' at primary schools and 'Thrive Tribe' in the community to reduce domestic smoking at home. | 'Kick It' stop smoking provider commissioned by Public Health, are running a Smoke Free Homes and Cars campaign in Summer 2016. They will also be including 'Smoke Free Homes' pledges as part of their harm reduction programme. | |
| **4**<br><br>**Support initiatives to improve outdoor air quality** | Identify local needs including smoke free areas and air pollution abatement through 'Healthy Parks/Playgrounds' initiative. | Not started | |
| **5**<br><br>**Produce policy guidance on the use of e-cigarettes in the workplace** | Develop policy guidance for commercial premises on the use of e-cigarettes in the workplace to improve indoor air quality. | We have not yet produced any guidance for workplaces, but have recently (19/07/2016) received guidance from Public Health England which we are reviewing. | |
| **6**<br><br>**Promote initiatives to reduce smoking at home** | Ensure 'Smoke Free Homes' is promoted through the NHS 'Stop Smoking Service'. | 'Kick It' stop smoking provider commissioned by Public Health, are running a Smoke Free Homes and Cars campaign in Summer 2016. They will also be including 'Smoke Free Homes' pledges as part of their harm reduction programme. | |
| **7**<br><br>**Encourage cycling as a non-polluting mode of transport and to combat obesity** | Promote cycling through GPs, 'GP Navigator', 'Health Trainer' and 'Cycle Coordinator' schemes to improve heart/respiratory health, combat obesity and promote non-polluting transport modes. | Encouraging health trainer, NHS Health Check and GP navigator clients to cycle is done if it fits within the personal plans identified by the client. | |

| | | | |
|---|---|---|---|
| **8**<br><br>**Support financial saving schemes that aid residents living in fuel poverty** | Support the delivery of the Big Energy Switch 2015, a collective energy switching scheme to help residents negotiate tariffs on gas and electricity and to aid residents living in fuel poverty in line with the 'Healthier Homes' scheme. | Approximately 2000 residents have received advice and information about the Big Energy Switch from home visits and local events organised in Kensington & Chelsea, including Kensington & Chelsea forum for Older residents, TMO Conference, Age UK Health Fair and a Carer's Day event organised in the Town Hall. Nine residents have been assisted directly with a Big London Energy Switch application aside from residents that have applied directly themselves online from instructions given in marketing material at events. | |
| **9**<br><br>**Discourage burning of logs and house coal** | Launch an initial publicity drive backed up by yearly campaigns in the autumn to highlight pollution caused by burning non-smokeless fuels in household fireplaces backed up with enforcement for persistent offenders. | Web message on the Council website: https://www.rbkc.gov.uk/environment/air-quality/indoor-air-quality | Update to this information, press release and social media feeds and related materials in preparation. |

| | | | |
|---|---|---|---|
| **10**<br><br>**Support vulnerable residents to reduce energy consumption and bills** | Support residents by providing energy efficiency advice and by installing small and low cost energy efficiency measures to combat climate change. Reduce their energy bills and carbon footprint, through the Healthy Homes project and through home energy visits by trained green experts. | TMO have facilitated this by providing information of vulnerable/disadvantaged residents. Green Doctor final report awaited.<br><br>120 home energy visits were delivered this winter to vulnerable RBKC residents living in TMO social housing, identified as being elderly, on benefits and/or disadvantaged. Another 70 home energy visits were carried out in 15/16 winter. The Green Doctors' home energy visits aims to provide energy advice and support to RBKC residents vulnerable to cold homes and/or whose health and wellbeing is compromised by poor housing conditions and inefficient homes.<br>• **Energy measures installed:** Around 94.05 kg of carbon<br>avoided/saved per household per annum through the installation of small measures with a saving of **around £25 pounds for each household** on energy bills. | • **Behavior change:** 174.875 kg of potential carbon savings<br>avoided per annum and around **£43 saving** on energy and water bills through behavior change intervention.<br>• **On average 6,000** liters of water saved annually through<br>the installation of water saving measures per household.<br><br>RBKC is part of the WARMTH programme, coordinated by Groundwork which is a health/housing scheme, working in partnership with eleven London boroughs. 150 home energy visits will be delivered in RBKC BY December 2016. |
| **11**<br><br>**Promote case studies of higher- standard insulation and heating systems for existing buildings in the borough** | Promote exemplar case studies about sustainable retrofit and regeneration schemes within the borough that have improved insulation and heating systems and which have exceeded the minimum standards set out in Building Regulations. | Case studies are being worked on in relation to several current projects. Case studies have been developed for work undertaken at schools in particular the heating health check work. Heating Health check work has been put forward to be discussed at energy managers' conference in 2016 as an example of energy work all schools can undertake to reduce energy and carbon. | |

| | | | |
|---|---|---|---|
| **12**<br><br>**Improve the energy efficiency of the six main Council's buildings** | Deliver energy efficiency projects in six of the Council's main facilities (Town Hall, Chelsea Old Town Hall, Pembroke Road, Carlyle building, Violet Melchett and Pembroke road car park). | Several projects have been delivered for each of the major sites:<br><br>Kensington Town Hall, Chelsea Old Town Hall, Pembroke Road, Carlyle Building and Violett Melchett Complex.<br><br>Estimated total carbon saving: 222.96 tonnes | Kensington Town Hall: convert Town Hall heating from MTHW to LTHW - Carbon Savings 56.16 tonnes. To repair pipe insulation with a foil finish mineral wool pipe section. Fit Velcro mats to valves, flanges etc. - Carbon Savings 18 tonnes. Chelsea Old Town Hall: LEDs rollout across the building - Carbon Savings 7.7 tonnes. Upgrade and optimisation of the BMS system and provide Daikin Connectivity - Carbon Savings 37 tonnes. Pembroke Road: Upgrade and optimisation of the BMS system and provide Daikin Connectivity - Carbon Savings 49 tonnes. Carlyle Building: Install new BMS control for heating system - to include remote control functionality to maximise time control- Carbon Savings 8.5 tonnes. Supply and install 75 off 5ft 58W T8 fitting with 25W LED with integral sensor and driver to basement corridor - Carbon Savings 16.8 tonnes. Repair and replace missing lagging on hot water systems in plantroom - Carbon Savings 9.2 tonnes. Violett Melchett Complex: Replace Thorn 2D lamps with 10W LED units with sensors - Carbon Savings 20.6 tonnes. |

| | | | |
|---|---|---|---|
| **13**<br><br>**Improve the use of space in council buildings to increase occupancy and reduce overall energy demand** | Improve the use of Council buildings making them more sustainable, flexible and cost- and space-efficient, so that the remaining sites are more energy efficient. This includes the closure of unsuitable and energy inefficient Council sites (e.g. Pembroke Road). | Westway Information Centre has now closed.<br><br>Training Centre at Pembroke Road is due to relocate to KTH August 2016. Vacant accommodation mothballed. | Proposal to move all weekend and out of hours working to G29 at KTH – This will allow the main KTH building to be powered down during those periods. |
| **14**<br><br>**New Marlborough primary school to be performing at a high standard of energy efficiency** | Reduce energy consumption in the redeveloped Marlborough school complex. | School is in construction phase, aiming for BREEAM 'Very Good'. The climate change team is part of the project team ensuring sustainability and energy efficency is considered at all stages of the project. The school is scheduled for completion July 2017 | |
| **15**<br><br>**Continue to insulate the heating systems in schools** | Deliver and support Flange & Valve insulation projects to a large number of schools. | Flange and Value insulation has been rolled out to six schools across RBKC in 2016. These changes will lead to an approximate reduction in energy of 140,804 Kwh per year and 27 $CO_2$ tons. | |
| **16**<br><br>**Make sure that boilers in schools are set up and controlled to better adapt heating to each school's needs** | Deliver heating health checks projects to a large number of schools. | Heating Health Checks were carried out at 17 schools across RBKC in 2016. Savings from the changes made to boiler set up and controls will be approximately 66 $CO_2$ tons in total across the schools. | The heating health checks also identified more projects that will be explored, these could achieve a reduction of approximately a 1000 $CO_2$ tons over 5 years. |

| | | | |
|---|---|---|---|
| **17**<br><br>**Continue to install LED energy- efficient lighting in schools** | Deliver lighting projects within selected schools to increase the use of LEDs and energy saving fittings. | (No local pollution benefit) | LEDs lights have been installed at four schools across RBKC in 2016. This amounts to a saving of approximately in total of 34 tons of $CO_2$. |
| **18**<br><br>**Introduce more energy efficient street lighting** | Introduce more efficient lighting technology for street lighting. | (No local pollution benefit) | Update available 2016/17 |
| **19**<br><br>**Produce an energy strategy for council housing** | Complete the council housing energy strategy to guarantee energy efficiency and more resilient buildings in the Council's housing stock and reduce fuel poverty. | Housing Energy Strategy approved by RBKC TMO in March 2016 . Has now been submitted to RBKC . | |
| **20**<br><br>**Develop planned programme of communal boiler upgrades and renewals within council housing** | Complete the review of communal boilers from council housing and develop a planned programme of replacements and upgrade works. When possible, instal individual controlled heating within flats. | Grenfell Tower communal boiler replaced providing individual control to 129 residents within tower.<br><br>Lowerwood Court communal boiler procured and currently on site for renewal; due to distribution pipework being replaced in the last ten years individual control to follow in future program of works.. | Feasability studies commissioned and completed to five prioratised sites totaling 1190 homes supplied by communal heating to identify most suitable renewal option to incorporate efficiency of plant and providing residents with individual control and billing |

| | | | |
|---|---|---|---|
| **21**<br><br>**Install ultra-low-nitrogen oxide (NOX) boilers in council housing** | Install ultra-low pollution boilers in next phase of boiler replacement in social and council housing (Further phase planned for 2019-20). | 69 ultra-low NOX domestic boilers installed during 2015/16 | |
| **22**<br><br>**Incorporate energy efficiency improvements into the Council's planned social housing renewal programme** | Incorporate energy efficiency improvements into the planned renewal programme, for example: upgrade windows from single glazed to double glazed and improve the insulation standard for TMO properties when renewing roofs. | Grenfell Tower is the main block where energy efficiency measures to the building fabric have been installed . Rain-screen cladding and 120mm of insulation and new double-glazed windows to 120 existing and 9 new dwellings. | Awaiting consultants report on improvement in SAP<br><br>No other windows replaced in 15/16<br>No roof renewals carried out in 2015/15 |
| **23**<br><br>**Complete the energy efficiency refurbishment of Grenfell Tower.** | Complete the refurbishment of Grenfell Tower: install aluminium external wall cladding for insulation; upgrade windows from single glazed to double glazed; and install a new energy efficient communal boiler and individual heat exchange units inside flats. | All works completed. | The TMO have asked that RBKC/Green Doctors do some work with residents as the new remote heat metering is different from the previous system, and some residents need some guidance and support. |
| **24**<br><br>**Raise awareness on air quality and climate change issues amongst council tenants.** | Raise awareness of air quality and climate change issues, by advising council tenants on efficient use of heating systems using specific guidelines. | This is planned for years 16/17 | |

| | | | |
|---|---|---|---|
| **25**<br><br>**Explore the opportunity to install renewable energy technologies in the council's social housing (e.g. solar panels)** | Through additional or external fundings. Renewables will be considered and explored but insulation and energy efficiency will be a higher priority. It will be undertaken when it is a practical and affordable solution. | Some more cavity insulation work is due, at Swinbrook during cyclical works, and WEE is being explored as the regulations mean that an abseiling solution may be an option to carry out the works. | |
| **26**<br><br>**Implement the forthcoming legislation related to CO2 emissions for new developments and major refurbishments** | Support implementation of the government's Housing Standards Review with regard to energy standards through emerging alterations to the London Plan, revisions to the Local Plan, determination of planning applications and through building regulations | Conditions to seek national standards 'equivalent' to Code for Sustainable Homes Level 4 on planning permissions, in line with the Housing Standards Review, are already being used.<br><br>Local Plan Policy CE1 Climate Change is being updated through the Local Plan Partial Review - see www.rbkc.gov.uk/planningpolicy<br><br>Section 165 of the Housing and Planning Act 2006 commits the Secretary of State to carry out a review of the minimum energy performance requirements for new dwellings approved under Building Regulations<br><br>GUY/ANCA - YOU MAY WANT TO SEEK INPUT FROM BUILDING CONTROL SERVICE TOO | |
| **27**<br><br>**Ensure that major building sites minimise dust and emissions including those from on-site mechanical plant** | Apply the new London Plan -The Control of Dust and Emissions During Construction and Demolition Supplementary Planning Guidance and require the low emission NRMM with appropriate Euro standard on major redevelopment sites. | Existing Local Plan Policy CL7 Basements subsection l states "ensure that construction impacts such as noise, vibration and dust are kept to acceptable levels for the duration of the works"<br><br>Basements SPD adopted April 2014 with a section on Noise, Vibration and Dust<br><br>ADDITIONAL EH COMMENT ON E.G. NRMM? | |

| | | | |
|---|---|---|---|
| **28**<br><br>**Ensure that the planning system minimises impact of new development during operation** | Utilise the planning application process to assess the implementation of energy strategies in major developments and make air quality and climate change recommendations. | Investigating the opportunity to install a carbon offsetting fund in RBKC and the GLA Zero Carbon Homes by October 2016. | Through the London Plan (policy 5.2), the Mayor applies targets for carbon dioxide emissions reductions for new development. Where these emissions targets cannot be met on-site the London Plan states any short fall should be provided off-site or through cash-in-lieu contribution which is used to secure carbon dioxide savings elsewhere. |
| **29**<br><br>**Use the planning system to ensure that emissions from energy and heat sources in new developments are minimised** | Make informed decisions on planning applications about 'Decentralised Energy' (DE) networks, 'Combined Heating Power (CHP)', biomass and biofuel, by considering the balance between air quality and carbon reduction benefits. Assess and make recommendations. | Local Plan Policy CE1 Climate Change is being updated through the Local Plan Partial Review - see www.rbkc.gov.uk/planningpolicy | |
| **30**<br><br>**Improve walking and cycling access to White City** | Provide new direct pedestrian and cycle routes by means of a bridge and a subway, between the White City Opportunity area and Norland and Notting Barns wards. | Local Plan 'Places' chapters are being updated through the Local Plan Partial Review - see www.rbkc.gov.uk/planningpolicy<br><br>1)) The subway under the West London Line: Network Rail now engaged in discussions with landowners and working towards relevant consents. 2) Bridge over WLL and West Cross Route: consultants have produced initial designs and identified landing areas. | |

| | | | |
|---|---|---|---|
| **31**<br><br>**Publish online real-time information about the energy used and generated by the Council's main buildings** | Publish online real-time information on CO2 emissions from Council's main buildings, as well as energy generated by the Council's solar panels. | (No local pollution benefit) | **See live energy use data from the Royal Borough**<br>RBKC introduced a carbon saving reporting web-based platform to display its live energy consumption data/performance information to ensure it is transparent about the way the Council uses energy and to show the improvements we are making. This is published on the Climate Change page: https://www.rbkc.gov.uk/greenerborough/welcome-to-greener-borough |
| **32**<br><br>**Continue to reduce the Council's vehicle emissions** | Start with a review of the engine types of all Council vehicles to find opportunities to procure the cleanest Council Fleet. | Review still to be commenced. Have continued to work with individual teams championing the lease of electric vehicles. Park Police already acquired an electric van. | |
| **33**<br><br>**Continue to reduce emissions from our contractor's waste collection and street cleaning vehicles** | Work with our contractor SITA to reduce emissions from its fleet. | All new vehicles will have euro 6 engines (no retrofitting of old vehicles will take place). Potentially 5 new vehicles with euro 6 engines will be introduced in 2016/17, which lower NOx and PM10 emissions. | Suez (Council contractor) has proposed some potential projects that may result in a decrease in carbon consumption (reduction of trips, street cleansing reschedule) which will assist in achieving the carbon reduction target as they are looking to make rounds more efficient. |

| | | | |
|---|---|---|---|
| **34**<br><br>**Maintain an up-to-date Council Travel Plan** | Undertake staff survey and site audits, and revise travel plan. | Staff Travel Survey due to take place in September 2016. | Following analysis of results, the action plan will be revised. |
| **35**<br><br>**Increase public awareness of vehicle emission controls** | Carry out roadside operations to test vehicle exhaust emissions. | In collaboration with the Traffic Police and in liaison with DVSA, roadside assessments will continue to be held with advisory leaflets and high visibility on-site promotion.<br><br>The last event in November 2015 resulted in approximately 35 leaflets being handed to motorists. | |
| **36**<br><br>**Increase public awareness to reduce engine idling** | Reduce idling of engines by raising awareness of public health and environmental benefits in addition to using enforcement powers to issue fines to those who persist. Carry out campaigns targeted at the public, fleet managers and council drivers, e.g. including a pamphlet in permit renewal paperwork. Erect temporary signage in target areas. | Transport has not taken any action on this.<br><br>EH COMMENT? | |
| **37**<br><br>**Encourage residents to choose low emission vehicles by raising diesel surcharge** | Increase the diesel surcharge to encourage less polluting vehicle choices. Cease provision of Euro 5 exemption in 2017 once Euro 6 diesels are available. | Throughout 2015/16 we wrote to resident permit holders to warn them that the cost of the diesel surcharge would rise from £19 to £40 in April 2016. This has since been implemented. | |

| | | | |
|---|---|---|---|
| **38**<br><br>**Review of effectiveness of parking permit fee structure in encouraging the uptake of cleaner vehicles** | Review 'Parking Policy' banding to encourage choice of lower emission vehicle choice. | Review to be initiated by December 2016 | |
| **39**<br><br>**Increase number of on-street charging points for electric vehicles** | Expand the availability of on-street charging points for electric vehicles. | Approval granted for 14 of 15 sites which went to public consultation. These have since been installed and are currently awaiting connection. | |
| **40**<br><br>**Encourage car clubs to go electric** | Explore with car club operators the potential for introducing or increasing the number of electric cars or hybrid electric vehicles in their fleets. | Go Ultra Low City bid by London was successful. There are issues however regarding State Aid, if a public body provides benefit to a private operator, eg through use of a charging point. | We will explore opportunities presented by the GULC work. |
| **41**<br><br>**Encourage children to walk or cycle to school** | Double the number of schools with Silver or Gold accredited School Travel Plans and promote walking and cycling to school as part of a combined effort to tackle childhood obesity. Introduce advice on engine idling in promoting and creating travel plans | 42 schools were submitted to TfL for accreditation in 2015/16:<br><br>15 schools were put forward for Gold accreditation, 5 for Silver accreditation, 22 for Bronze accreditation.<br><br>TfL will confirm if the submissions were successful end of July 2016. 46 RBKC schools in total are engaged on travel plan activity which includes advice on running anti-idling campaigns and active travel initiatives to reduce childhood obesity. | |

| | | | |
|---|---|---|---|
| **42**<br><br>**Use cycle training to promote more cycling** | Encourage greater use of cycling by increasing the number of free cycle training sessions for residents, visitors and workers in the borough. | 742 adults received cycle training in 2015/16. A further 60 have so far received cycle training in 2016/17 (802 people trained in total) so we should be on track to reach 1000 people trained by December.<br><br>1,736 primary and secondary school children received cycle training in 2015/16 | |
| **43**<br><br>**Help the Mayor of London to create cycling grid of specially designed routes** | Work with the Mayor of London to improve cycle routes in London by introducing the 'cycling grid'. | The first Quietway route in the borough was built in 15/16 and others have been completed since then, with all routes in the Grid still on track for completion by end of 2016. | |
| **44**<br><br>**Open up more one-way streets to cyclists using both directions.** | Continue to convert one-way streets to two-way operation for cycling. | In 15/16 we designed and consulted on a route parallel to Kensington High Street, and will shortly introduce this on an experimental basis. We also introduced two way cycling in Clarendon Road and created a cycle gap in a traffic island to enable cyclists to cross Ladbroke Grove. | |
| **45**<br><br>**Create safe areas for cyclists at traffic lights** | Consider opportunities for introducing Advanced Stop Lines for cyclists when reviewing traffic signals. | Work on reviews now started. | |

| | | | |
|---|---|---|---|
| **46**<br><br>**Support residents to take action in their local areas and implement community energy projects** | Encourage and empower residents to help tackle climate change and reduce energy consumption in their local areas and homes. Stimulate attitude and behaviour change through community energy projects and energy workshops/training. | Organised and attended several community housing estate-based events (such as at Trellick Tower) and TMO "Get Wise Roadshows" (e.g. Chelsea Theatre/World's End and Lancaster West) events to raise awareness on energy efficiency. Attended Ask Nick (Council Leader) events to raise awareness about climate change.<br><br>In the process of publishing the thermal heat loss maps of the borough and launch a web-based tool to help residents identify if their house could improve its energy efficiency and/or is losing heat.<br><br>Carried out feasibility studies and developed a business plan to develop a community owned renewable energy project at Dalgarno Trust Community Centre and the surrounding social housing estates in partnership with Repowering London. | |
| **47**<br><br>**Identify and train green champions in the community** | Identify and sign up green champions/leaders and residents' groups within the borough to initiate and support the delivery of energy reduction and energy generation projects or provide energy advice to their local community. | Delivered two Energy saving advice trainings at Dalgarno Trust Centre and Chelsea Theatre in partnership with Energy Saving Trust. These sessions provided advice on how to save energy and water, reduce their energy bills and encourage householders to adopt energy efficiency measures and behaviours.<br><br>More than 30 RBKC residents and community champions received full-day training. | Partnered with Groundwork London to work with community groups, such as the Muslim community from the Al Manaar Muslim Cultural Heritage Centre. Free training and support was provided to more than 50 residents from the Muslim community in all aspects of home energy use, as part of an EU funded programme - Spirit. |

| | | | |
|---|---|---|---|
| **48**<br><br>**Understand better the sources and quantities of greenhouse gas emissions across the borough** | Analyse the sources and quantities of greenhouse gas emissions across the borough. | (No local pollution benefit) | Analysed the latest RBKC carbon dioxide emissions data ($CO_2$) published by DECC in June 2015 for the period 2005-2013 and assessed the new methodology used. Produced internal reports to highlight that the results for RBKC have changed with the new methodology. |
| **49**<br><br>**Support local businesses and large organisations to reduce emissions from their operations** | Offer environmental advice and sources of technical information to local businesses and large organisations on how to reduce their CO2 and air pollution emissions. | The London Healthy Workplace Charter encourages employees in small and medium sized businesses to adopt active travel options.<br><br>AND? | |
| **50**<br><br>**Work actively with some large business organisations to help them to reduce their emissions** | Increase the number of businesses participating in emission reduction initiatives by concentrating on large organisations in line with the Healthy Workplace Charter. Starting with those already approached, but not previously ready to commit. | This project not started yet. Work underway to encourage the formation of one or more BIDs. | |
| **51**<br><br>**Encourage visitors to major venues to walk or cycle.** | Work with major destination venues in line with the Healthy Workplace Charter to reduce trips using private and public transport by promoting active travel (walking and cycling) using customised maps and adapting existing publicity materials. | Existing Local Plan Policy CT1 Improving Alternatives to Car Use states "The Council will ensure that there are better alternatives to car use by making it easier and more attractive to walk, cycle and use public transport and by managing traffic congestion and the supply of car parking." | |

| | | | |
|---|---|---|---|
| **52**<br><br>**Support businesses to reduce their emissions from deliveries** | Support businesses to combine and rationalise deliveries (of 100 – 400 Kg loads) using low/zero emissions vehicles and local distribution hubs for final stage deliveries. | The Council in partnership with LBs of Hammersmith and Fulham and Lambeth is working on the concept of a freight consolidation hub in South London (Low Emission Logistics) initially to handle its own deliveries. | |
| **53**<br><br>**Continue to work with our main contractors to reduce their energy consumption** | Work in detail with the Council's main contractors (SITA, Quadron, Amey) to reduce their overall energy consumption related to the Council's operations (building use and vehicle fleets). | Work is ongoing with the Council's main contractors to reduce their energy consumption. A detailed action plan has been produced<br><br>Climate Change team has been working with SITA, Quadron and Amey to review the fleet usage and development of a program for future projects | |
| **54**<br><br>**Continue to develop the Community Kitchen Garden scheme** | Continue to develop the Community Kitchen Garden scheme which encourages residents and community groups to grow seasonal fresh fruit and vegetables. Local production eliminates deliveries (zero food miles) and helps tackle childhood obesity. | (No local pollution benefit) | The Council is on target to deliever 10 new community kitchen gardens in 2016/17. To date 70 community kitchen gardens have now been created. |
| **55**<br><br>**Pilot the commercial production of fresh products from market gardens in the borough** | Set up Cultivating Kensington & Chelsea to develop market gardens, allowing the commercial production of fruit, vegetable, plant seedlings and cut flowers. | (No local pollution benefit) | New food growing charity (social enterprise) called Cultivating Kensington and Chelsea has been set up and a new market garden, consisting of 4 large green houses is now operational. |

| | | | |
|---|---|---|---|
| **56**<br><br>**Increase recycling by Council staff members** | Refresh the promotion of recycling to members of Council staff. | (No local pollution benefit) | Work has been done on communications to increase recycling. Posters have been put in the KTH and a new recycling video has been added to the intranet and will also be made part of induction for staff. No data available as yet to see if these actions have impacted on the recycling rate |
| **57**<br><br>**Conduct an awareness raising campaign for residents to increase waste recycling rate and decrease contamination** | Conduct awareness raising campaign for residents on waste recycling how to decrease contamination. | (No local pollution benefit) | The contamination rate for 15/16 fell to 14.09% and the recycling rate was 23%. Further awareness raising and campaigns are being implemented to increase recycling rates. |
| **58**<br><br>**Produce a Local Flood Risk Management Strategy.** | Produce a Local Flood Risk Management Strategy (LFRMS), required by Flood Risk Regulations 2009 and the Flood and Water Management Act 2010. | (No local pollution benefit) | Local Flood Risk Management Strategy adopted July 2015 - see www.rbkc.gov.uk/planning-and-building-control/planning-policy/flooding/lead-local-flood-authority-llfa-duties |

| | | | |
|---|---|---|---|
| **59**<br><br>**Increase the size of the existing Counters Creek Victorian sewer system** | In partnership with Thames Water, facilitate work to increase the size of the existing Counters Creek Victorian sewer system to cope with flash flooding from intense rain storms. | (No local pollution benefit) | If planning permission is granted swiftly, and not challenged by either of the two boroughs (LBHF and K&C) and in the absence of any other unforeseen technical difficulties, the work schedule should proceed as envisaged.<br><br>Thames Water hopes to submit their planning application for the scheme in late 2016. They would like to build the scheme by 2020. However, these timescales are not definite and depend on the final submission of the planning application. |
| **60**<br><br>**Support the delivery of Sustainable Drainage Systems (SuDs) both in new developments and through retrofitting** | Support the delivery of 'Sustainable Drainage Systems (SuDs)' both in new developments and through retrofitting, to absorb and divert as much rainwater as possible away from the sewers during periods of heavy rainfall. | (No local pollution benefit) | Nearly 400 'observations' on planning applications relating to SuDS in approximately one year.<br><br>Local Plan Policy CE2 Flooding is being updated through the Local Plan Partial Review - see www.rbkc.gov.uk/planningpolicy |

| | | | |
|---|---|---|---|
| **61**<br><br>**Retrofit SuDs in existing properties** | Install SuDs such as rainwater retention features in existing properties. | . (No local air pollution benefit) | This is being progressed by Thames Water and requires Highways Consent from the Council. It is expected that the scheme will be finalised in 2017 but no final deadlines have been given by Thames Water. Also, the Council has submitted a bid to the Thames Regional Flood and Coastal Committee to implement SuDS in the north of the Borough over the next 6 years. We will know if the bid has been successful in September 2016 |
| **62**<br><br>**Mitigate against increases in area of impermeable land by stopping the paving of front gardens** | Use the planning control process to reduce the loss of front gardens by resisting paving. | . (No local air pollution benefit) | Local Plan Policy CE2 Flooding is being updated through the Local Plan Partial Review - see www.rbkc.gov.uk/planningpolicy |
| **63**<br><br>**Promote the use of the Council's SuDs tool for small developments** | Continue to promote the use of the Council's SuDs tool for small developments. | . (No local air pollution benefit) | Local Plan Policy CE2 Flooding is being updated through the Local Plan Partial Review - see www.rbkc.gov.uk/planningpolicy<br><br>See also www.rbkc.gov.uk/planning-and-building-control/planning-policy/flooding/sustainable-drainage-systems |

| | | | |
|---|---|---|---|
| **64**<br><br>**Install at least one green roof** | Install, as a pilot project, at least one green roof or comparable green infrastructure, in locations to be confirmed. | Work has started to install a green roof on the Al Manaar Muslim Cultural Heritage Centre – work will be completed in the next month. The second green roof will be install in the autumn 2016 on an Octavia social housing estate on Portland Road. | |
| **65**<br><br>**Promote green infrastructure (walls, roofs) and other eco-initiatives in schools** | Further develop school participation in green infrastructure and eco-initiatives that enhance the curriculum, involve parents and lead to reduction of car use in collaboration with the Healthy School Partnership. | A further school suitable for installing green infrastructure has been identified. Progress will largely depend on the availability of funding. | |
| **66**<br><br>**Support the development of food growing gardens in schools** | Work with schools to encourage and support them in the delivery of food growing gardens. | (No local pollution benefit) | The Council is working with 18 schools on food growing and is providing training to encourage food growing and healthy eating. |
| **67**<br><br>**Support the development of community food waste composting initiatives** | Encourage and support the development of small scale community food waste composting initiatives | (No local pollution benefit) | Two community food waste composting schemes developed at two community kitchen gardens. |
| **68**<br><br>**Investigate whether targeted greening of areas can reduce exposure to poor air quality** | Assess the benefits of greening measures on school premises and other institutions close to busy roads, using the evaluation report on the green screen at St Cuthbert with St Matthias school and its capacity to reduce NO2 and fine particle levels. | Evaluation report details the percentage reduction in particulate matter and nitrogen dioxide achieved by the screen in reducing exposure in the school grounds. The report is due to be published in October 2016 | |

| | | | |
|---|---|---|---|
| **69**<br><br>**Build and publicise green screens between Westway roads and sports area** | In cooperation with the Westway Trust and TfL, install green screens adjacent to the games area, and next to one of the Westway sliproads and raise awareness of air quality in the local environment. | 54 m (2.8 m high) length of ivy based green screening installed and completed by April 2016. | Director for Environmental Health developing further opportunities for collaborative work with the Westway Trust. |
| **70**<br><br>**Use greening measures to reduce pedestrians' exposure to poor air quality on Cromwell Road** | Develop the air quality aspect of the Cromwell Road green corridor project. Proposal set to re-landscape part of Cromwell Road's southern sidewalk. | This project is now managed by TfL and is on hold as scheme being linked to other local transport schemes. | |
| **71**<br><br>**Review planning applications to ensure that biodiversity is improved, not damaged by new build and refurbishment** | Check/review planning applications to ensure that development impacts on the borough's ecology are minimised and to maximise biodiversity gains from development by creating new habitat through green roofs. | (No local pollution benefit) | Update pending |
| **72**<br><br>**Join Climate Local, the commitment by local authorities to address climate change** | Join Climate Local to take advantage of the Local Gogernment Association initiative providing additional support to reduce CO2 emissions and improve resilience to the effects of climate change. | (No local pollution benefit) | Joined in March 2015<br><br>The Royal Borough of Kensington and Chelsea has signed in March 2015 the Local Government Associations (LGA) Climate Change commitment – called Climate Local, which aims to support councils' efforts both to reduce carbon emissions and to increase resilience to a changing climate. |

| | | | |
|---|---|---|---|
| **73**<br><br>**Require developers to contribute to local air quality improvements** | Increase air quality action fund contributions to directly provide a resource for air quality specialists and to achieve actual air quality improvements. | Local Plan Policy CE5 Air Quality reasoned justification text is being updated through the Local Plan Partial Review - see www.rbkc.gov.uk/planningpolicy | |
| **74**<br><br>**Push for the borough to be included in the Ultra Low Emission Zone (ULEZ)** | As part of the TfL/GLA Engagement Group enter discussions with the new Mayor of London on the potential to increase the air quality benefits in the borough of the ULEZ proposal, and/or tightening the LEZ. | Officers have attended meetings set up by TfL to explore technical options and benefits of changes to LEZ and ULEZ proposals. | |
| **75**<br><br>**Support TfL in ensuring the entire borough is part of the 'Cycle Hire' scheme** | Support the expansion of the 'Cycle Hire' scheme north of the Westway. | Two new sites in the north of the borough were approved in 15/16 and have subsequently opened. | |
| **76**<br><br>**Work with TfL to reduce emissions from buses in the borough** | Lobby and work with TfL to ensure all bus routes through the borough are ULEZ- compliant and explore options for hybrid buses to run in pure electric mode through the most polluted areas. | This was a specific request in our response to the first ULEZ consultation and in subsequent correspondence with TfL and GLA. | A reply is being drafted in response to TfL's recent letter about improvements to bus emissions in K&C. |
| **77**<br><br>**Work with TfL to deliver Crossrail stations in the borough** | Work with TfL on delivery of Crossrail 2 station in the King's Road area. | Local Plan Policy CT2 New and Enhanced Rail Infrastructure (inc Crossrail 2) is being updated through the Local Plan Partial Review - see www.rbkc.gov.uk/planningpolicy | |

| | | | |
|---|---|---|---|
| **78**<br><br>**Lobby TfL for increased public transport links in the borough** | Continue to work with Crossrail sponsors on feasability of a Kensal Portobello Crossrail station at Canal Way. | Local Plan Policy CT2 New and Enhanced Rail Infrastructure (inc Crossrail 1+2) and Policy CA1 Kensal Gasworks are being updated through the Local Plan Partial Review - see www.rbkc.gov.uk/planningpolicy | |
| **79**<br><br>**Lobby TfL and the Mayor of London to reduce emissions from taxis** | Lobby TfL/Mayor of London to make the decommisioning scheme for 10 year old taxis mandatory. . | RBKC responded to a second consultation on the ULEZ in August 2015, which dealt with issues around taxis and PHVs. The response called on the Mayor to retain his original proposal to move to a ten year rolling age limit for taxis. The Mayor did not agree with this position. | |
| **80**<br><br>**Lobby TfL and the Mayor of London to raise taxi drivers' awareness of techniques to reduce emissions** | Lobby TfL and the Mayor of London to establish eco-driving training as a requirement for all taxi and private cab drivers. | Transport has not taken any action on this. Perhaps the next round of consultation will be an opportunity to request it? | |
| **81**<br><br>**Lobby the government for higher environmental building standards** | Continue lobbying the Government so that Local Authorities are allowed to set higher environmental standards for new buildings and major refurbishments that are higher than the current building regulations (Housing Standard Review). | Local Plan Policy CE1 Climate Change is being updated through the Local Plan Partial Review - see www.rbkc.gov.uk/planningpolicy<br><br>Section 165 of the Housing and Planning Act 2006 commits the Secretary of State to carry out a review of the minimum energy performance requirements for new dwellings approved under Building Regulations | |

| | | | |
|---|---|---|---|
| **82**<br><br>**Ensure that responses to formal consultations focus on reducing or eliminating emissions** | Assert the Council's aspirations for improving air quality and tackling climate change in all responses to Government and regional consultations. | The Council has continued to respond to important consultation exercises on influencing future air quality e.g. Defra's consultation (late 2015): Draft Plans to Improve Air Quality – Tackling $NO_2$ in our Towns and Cities, and otherwise GLA's consultation: Draft LLAQM Policy and Technical Guidance. | |
| **83**<br><br>**Lobby tyre, brake and clutch manufacturers to use materials which reduce small particles released through wear** | Instigate and support collaborative research and development to improve tyre, brake and clutch technology with materials that release substantially fewer particulates. | *Issue raised with trasport providers…* | |

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

No update for this year

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

No new *or significantly changed industrial or other sources*

## Appendix A Details of Monitoring Site QA/QC

### *A.1 Automatic Monitoring Site*

**Data collection, screening and validation**

Kings college London undertake data management of the councils monitoring data. Data is collected from each instrument every hour. Data is subject to automatic and manual checks each day, 365(6) days per year (6 days per week manual checking). Measurements are scaled immediately as they are collected using the latest calibration information from the Local Site Operator (LSO) or Equipment Support Unit (ESU). This ensures that accurate measurements are disseminated to the public.

Validation and subsequent ratification of data (QA/QC) to be carried out every three months and finalised when QA/QC audit results are received. Measurements are available for download via the LondonAir website at www.londonair.org.uk

All continuous data is stored in the King's MS-SQL database in a locked server room in a secure area. The data is backed up onto physical media and stored in a safe off site. During collection, data will be screened for any faults flagged by the instruments. Complex automatic validity checks are applied as the data is parsed into the database preventing dissemination of spurious measurements. Faults are reported immediately to the LSO or ESU.

**Routine calibration and independent checks**

Local site visits are undertaken fortnightly at the urban background site and weekly for the roadside Tapered Element Oscillating Microbalance (TEOM-FDMS) for the purposes of calibration, filter changes and instrument cleaning. Equipment is additionally serviced at regular intervals. Routine calibrations are undertaken by contractors.

Independent calibration and audit is carried out by Defra appointed contractors as part of their AURN responsibilities for the North Kensington site and for the Cromwell Rd site through a separate contract. Calibration certificates are provided by AEAT. The National Physical Laboratory (NPL) undertake the London affiliate inter-calibration exercise. The following checks are performed for the oxides of nitrogen, sulphur dioxide and carbon monoxide analysers:

Analyser response factors: The analyser samples a stable 'inter-calibration standard' which has been validated against a network primary standard. The analyser also samples from a certified zero air source.

Analyser linearity: The analyser response to a series of known concentrations covering the analyser range is noted. A linear regression is then performed on the results.

Analyser 'noise' levels: This is the standard error of ten successive spot readings of analyser readings when fully stabilised on zero.

Nitrogen Oxides analyser converter efficiency: $NO_x$ analyser converter efficiency is determined using Gas Phase Titration at a range of concentrations, this uses a high concentration of NO and a known amount of $O_3$ which is subsequently converted to $NO_2$.

Estimation of site cylinder concentrations: The concentrations are evaluated by sampling from the site cylinder and comparison to analyser response factors determined from the 'inter-calibration standard'.

For particle analysers the following checks are performed: Mass transducer calibration: The mass transducer is

calibrated by placing pre-weighed filters on it and noting the change in the frequency that is induced.

Analyser flow rates**:** Flow rates are measured by calibrated flow audit measurement systems. Leak checks are also carried out.

**$PM_{10}$ Monitoring Adjustment**

**TEOM**

In the past TEOM data was corrected using a simple multiplication factor of 1.3. Co-located instruments (TEOM and Partisol) at North Kensington in the past enabled us to compare the results, this had shown that adjusting the TEOM data by a factor of 1.3 gave a reasonable approximation of the annual average, but less reliable when applied to exceedences of the daily objective. However co-location studies have shown that the instrument was not equivalent to the reference method and the FDMS measurement device was developed to correct the problem and in comparisons was shown to be equivalent to the EU reference method. In 2008/09 Defra began the replacement of TEOM units with FDMS units on the particulate monitoring network. Government guidance LAQM TG(09) states that the Volatile Correction Model (VCM) should be used to correct TEOM measurements for Local Air Quality Management purposes. PM10 data is mainly collected using FDMS units and a partisol.

Data has been collected from the London Air Quality Network (LAQN) website (www.londonair.org.uk) operated by King's ERG. TEOM measurements on the website are now adjusted by the CVC. The VCM uses FDMS purge measurements to correct TEOM measurements for the loss of volatile material. This method is now recommended in Defra's TG (09) as the preferred method for correcting TEOM measurements for Local Air Quality Management purposes. This correction has been undertaken for data in the Council's two TEOM sites from 2004. Data corrected using both the simple multiplication factor and the VCM method is included in the report.

**QA/QC of Gravimetric monitoring-Partisol**

The Partisol operating at the Earls Court Road site since May 2002 is a gravimetric sampler which is equivalent to the EU reference method. Reference to the report has also been made to other Partisols operating in the borough by Defra. However the co-location trail1 raised concerns over the filter media used in these instruments and showed that an over estimation in measured concentrations resulted from the use of quartz filters. The filters used at the site are Teflon coated glass fibre (Emfab) filters which are not affected in the same way as quartz filters[7]. No correction factor is required for gravimetric instruments.

Verification of ambient temperature, verification of filter temperature, verification of ambient pressure and humidity, internal leak check, external leak check and flow verification are undertaken for the partisol at the time of audit and service.

1 Maggs, R., Harrison, D., Carslaw, D. , Stevenson, K. (2009) Analysis of Trends in Gravimetric Particulate Mass Measurements in the United Kingdom

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

**QA/QC of $NO_2$ Diffusion tube data**

Bureau Veritas manage the data from the London Wide Environmental Programme (LWEP) diffusion tube networks, however the supply and analysis of the tubes is undertaken by Gradko International Ltd. The diffusion tubes employed in the LWEP programme are prepared and analysed by UKAS accredited Gradko International Ltd. Diffusion tubes are prepared using the 50% triethanolamine with acetone method and analysed using UV spectrometry. The diffusion tubes are labelled, and kept refrigerated in plastic bags prior to and after exposure.

**Laboratory Performance in AIR/WASP NO2 Proficiency Testing (PT) Scheme**

QA/QC of diffusion tube laboratories is provided by the AIR-PT Scheme, which is operated by LGC Standards and supported by the Health and Safety Laboratory. The AIR-PT scheme started in 2014 combines the two long running schemes of the HSL Workplace Analysis Scheme for Proficiency (WASP) and the LGC Standards STACKS scheme.

Gradko International Ltd participates in the AIR-PT scheme and historically participated in the WASP scheme also. Each quarter each laboratory receives tubes with known concentrations of nitrite for analysis. The tubes also include duplicates allowing for precision and accuracy to be assessed.

The results are presented as the percentage of results where the z-score was between -2 and +2, which is deemed to be satisfactory. For 2015, the results for Gradko International were as follows:

**Table A2.1 Laboratory Summary Performance for AIR NO2 PT Rounds 6, 7, 9 and 10, 2015**

| AIR PT AR006 | AIR PT AR007 | AIR PT AR007 | AIR PT AR0010 |
|---|---|---|---|
| Jan-Feb 2015 | April-May 2015 | July-August 2015 | October-November 2015 |
| 100% | 100% | 100% | 100% |

**Network Field Inter-Comparison Exercise**

Gradko International Ltd also takes part in the NO2 Network Field Inter-Comparison Exercise, operated by the National Physical Laboratory (NPL), which complements the AIR-PT scheme in assessing sampling and analytical performance of diffusion tubes under normal operating conditions.

Performance criterion have been established for participating laboratories in line with the Air Quality Directive 2008/50/EC requirement for indicative monitoring techniques, as the 95% confidence interval of the annual mean bias which should not exceed + 25%.

In conjunction with this, a measure of precision is determined by comparing the triplicate co-located tube measurements, commonly referred to as the coefficient of variation (CoV). This value is useful for assessing the uncertainty of results due to sampling and analytical techniques. The NPL performance criterion for precision is that the mean coefficient of variation for the full year should not exceed 10%, should this be achieved the precision is given a score of 'good'.

**Table A2.2 Summary of $NO_2$ Network Field Inter-Comparison Results, 2015**

| Annual Mean Bias | | Precision | |
|---|---|---|---|
| Performance Target | Gradko Annual Mean Bias | Performance Target | Gradko Precision |
| +25% | +6.4.% | 10% | Good |

The laboratory of Gradko International Ltd follows the Practical Guidance document "Diffusion Tubes for Ambient $NO_2$ Monitoring: Practical Guidance for users and laboratories (Feb 2008)" (AEA on behalf of Defra). The preparation method: 50% TEA v/v in Acetone and the analytical method is U.V. Spectrophotometry. Analysis is carried out in accordance with documented in-house Laboratory Method GLM6. Results are not blank subtracted

**Uncertainty of measurement: 3.82%+/- Limit of Detection: 0.066mg/m3***

**Benzene diffusion tube data**

All benzene tubes were analysed by a UKAS accredited laboratory using desorption scanning gas chromatography/mass spectrometry (GC/MS). This method of analysis gives unequivocal identification of BTEX peaks. The analysis is carried out in accordance with the Gradko International Laboratory Quality Procedure GLM 4.

The accuracy of the Laboratory measurements are monitored by participation in the Laboratory Measurement Proficiency Scheme.

The measurement method used in the benzene survey was consistent with the sampling, analysis and QA/QC requirements of EN 14662-4: 2005 Ambient air quality – Standard method for measurement of benzene concentrations – Part 4: Diffusive sampling followed by thermal desorption and gas.

**Diffusion Tube Bias Adjustment Factors:**

$NO_2$ diffusion tube bias adjustment factors for 2001 to 2015 used in the reports. Mean correction factor and %bias from Co-location LWEP Studies 2001-2015 – N Ken

**Table A2.3**

| Year | Mean Bias Adjustment | Mean % Bias |
|---|---|---|
| 2001 | 1.37 | -26.00 |
| 2002 | 1.35 | -26.00 |
| 2003 | 1.11 | -10.00 |
| 2004 | 1.10 | -9.00 |
| 2005 | 1.03 | -3.00 |
| 2006 | 1.06 | |
| 2007 | 1.01 | |
| 2008 | 0.98 | |
| 2009 | **1.00** | **1.14** |
| 2010 | 1.06 | -4.78 |
| 2011 | 1.02 | -0.91 |
| 2012 | 1.04 | -3 |
| 2013 | 1.14 | -10 |
| 2014 | 1.03 | -3 |
| 2015 | 1.07 | -6 |

**Table A2.4 Bias Adjustment Factor and % Bias of LWEP Co-Location Study 2015 (North Kensington)**

| Diffusion Tube | Continuous Analyser | Correction Factor (A) | % Bias based on continuous monitor (B) |
|---|---|---|---|
| 28.3 | 30.1 | 1.07 | -6 |

Source: Annual NO2 Diffusion Tube Report 2016 prepared for Royal Borough Kensington and Chelsea and the London Borough of Hammersmith and Fulham

**Factor from Local Co-location Studies**

Bureau Veritas conduct an 'in-house' co-location study to establish an LWEP bias adjustment factor based on triplicate $NO_2$ diffusion tubes sampling concurrently located with continuous analysers for a number of local authorities. They employ the DIFTAB.xls spreadsheet to calculate the factor.

**Table A2.5 Bias Adjustment Factor and % Bias of LWEP Co-Location Study 2015**

| | | Diffusion Tube | Continuous Analyser | Correction Factor (A) | % Bias based on continuous monitor (B) |
|---|---|---|---|---|---|
| **Kensington** | North Kensington | 28.3 | 30.1 | 1.07 | -6 |
| **LWEP** | Bloomsbury | 42.2 | 48.2 | 1.14 | -12 |
| **Croydon** | George Street | 54.5 | 51.8 | 0.95 | 5 |
| **Greenwich** | Westhorne Ave | 40.8 | 39.6 | 0.96 | 4 |
| **Greenwich** | Blackheath | 46.3 | 39.3 | 0.84 | 19 |
| **Greenwich** | Trafalgar | 35.0 | 35.5 | 1.01 | -1 |
| **Greenwich** | Burrage | 316 | 35.4 | 1.13 | 12 |
| **Greenwich** | Woolwich Flyover | 70.7 | 66.2 | 0.94 | 7 |
| **Greenwich** | Bexley Falconwood | 51.7 | 41.4 | 0.80 | 25 |
| **Overall % Bias** | | | | | **2.60** |
| **Overall Bias Adjustment Factor** | | | | **0.97** | |

**Discussion of Choice of Factor to Use**

For 2015 a local bias adjustment factor based on the North Kensington monitoring station was considered to be the most suitable as it is based on data from the borough's AURN affiliated site which has triplicate diffusion tubes co-located with it. Also comparison of the local factor and the LWEP with other co-located sites within the borough showed it gave the best fit to the continuous monitoring data.

**Table A2.6 Bias adjustment factor comparison**

| | North Kensington | Knightsbridge | Kings road |
|---|---|---|---|
| Continuous monitoring AM data | 32 | 71 | 73.0 |
| NK Local bias adjusted DT AM data | 30.28 | 76.88 | 70.21 |
| LWEP bias adjusted DT AM data | 27.45 | 69.70 | 63.65 |

NK – North Kensington Diffusion tubes

### *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**

| Site | Site Type | Annual Mean ($\mu g/m^3$) | Period Mean ($\mu g/m^3$) | Ratio |
|---|---|---|---|---|
| | | | | |
| | | | | |
| | | | | |
| | | | **Average** | |

Distance Adjustment
N/A

## Appendix B Full Monthly Diffusion Tube Results for 2015

### Table M. NO2 Diffusion Tube Results

| Tube Id | *Valid data capture for monitoring period % a* | *Valid data capture 2015%* | Data Capture | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec | Annual mean – raw data c | Annual mean – bias adjusted LWEP Local factor 1.07 | Annual mean – bias adjusted - LWEP factor 0.97 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **KC 31 - Ladbroke Library** | ***100*** | ***100*** | 12 | 44.71 | 42.67 | 45.47 | 56.05 | 40.50 | 45.45 | 39.42 | 45.77 | 52.27 | 57.40 | 46.50 | 36.24 | 46.04 | 49.26 | 44.66 |
| **KC 32 - Holland Park** | ***100*** | ***100*** | 12 | 31.37 | 27.56 | 23.83 | 25.74 | 18.79 | 20.20 | 19.99 | 23.89 | 29.97 | 31.57 | 30.30 | 25.11 | 25.69 | 27.49 | 24.92 |
| **KC 33 - A4 Junction** | **92** | **92** | 11 | 84.08 | 81.66 | 74.35 | n/d | 97.07 | 85.43 | <1.43 | 94.96 | 97.73 | 83.86 | 89.13 | 78.46 | 78.92 | 84.45 | 76.56 |
| **KC 34 - Dove House Green** | **100** | **100** | 12 | 39.86 | 41.47 | 38.69 | 41.03 | 33.02 | 33.06 | 31.58 | 35.61 | 43.18 | 42.27 | 41.78 | 35.62 | 38.10 | 40.76 | 36.95 |
| **KC 35 - Brompton Rd** | **100** | **100** | 12 | 73.54 | 69.10 | 66.26 | 73.89 | 80.29 | 81.35 | 41.47 | 73.78 | 78.75 | 74.20 | 73.37 | 62.78 | 70.73 | 75.68 | 68.61 |
| **KC 38 - Earls Court Station** | **100** | **100** | 12 | 91.06 | 90.00 | 77.12 | 90.62 | 87.44 | 96.25 | 106.55 | 96.51 | 95.99 | 90.82 | 105.69 | 82.34 | 92.53 | 99.01 | 89.76 |
| **KC 39 - Upcerne Road** | **100** | **100** | 12 | 35.18 | 37.50 | 31.35 | 28.77 | 22.09 | 23.75 | 23.17 | 27.86 | 37.68 | 40.53 | 32.32 | 24.40 | 30.38 | 32.51 | 29.47 |
| **KC 40 - Cottage Place** | **100** | **100** | 12 | 36.50 | 42.81 | 34.57 | 39.97 | 33.71 | 35.62 | 36.42 | 41.45 | 41.59 | 43.01 | 41.92 | 38.53 | 38.84 | 41.56 | 37.68 |
| **KC 41 - Ladbroke Crescent** | **100** | **100** | 12 | 34.00 | 37.77 | 33.91 | 34.80 | 29.48 | 24.00 | 23.03 | 28.94 | 36.05 | 40.98 | 35.49 | 29.55 | 32.33 | 34.60 | 31.36 |
| **KC 42 - Pembridge Library** | **92** | **92** | 11 | 40.79 | 43.83 | 38.58 | 36.35 | n/d | 33.26 | 31.83 | 35.77 | 39.98 | 43.07 | 43.21 | 36.49 | 38.47 | 41.16 | 37.32 |
| **KC 43 - St Marks Grove** | **100** | **100** | 12 | 35.68 | 36.96 | 30.61 | 32.92 | 25.83 | 25.58 | 23.45 | 33.35 | 36.47 | 40.25 | 33.13 | 29.58 | 31.98 | 34.22 | 31.02 |
| **KC 44 - Donne Place** | **100** | **100** | 12 | 45.39 | 42.11 | 39.90 | 34.08 | 29.14 | 29.64 | 34.42 | 33.64 | 39.02 | 39.86 | 43.21 | 33.67 | 37.01 | 39.60 | 35.90 |

| | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **KC 45 - Chatsworth Court** | **100** | **100** | 12 | 44.86 | 48.11 | 42.90 | 50.34 | 42.57 | 40.25 | 41.19 | 46.80 | 48.85 | 42.02 | 51.08 | 45.87 | 45.40 | 48.58 | 44.04 |
| **KC 47 - Sion Manning School** | **100** | **100** | 12 | 37.02 | 34.42 | 24.82 | 29.21 | 22.31 | 23.03 | 20.30 | 25.81 | 31.56 | 35.46 | 31.84 | 28.52 | 28.69 | 30.70 | 27.83 |
| **KC 47 - Sion Manning School** | **100** | **100** | 12 | 31.75 | 30.71 | 27.38 | 28.56 | 19.96 | 22.24 | 20.57 | 26.89 | 31.36 | 35.23 | 34.44 | 28.10 | 28.10 | 30.07 | 27.26 |
| **KC 47 - Sion Manning School** | **100** | **100** | 12 | 31.32 | 34.15 | 27.93 | 27.45 | 20.68 | 19.92 | 20.57 | 25.97 | 31.05 | 35.28 | 33.11 | 29.03 | 28.04 | 30.00 | 27.20 |
| **KC 48 - Sloane Square** | **100** | **100** | 12 | 65.58 | 67.56 | 60.66 | 67.37 | 60.04 | 63.39 | 63.52 | 68.72 | 66.22 | 64.41 | 70.10 | 62.23 | 64.98 | 69.53 | 63.03 |
| **KC 49 - Hans Road** | **100** | **100** | 12 | 62.97 | 66.62 | 65.01 | 83.63 | 60.46 | 75.01 | 63.67 | 77.57 | 88.07 | 87.68 | 68.18 | 63.37 | 71.85 | 76.88 | 69.70 |
| **KC 50 - Chelsea PG (gate)** | **100** | **100** | 12 | n/d | 53.21 | 48.74 | 55.90 | 25.60 | 61.78 | 52.85 | 50.55 | 45.50 | 50.11 | 58.62 | 43.62 | 49.68 | 53.16 | 48.19 |
| **KC 51 - Chelsea PG (met)** | **100** | **100** | 12 | 34.03 | 35.99 | 32.11 | 30.94 | 52.29 | 25.58 | 23.43 | 25.25 | 33.56 | 37.28 | 33.95 | 26.28 | 32.56 | 34.84 | 31.58 |
| **KC 52 - Sloane Avenue** | **100** | **100** | 12 | 55.34 | 52.90 | 52.24 | 57.67 | 46.96 | 53.98 | 48.48 | 49.65 | n/d | 61.55 | 63.86 | 57.16 | 54.53 | 58.34 | 52.89 |
| **KC 53 - Walmer House** | **100** | **100** | 12 | 49.58 | 46.90 | 41.58 | 43.55 | 36.26 | 43.27 | 42.70 | 42.55 | 45.56 | 48.18 | 47.92 | 39.02 | 43.92 | 47.00 | 42.60 |
| **KC 54 - Natural History Museum** | **83** | **83** | 10 | 67.09 | 75.20 | 65.58 | 65.81 | n/d | 61.76 | 57.80 | 61.44 | 62.41 | 62.16 | n/d | 74.01 | 65.33 | 69.90 | 63.37 |
| **KC 54 - Natural History Museum** | **83** | **83** | 10 | 67.03 | 68.45 | 56.85 | 67.44 | n/d | 63.63 | 60.97 | 58.51 | 62.72 | 57.56 | n/d | 72.12 | 63.53 | 67.98 | 61.62 |
| **KC 54 - Natural History Museum** | **83** | **83** | 10 | 60.32 | 73.12 | 62.65 | 79.35 | n/d | n/d | 60.20 | 63.54 | 61.46 | 62.23 | n/d | 72.59 | 66.16 | 70.79 | 64.18 |
| **KC 55 - Blantyre Street** | **100** | **100** | 12 | 45.00 | 41.94 | 37.91 | 38.11 | 32.34 | 31.97 | 29.11 | 27.73 | 43.24 | 44.14 | 40.11 | 26.94 | 36.54 | 39.10 | 35.45 |
| **KC 56 - Chelsea Old Town Hall** | **100** | **100** | 12 | 58.68 | 62.14 | 57.29 | 68.91 | 58.63 | 72.34 | 64.12 | 72.34 | 68.12 | 59.28 | 80.89 | 64.70 | 65.62 | 70.21 | 63.65 |
| **KC 57 - Sloane St/Pavilion St** | **100** | **100** | 12 | 42.68 | 46.78 | 41.18 | 47.38 | 35.78 | n/d | 39.28 | 41.39 | 53.10 | 60.51 | 49.20 | 37.41 | 44.97 | 48.12 | 43.62 |
| **KC 58 - Kensington High Street** | **100** | **100** | 12 | 54.46 | 54.35 | 51.29 | 56.91 | 58.34 | 61.50 | 61.17 | 49.42 | 59.21 | 30.17 | 52.45 | 40.97 | 52.52 | 56.20 | 50.94 |
| **KC 59 - Kens High St/Argyle St** | **100** | **100** | 12 | 68.39 | 69.07 | 72.49 | 70.01 | 80.45 | 80.74 | 70.48 | 70.08 | 80.93 | 79.53 | 69.97 | 57.63 | 72.48 | 77.55 | 70.31 |

| | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **KC 60 - Old Brompton Rd** | **100** | **100** | 12 | 71.57 | 70.68 | 56.50 | 60.76 | 57.03 | 59.59 | 58.76 | 61.74 | 66.90 | 63.55 | 73.49 | 56.76 | 63.11 | 67.53 | 61.22 |
| **KC 61 - Limerston Street** | **100** | **100** | 12 | 49.60 | 57.07 | 52.64 | 51.49 | 42.45 | 46.31 | 75.48 | 48.43 | 58.00 | 55.83 | 56.74 | 43.53 | 53.13 | 56.85 | 51.54 |
| **KC 64 - Warwick Rd** | **100** | **100** | 12 | 58.04 | 55.13 | 51.23 | 63.32 | 50.25 | 45.98 | 43.74 | 48.03 | 57.57 | 62.48 | 49.15 | 40.48 | 52.12 | 55.77 | 50.55 |
| **KC 65 - Barlby Rd** | **100** | **100** | 12 | 37.95 | 34.85 | 32.63 | 36.02 | 25.68 | 30.18 | 28.02 | 30.41 | 38.63 | 44.66 | 38.65 | 31.53 | 34.10 | 36.49 | 33.08 |
| **KC 66 - Acklam Rd** | **100** | **100** | 12 | 48.97 | 44.14 | 36.98 | 41.96 | 36.58 | 34.59 | 34.67 | 39.23 | 45.15 | 16.97 | 45.61 | <1.083 | 35.49 | 37.98 | 34.43 |
| **KC 67 - Southern Row** | **100** | **100** | 12 | n/d | 44.69 | 35.56 | 37.52 | 34.33 | 31.99 | 36.43 | 40.31 | 42.12 | 23.72 | 45.82 | 38.18 | 37.33 | 39.95 | 36.21 |
| **KC 68 - Exhibition Rd** | **100** | **100** | 12 | 50.18 | 53.30 | 43.71 | 50.19 | 34.02 | 40.62 | 42.51 | 45.90 | 47.34 | 52.03 | 50.99 | 41.47 | 46.02 | 49.24 | 44.64 |
| **KC 69 - Darfield Way** | **100** | **100** | 12 | 56.63 | n/d | 41.72 | 38.31 | 37.99 | 38.20 | 37.90 | 43.89 | 44.43 | 43.25 | 21.96 | 41.85 | 40.56 | 43.40 | 39.34 |
| **KC 47 - Sion Manning School** | **100** | **100** | 12 | 33.36 | 34.28 | 26.37 | 28.33 | 21.50 | 21.47 | 20.44 | 25.89 | 31.30 | 35.37 | 32.48 | 28.78 | 28.30 | 30.28 | 27.45 |
| **KC 54 - Natural History Museum** | **83** | **83** | 10 | 64.81 | 72.26 | 61.69 | 70.87 | | 62.70 | 59.66 | 61.16 | 62.20 | 60.65 | | 72.91 | 64.89 | 69.43 | 62.94 |

Exceedance of the $NO_2$ 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%

Blue highlighted rows denotes KC54 results of triplicate exposure and mean of triplicate exposure.

Orange highlighted rows denotes KC47 results of triplicate exposure and mean of triplicate exposure

KC47, KC49, KC54 and KC56 are co-located with continuous analysers.

**End**