2015 Air Quality Annual Status Report (ASR) for Brighton & Hove City Council

In fulfilment of Part IV of the
Environment Act 1995
Local Air Quality Management

December 2015

Local Authority Officer	Samuel Rouse
Department	Environmental Health and Licencing
Address	Bartholomew House, Bartholomew Square, Brighton BN1 1JP
Telephone	01273 292256
E-mail	samuel.rouse@brighton-hove.gov.uk
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Overview of Air Quality in Our Area

The Brighton & Hove bus Low Emission Zone a B-road Public Transport Corridor surrounded by the Sussex retail and entertainment hub.

St James Street: B Road Linkage. Buses, taxis and vans in a confined space with a hill climb, flats above retail and high pedestrian footfall on the pavement.

Rottingdean High Street B-road link separate AQMA in a building conservation area.

Terminus Road hill climb to the west side of Brighton mainline station with flats and Terrace houses adjacent to the kerb.

Terminus Road haulage and mixed traffic route Portslade

Cycle Lanes on the inside of bus stops along the Lewes Road Corridor, Brighton

Electromotive and hybrid uptake on the increase with cars, vans and buses

Brighton & Hove City Council has statutory duty to assess air quality under the Environment Act 1995. Monitoring has been carried out since the 1990s and a number of detailed modelling studies have resolved to determine where pollution levels are most concentrated. The city council last revised the boundaries of its Air Quality Management Areas in 2013 and delivered an updated Air Quality Management Area in 2015. The top challenge for local air quality at this time are to work towards compliance with nitrogen dioxide limits. The city council is working closely with bus and taxi operators to minimise emissions of oxides of nitrogen. Since 2014 the council has successfully won £1.4 million in grants from the Department of Transport's Clean Vehicle Transport Fund. In addition to retrofit of the existing fleet bus and minibus operators are procuring new vehicles with cleaner emission profiles. To determine true emission, current projects include detailed tailpipe monitoring tests to determine actual emissions of old, new and retrofitted vehicles.

The public is engaged in what can be done to improve air quality through travel plans, active travel initiatives, anti-idling campaigns. In the Brighton AQMA 62% of

households do not own a car which is one of the highest proportions in England. Bus patronage has doubled in twenty years, hence the importance of managing further growth at the same time as improving air quality.

Air quality in Brighton & Hove City Council

Brighton & Hove has two Air Quality Management areas for nitrogen dioxide. Within these areas (mostly the City Centre and parts of Portslade) it is likely that several thousand people are exposed to nitrogen dioxide above the EU limit value for the protection of human health. Recent monitoring shows some improvement in nitrogen dioxide concentrations most especially around the fringes of the AQMA that is closer to suburbs and background. However, a faster rate of improvement is required in order to comply with the EU limit along certain transport corridors in the AQMA. Approximately 90% of roadside monitoring sites (diffusion tubes) sample at residential locations a few metres from the road carriageway. Whilst a few on pavement kerbside monitors represent busy retail and entertainment areas with high pedestrian footfall and three sites are located in parks remote from any road.

The 2015 Air Quality Action Plan was approved by Defra and the City Councils Environment, Transport and Sustainability Committee. This following a prolonged interdepartmental and public consultation earlier in the year. The Council is working closely with bus and taxi operators, the Low Carbon Partnership and the Department of Transport. There is cross border discussion with adjacent local authorities through the Sussex Air Quality Partnership. We will be liaising with the Environment Agency regarding the permitting of a new part A recovered oil power station located near the Portslade-Shoreham boundary. Wharf access will be in West Sussex with road access via the western part of Brighton & Hove City Council.

Actions to improve air quality

Implemented actions to improve local air quality include anti-engine idling sigs at taxi ranks at level crossings. Brigthon & Hove is one of the first authorities in the UK to have a Low Emission Zone that is for buses along the North Street-Western Road. Fifty buses and select minibus taxis have been retrofitted with selective catalytic reduction and exhaust line insulation in order to reduce emissions of oxides of nitrogen. Funding is allocated for a further 35 buses and additional minibus taxis to

be retrofitted over the next year. The environmental benefits of these improvements are not likely to be monitored before 2017.

Local Priorities and Challenges

Priority is to work towards improvements in the bus fleet in order to meet the requirements of the bus Low Emission Zone. This retrofit contractors will have to work together with bus operators to make this happen.

How to get involved

Officers from transport have door knocked on thousands of properties in East Brighton to share information on travel options and concerns people have over neighbourhoods. Air Quality has been a main item on the agenda at Local Action Team (LAT) meetings and for Rottingdean Parish Council.

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1 Local Air Quality Management

This report provides an overview of air quality in Brighton & Hove City Council during 2014. It fulfils the requirements of Local Air Quality Management (LAQM) as set out in Part IV of the Environment Act (1995) and the relevant Policy and Technical Guidance documents.

The LAQM process places an obligation on all local authorities to regularly review and assess air quality in their areas, and to determine whether or not the air quality objectives are likely to be achieved. Where an exceedance is considered likely the local authority must declare an Air Quality Management Area (AQMA) and prepare an Air Quality Action Plan (AQAP) setting out the measures it intends to put in place in pursuit of the objectives. This Annual Status Report (ASR) is an annual requirement showing the strategies employed by Brighton & Hove City Council to improve air quality and any progress that has been made.

The statutory air quality objectives applicable to LAQM **in England** can be found in Table 1.1 in Annex D.

2 Actions to improve air quality

2.1 Air Quality Management Areas

Air Quality Management Areas (AQMAs) are declared when there is an exceedance or likely exceedance of an air quality objective. After declaration, the authority must prepare an Air Quality Action Plan (AQAP) within 12-18 months setting out measures it intends to put in place in pursuit of the objectives.

A summary of AQMAs declared by Brighton & Hove City Council can be found in Table 2.1. Further information related to declared or revoked AQMAs, including maps of AQMA boundaries are available online at https://www.brighton-hove.gov.uk/content/environment/air-quality-and-pollution/air-quality-management-city. There are no plans to amend or revoke the existing AQMA during the next year.

Table 2-1 – Declared Air Quality Management Areas

AQMA Name	Pollutants and Air Quality Objectives	City / Town	One Line Description	Action Plan
AQMA Name 1	NO_2 Annual and Hourly Average	Brighton, Hove and Portslade	Transport Corridors in and out of the City Centre main roads in Portslade	2015
AQMA Name 2		Rottingdean	Rottingdean High Street	2015

2.2 Progress and Impact of Measures to address Air Quality in Brighton & Hove City Council

Brighton & Hove City Council has taken forward a number of measures during the current reporting year of 2014/15 in pursuit of improving local air quality. Details of all measures completed, in train or planned are set out in Table 2.2. More detail on these measures can be found in the 2015 Action Plan and bus Low Emission Zone. Key completed measures are: retrofit of euro-3 double decker buses to better than euro-5 standard. New design of bespoke Selective Catalytic Reduction for intermediate sized vehicles such as minibus taxis.

Progress on the following measures has been slower than expected due to: to the fact that taxis are committed school and disability contracts and are not always available for retrofits, emission testing and exhaust design work.

Brighton & Hove City Council expects the following measures to be completed over the course of the next reporting year: the bus operators are working towards lower emission of oxides of nitrogen. There is an improving trend in ambient nitrogen dioxide but levels must continue to improve at a faster rate. Brighton & Hove City Council priorities for the coming year are to lobby the Director of Public Health, Transport, Planning and Legal to see air quality improvement as a higher priority for the city in all the decisions it makes.

Table 2.2 - Progress on Measures to Improve Air Quality

Measure No.	Measure	EU Category	EU Classification	Lead Authority or BHCC Department	Planning Phase	Implementation Phase	Key Performance Indicator	Target Pollution Reduction in the AQMA	Progress to Date	Estimated Completion Date	Comments
1	Low Emission Zone for Buses Approved by Committee	Promoting Low Emission Transport	Low Emission Zone (LEZ)	Transport Authority	2013	2015	In the LEZ phase out buses that do not comply with Euro-5	Nitrogen Dioxide levels targeted in the bus LEZ and City AQMA	Scheme in place further improvement to buses required in order to comply with it	DONE	Aim for 36 µg/m^3 NO_2 at continuous analyser on North Street was 63 currently mid 50s
2	2014 CBTF SCRT £750,000 Retrofit Programme for Buses	Promoting Low Emission Transport	Other	Transport Authority	2014	2015	50 Euro-3 double decker buses fitted		50 Fits Completed	DONE	
3	2016 CBTF SCRT £500,000 Retrofit Programme for Buses	Promoting Low Emission Transport	Other	Environmental Protection Team	2015	2016	35 buses fitted to better than euro five standard		Bid Successful Press Release 3rd January 2016	2016/17	

Measure No.	Measure	EU Category	EU Classification	Lead Authority or BHCC Department	Planning Phase	Implementation Phase	Key Performance Indicator	Target Pollution Reduction in the AQMA	Progress to Date	Estimated Completion Date	Comments
4	2015 CVTF SCR £195,000 Retrofit Programme for Minibus Taxis	Promoting Low Emission Transport	Other	Environmental Protection Team	2014/15	2015/16	Bespoke Design 22 mini buses fitted, 3 tested at Millbrook	Substantial Reductions in NOx emissions on School and Disability Services	Design work, four fits and one test completed	2016/17	Working Vehicles not available for fits and tests during school term time
5	Flywheel Hybrid and new Euro-VI bus Purchases	Promoting Low Emission Transport	Company Vehicle Procurement - Prioritising uptake of low emission vehicles	Brighton & Hove Bus Company, Metro Bus and the Go Ahead Group	2014/15	2015/16	Increase euro 6 Fleet Share Reduce Dependence on diesel	Yes	24 New Buses in Regular Service in and around the LEZ / AQMA	2015/16	New buses euro-6 hybrid replace euro-3 without SCRT
6	Taxi Licence Policy	Promoting Low Emission Transport	Taxi emission incentives	Taxi Licence Forum	2014/15	2015/16	Increase Petrol Hybrid and Retrofit Taxis	Yes	Considered by Committee	2016/17	Taxis can Licence in other LAs so scope needs to be wider
7	Anti-Idling signs on taxi ranks in and around the AQMA	Promoting Low Emission Transport	Taxi emission incentives	Taxi Licence Forum	2014/15	2014/15	Reduce unnecessary fuel burn at AQMA taxi ranks	Yes	Delivered	DONE	Second Print Run tbc
8	Assess junction light phasing to reduce traffic queuing in the AQMA	Traffic Management	Other	Transport Authority Consultee Environmental Protection Team	2015/16	2016/17	Less traffic congestion, idling and standing starts in AQ hotspots	Yes	Scoping Studies	2016/17	EP need to liaise with Transport

Measure No.	Measure	EU Category	EU Classification	Lead Authority or BHCC Department	Planning Phase	Implementation Phase	Key Performance Indicator	Target Pollution Reduction in the AQMA	Progress to Date	Estimated Completion Date	Comments
9	Rapid vehicle charging network OLEV funded project with electromotive	Promoting Low Emission Transport	Procuring alternative Refuelling infrastructure to promote Low Emission Vehicles, EV recharging, and Gas fuel	Sussex Air Quality Partnership	2013/14	2014/15	Rapid, fast and slow elecromotive charge choices in BHCC and Sussex	Wider Area with potential benefits for more than one AQMA	Implemented 2014/15 use is monitored on the network is Withdean in Brighton on London Road route into AQMA	DONE	Infrastructure part of wider South East network
10	Alternative fuel Infrastructure for vehicles in the AQMA	Promoting Low Emission Transport		Environmental Protection Team	2014/15	2015/16	Transport Options on Fuel Ethanol, Vegetable Oils Bio-methane	Yes	Discussion with innovative partners	Proposal	Requires company or grant to progress
11	Air Quality Assessment for Major Transport Schemes in the AQMA seek opportunities for AQ improvement	Transport Planning and Infrastructure	Public transport improvements-interchanges stations and services	Transport Authority and Environmental Protection Team	2014/15	Ongoing	Transport schemes in the AQMA assess how air quality can be improved as priority?	Better traffic flow, wider concourse, planting & amenity green space	Detailed Assessments carried out for Valley Gardens	Ongoing	Transport Funds such as Local Sustainable Transport Fund (LSTF) must prioritise AQ in AQMAs

Measure No.	Measure	EU Category	EU Classification	Lead Authority or BHCC Department	Planning Phase	Implementation Phase	Key Performance Indicator	Target Pollution Reduction in the AQMA	Progress to Date	Estimated Completion Date	Comments
12	Assess Environment Capacity of transport corridors through the AQMA	Transport Planning and Infrastructure	Public transport improvements-interchanges stations and services	Environmental Protection Team	2014/15	Ongoing	Identify where too many vehicles of a certain emission category for the confined space, street or road link	Assess heavy vehicle numbers relative to NO_2 limit consider likely constraints and capacity limitations	2015/16	2017/18	Guidance for Executive Leadership Team and Policy Decisions
13	Actively seek alternative renewable solutions and avoid combustion plant in the AQMA	Avoid Combustion Plant and Seek Alternatives	Other measure for low emission fuels for stationary and mobile sources	Active via the planning process	2015 AQ action plan policy	2014/15	Solid fuel burning prone to emission peaks on starting up. NOx and PM higher than for oil and coal	Yes	Ongoing	ONGOING	Appropriate location for carbon saving strategies such as wood burning is not likely to be in high density AQMAs and or Smoke Control Areas

Measure No.	Measure	EU Category	EU Classification	Lead Authority or BHCC Department	Planning Phase	Implementation Phase	Key Performance Indicator	Target Pollution Reduction in the AQMA	Progress to Date	Estimated Completion Date	Comments
14	If Developments in the AQMA must have combustion plant aim for utlralow NO_X emission rates better than Code for Sustainable Homes	Promoting Low Emission Plant after seeking alternatives	Other measure for low emission fuels for stationary and mobile sources	Active via the planning process		2014/15	>20 mg/MJ NOx for new gas boilers in and adjacent to the AQMA	Yes	Ongoing	ONGOING	
15	Where new gas combustion plant is proposed in the AQMA to have vertical flue terminations above roof apex in accordance with guidance on flue terminations	Promoting Good Dispersion on Fixed Plant	Other measure for low emission fuels for stationary and mobile sources	Active via the planning process	Policy of the 2015 AQ action plan	Conditions on planning applications	Effective dispersion and exposure avoidance Planning permission could be refused for effective flue height if not an industrial area	Yes	Some fixed plant applications in the AQMA not received planning permission	Ongoing	Measure relates to flue height, location & dispersion and not emission rate

Measure No.	Measure	EU Category	EU Classification	Lead Authority or BHCC Department	Planning Phase	Implementation Phase	Key Performance Indicator	Target Pollution Reduction in the AQMA	Progress to Date	Estimated Completion Date	Comments
16	Mitigate plans for residential adjacent to roadside	Policy Guidance and Development Control	Air Quality Planning and Policy Guidance	Active via the planning process	Policy of the 2015 AQ action plan	Where appropriate Conditions on planning applications	Measure is not about emissions. Effective exposure avoidance	Avoid pollution in the AQMA	constant	Ongoing	Ventilation strategy to avoid dose and exposure to pollutants
17	Encourage domestic solid fuel burning to use smokeless fuels and exempt appliances	Domestic Solid Fuel Burning	Clean Air Act	Environmental Protection Team duties relating to Statutory Nuisance and the Clean Air Act	2012/13	Now	Less NOx, PM and smoke reduction of indoor CO	Pamphlet and web sites Delivered	Public Engagement	Constant	Reduce complaints from solid fuel burning in the home
18	Households and building trade to avoid fires to dispose of waste in the AQMA	Domestic Solid Fuel Burning	Statutory Nuisance	Environmental Protection Team duties relating to complaints and Nuisance	2012/13	Now	Less NOx, PM and smoke	Web information	Advice given when complaint received	Constant	Reduce complaint for fires
19	Explore Infrastructure and Project Development S106 policy for offsite e.g low emission vehicles and tree planting	Policy Guidance and Development Control	Air Quality Planning and Policy Guidance	Planning	2015/16	Funding stream open to support AQ improvement	Insure beneficial change from new development	Part of AQAP	Talks across departments	Constant	Developer Contribution to improve AQ needs more commitment from government

Measure No.	Measure	EU Category	EU Classification	Lead Authority or BHCC Department	Planning Phase	Implementation Phase	Key Performance Indicator	Target Pollution Reduction in the AQMA	Progress to Date	Estimated Completion Date	Comments
20	Intervention measures to consider alternative routings trails for traffic	Transport Planning and Infrastructure	Public transport improvements-interchanges stations and services	Transport Authority	To consider	NO2	Reduce Traffic entering AQMA especially with a view to main contributors	To be considered	Talks	Proposal	
21	Higher Standards for bus LEZ Moving towards Euro-6 and higher % of Hybrid	Promoting Low Emission Transport	Low Emission Zone (LEZ)	Transport Authority and Environmental Protection Team	2016/17	Frequent Services to be Euro-6 or Hybrid. OME Euro-5 fine-tuned for operation and drive circuit	Target bus corridors in AQAP assessment	LES Phase II First mention in AQAP March 2015	ONGOING		

Measure No.	Measure	EU Category	EU Classification	Lead Authority or BHCC Department	Planning Phase	Implementation Phase	Key Performance Indicator	Target Pollution Reduction in the AQMA	Progress to Date	Estimated Completion Date	Comments
22	Explore Grant Application for lower emissions from construction traffic	Promoting Low Emission Transport	Company Vehicle Procurement -Prioritising uptake of low emission vehicles	Transport Authority and Environmental Protection Team	To Confirm	Seek funds for retrofits and or make up the difference of hybrid purchases	Target haulage corridors	First mention in AQAP 2015	Idea	Aim for 95% NOx reduction with monitor check	
23	Explore Grant Application for Lower Emission Standard for frequent HGV from the Port Inland	Promoting Low Emission Transport	Company Vehicle Procurement -Prioritising uptake of low emission vehicles	Transport Authority	2017	Seek funds for retrofits and or make the difference on hybrid purchase	Target haulage corridors	First mentioned in AQAP 2015	Idea	Aim for 95% NOx reduction with monitor check	
24	Consider impact of pedestrian crossing points on traffic flow and impact on emissions and air quality	Traffic Management	Other	Road Safety	To consider	Reduction in frequency of queuing breaking and accelerations	Improve Flow of traffic, cyclists and pedestrians	Included on consultation comments on walk to school transport schemes	Traffic refuge Islands	Constant	

Measure No.	Measure	EU Category	EU Classification	Lead Authority or BHCC Department	Planning Phase	Implementation Phase	Key Performance Indicator	Target Pollution Reduction in the AQMA	Progress to Date	Estimated Completion Date	Comments
25	Review Central parking spaces that attracts traffic into the AQMA	Traffic Management	Emission based parking or permit charges amount of AQMA Parking	Parking	Proposed	Reduction in general traffic attracted to the Central AQMA	Reduction in emission for general traffic	First mentioned in AQAP 2015	Project	Take out general traffic emissions	Make sure parking based emssions are for NOx and not only CO_2
26	Consider Freight Consolidation Centres 3km along A23 and A270 from AQMA boundary to City Centre	Freight and Delivery Management	Freight Consolidation Centre Freight Partnerships for city centre deliveries	Transport Authority Consultee Environmental Protection	2015/16	Reduce HGV impact on AQMA	Impact on AQMA	Discussed in the past and referenced in LTP4	Consider	Avoidance of HGV emissions in AQMA for frequent services	
27	Based on Existing Evidence Buses to reduce emissions for steep uphill sections. Consider preference for downhill routings	Traffic Management	Other	Environmental Protection Team Bus Company	Idea discuss at public meeting	NO_2 on uphill sections monitored to determine trends	At steeper road links with bus routes	Due to works North Street Hill climb first half of 2015	For a trail some buses avoid St James Street	Substantial emission reduction where engines are in load	

Measure No.	Measure	EU Category	EU Classification	Lead Authority or BHCC Department	Planning Phase	Implementation Phase	Key Performance Indicator	Target Pollution Reduction in the AQMA	Progress to Date	Estimated Completion Date	Comments
28	Location of new Taxi Ranks to consider ambient air quality	Traffic Management	Other	EP Taxi licence Forum	2014/15	2015	At modal interchanges and new developments	Discussions on routing around Station Gateway	Ongoing	Move to locations away from residential & better for dispersion	
29	Coach Strategy	Traffic Management	Other	Transport Authority Consultee Environmental Protection Team	4 year plan	2016/17	Mentioned in LTP4	Response to complaints	2019	Around coach parking areas	

2.3 $PM_{2.5}$ – Local Authority Approach to Reducing Emissions and or Concentrations

Local Authorities are expected under Chapter 7 of Policy Guidance LAQM.PG(16) to work towards reducing emissions and/or concentrations of pollutant $PM_{2.5}$. There is clear evidence that particulate matter ($PM_{2.5}$) has a significant impact on human health, including premature mortality, allergic reactions, and cardiovascular diseases.

Brighton & Hove City Council is working to address $PM_{2.5}$ through the following way/s: Since early 2015 $PM_{2.5}$ is monitored at two sites in Brighton. The finer particulates are targeted instead of PM_{10} to align more closely with reports from Public Health England and health interests of the Jount Strategic Needs Assessment. The results are reported to the City Council's Executive Leadership Team (ELT) which steers interdepartmental policy and priorities.

We are taking the following measures:

- Selective Catalytic Reduction Technology (SCRT) on the bus and minibus taxi fleet primarily to mitigate emission of NOx, but also with benefits for emission of particulate
- Construction Environment Management Plans (CEMP) to use conditions to supress dust avoid find particulate emissions from fixed diesel plant
- Where possible major construction barges heavy load by sea instead of transporting via road freight as with the new i-360 (Brighton Tower)
- University of Brighton and the Sussex network to improve understanding of $PM_{2.5}$ fraction that is sea salt, long range and from anthroprogenic local sources
- PAH monitor at background is compliant with all objectives and shows a seasonal pattern; high concetrations in the winter are though to releate to coal burning in domestic properties and or lack of vertical dispersion, convective movements, sea- land breazes more prevalent on the spring and summer

3 Air Quality Monitoring Data and Comparison with Air Quality Objectives and National Compliance

3.1 Summary of Monitoring Undertaken

3.1.1 Automatic Monitoring Sites

This section sets out what monitoring has taken place and how it compares with objectives.

Brighton & Hove City Council has undertaken automatic (continuous) monitoring set back from North Street and adjacent to Lewes Road since 2012. The active sites have a committed contract to monitor the air until at least 2018. Table A.1 in Appendix A shows the details of the sites. National monitoring results that are part of the Automatic Urban Rural Network (AURN) are available at http://uk-air.defra.gov.uk/networks/network-info?view=aurn.

Maps showing the location of the monitoring sites are provided in Appendix A. Further details on how the monitors are calibrated and how the data has been adjusted are included in Appendix C.

3.1.2 Non-Automatic Monitoring Sites

Brighton & Hove City Council undertook non- automatic (passive) monitoring of nitrogen dioxide (NO_2) at sixty-four sites during 2014. Table A.2 in Appendix A shows the details of the sites. There are two triplicate sets co-located with the roadside continuous analysers.

Maps showing the location of the monitoring sites are provided in Appendix A. Further details on Quality Assurance/Quality Control (QA/QC) and bias adjustment for the diffusion tubes are included in Appendix C.

3.2 Individual pollutants

The air quality monitoring results presented in this section are, where relevant, adjusted for “annualisation” and bias. Further details on adjustments are provided in Appendix C.

3.2.1 Nitrogen Dioxide (NO_2)

Table A.3 in Appendix A compares the ratified and adjusted monitored NO_2 annual mean concentrations for the past 5 years with the air quality objective of 40µg/m^3. For diffusion tubes, the full 2014 dataset of monthly mean values is provided in Appendix B.

Table A.4 in Appendix A compares the ratified continuous monitored NO_2 hourly mean concentrations for the past 5 years with the air quality objective of 200µg/m^3, not to be exceeded more than 18 times per year.

3.2.2 Particulate Matter (PM_{10})

Table A.5 in Appendix A compares the ratified and adjusted monitored PM_{10} annual mean concentrations for the past 5 years with the air quality objective of 40µg/m^3.

Table A.6 in Appendix A compares the ratified continuous monitored PM_{10} daily mean concentrations for the past 5 years with the air quality objective of 50µg/m^3, not to be exceeded more than 35 times per year.

There have been not exceedence of the standard the council is now commited to monotring $PM_{2.5}$ instead of $PM_{10.}$

3.2.3 Particulate Matter ($PM_{2.5}$)

The council started to monitor $PM_{2.5}$ in 2015 and will report results to the next Annual Status Report (ASR) that is due in 2016. Since there were no evident exceedances of PM_{10} it is justifiable to switch monitors to $PM_{2.5}$. In 2011 Defra ceased to monitor PM_{10} at roadside near Pavilion Parade and instead started $PM_{2.5}$ in Preston Park at the national Automatic Urban Rural Network site. This has helped to establish the baseline for $PM_{2.5}$. The objective is to reduce $PM_{2.5}$ baseline by 15% by 2020. This is equivalent to an annual average of 11 µg/m^3. This aligns more closely with the aims of the Health Directorate, the Joint Strategic Needs Assessment and is consistent with the Public Health Outcomes Framework (PHOF) indicator.

3.2.4 Sulphur Dioxide (SO_2)

The city council has not monitored Sulphur Dioxide (SO_2) since 2009. Past results were well within the air quality limits. The University of Brighton has received funding from the JOQUIN European fund to monitor a number of pollutants and results will be available for SO_2 from late 2015.

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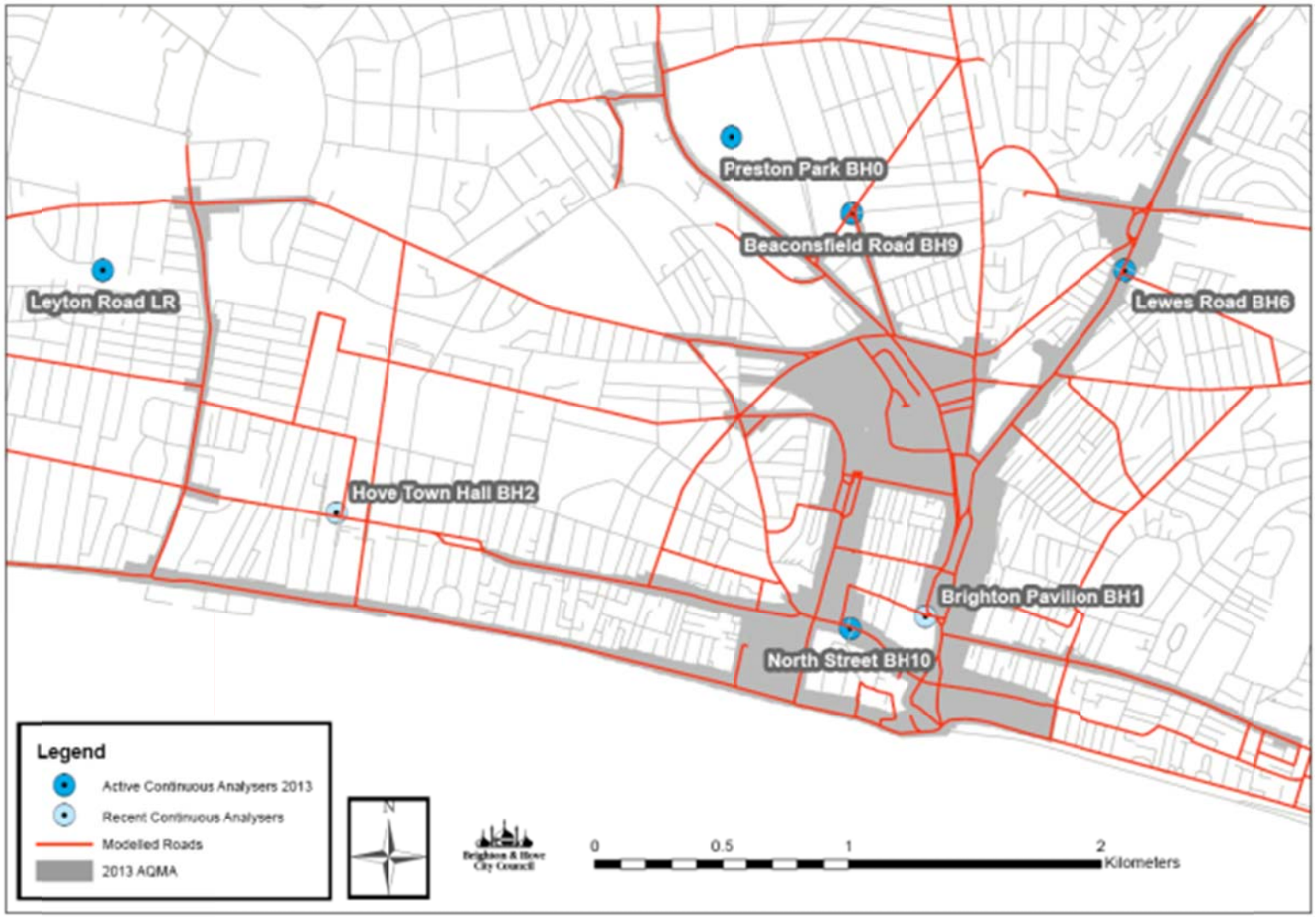
Appendices

Appendix A	Map of Continuous Analysers
Appendix B:	Tables: Monitoring Details
Appendix C:	Full Monthly NO_2 Diffusion Tube Results
Appendix D:	Supporting Technical Information/QA-QC for Air Quality Monitoring Data
Appendix E:	Summary of Air Quality Objectives in England

Appendix A Continuous Analyser Locations and Central AQMA



Appendix B: Monitoring Results

Table A.1 – Details of Local and National Automatic Monitoring Sites Brighton & Hove

Site Name	Site Type	Active Monitoring Period	X OS Grid Ref	Y OS Grid Ref	Pollutants Monitored	In NO_2 AQMA?	Monitoring Analyser Techniques	Relevant Exposure?	Triangular Distance to kerb of main road (m)	Does this location represent worst-case exposure?
Beaconsfield Road Monitor BRM BH9	Roadside	Feb 2011 to Jan 2014	531002	105918	NO_x, O_3, PM_{10}	Yes near Boundary	API and TEOM	Nearby houses and doctors surgery	3	No
Lewes Road Monitor BH6	Roadside	Since June 2012	532082	105694	NO_x	Yes	API	Yes (3)	1.5	Yes
North Street Monitor BH10	Roadside	Since April 2012	530995	104271	NO_x		API	Yes (0)	6	
Preston Park BH0	Urban Background	Since 2006	530526	106218	NO_x, O_3, $PM_{2.5}$	No	API and Partisol	No	200	No
Hove Town Hall BH2	Roadside	1998 to 2012	528963	104731	NO_x	No	API	In Line	5	No
Brighton Pavilion BH1	Urban	1998 to 2010	531295	104319	NO_x		API	No	18	No
Stanmer Park BH8	Rural	Since March 2010	533457	109526	O_3	N/A	API	No	> 200	No
Foredown Tower BH3	Rural	Up to 2010	525690	107169	O_3	N/A	API	No	150	No
Lullington* Heath Wealden AURN	Regional Background	Since 1990s	553800	101600	NO_x, O_3, SO_2,	No	API	No	N/A	No
Telscombe Cliffs, LS01 Lewes DC	Roadside	2002 to 2009	540010	101305	NO_x, O_3, PM_{10}	No	API, TEOM	No	4	No
Leyton Road, Hove LR	Urban Background	Since 2002	528041	105693	PAH	N/A	Anderson Analyser	No	N/A	No

Table A.2 – Details of Non-Automatic Monitoring Sites for West, Central and East parts of Brigthon & Hove

Archive Diffusion Tube Number or year started	Diffusion Tube change order in West Area	X OS Grid Ref	Y OS Grid Ref	Street	Near A or B Road?	Horizontal Distance to kerb of road (m)	Estimated Height (m)	Triangular Distance to kerb of road (m)	Does this location represent worst-case exposure?
DT 05	W01-C12	530969	104785	Queens Road	A2010	3.5	2.8	4.5	Y
2010	W02	530963	104837	Surrey Street	A2010	4.6	2.6	5.3	Y
DT 06	W03	530963	104994	Terminus Road Hill	A2010	1.8	3	3.5	Y
DT 73	W04	530809	105362	Chatham Place-New England Road	B2122	1.6	3	3.4	Y
DT 74	W05	530776	105400	Old Shoreham Road- Hill	A270	1.7	3.2	3.6	Y
2014	W07-2014	530554	105142	Dyke Road-Seven Dials **RS***	A2010	0.2	3	3.0	Y
DT 69	W08	530586	105104	Buckingham Place-Seven Dials	A2010	7.6	3.5	8.4	Y
DT 76	W10	530302	104415	Western Road west of Churchill Sq	B2066	3.2	3.2	4.5	Y
2012	W12-12	528423	104809	Church Road Hove	B2066	3	2.7	4.0	Y
DT 57	W16	526248	104857	Wellington Road-Basin Road	A259	2.1	2.7	3.4	Y
DT 59a	W17	525931	104961	Wellington Road-Church Road	A259	1.3	2.7	3.0	Y
2010	W18	525970	105230	Vale Park, Portslade **BG**	PARK	97	2.8	97.0	N
DT 58a	W19	525657	105696	Trafalgar Road, Portslade facade	B2139	2.7	2.8	3.9	Y
2010	W20-12	525653	105717	Trafalgar Road, Portslade kerbside	B2139	1.5	2.8	3.2	Y
DT 52	W21	528406	105874	Sackville Road-Old Shoreham Rd	A2023	2	2.8	3.4	Y
DT02	W22	530578	104046	Kingsway the Grand Hotel	A259	2.6	2.8	3	N

All West Area sites are inside the 2013 revised AQMA with exception of W18 background. West Area ("W" codes) include a tube replacement circuit orienteered from the City Centre and on to Hove and Portslade.

All monitors are located on residential building-lines or facades with exception of those denoted with: **RS** = Roadside and **BG** = Background.

Archive Diffusion Tube Number or year started	Diffusion Tube change order in Central Area	X OS Grid Ref	Y OS Grid Ref	Street	Near A or B Road?	Horizontal Distance to kerb of road (m)	Estimated Height (m)	Triangular Distance to kerb of road (m)	Does this location represent worst-case exposure?
2010	C01	531171	103962	East Street		2.7	2.4	3.6	N
2010	C02	531231	103919	Near Pool Coach Station		1.2	2.5	2.8	Y
DT 40	C03	531439	104045	Saint James Street	B2118	2.7	2.7	3.8	Y

Archive Diffusion Tube Number or year started	Diffusion Tube change order in Central Area	X OS Grid Ref	Y OS Grid Ref	Street	Near A or B Road?	Horizontal Distance to kerb of road (m)	Estimated Height (m)	Triangular Distance to kerb of road (m)	Does this location represent worst-case exposure?
2010	C04	531228	104088	Lower North Street-Castle Square	B2066	5	2.7	5.7	Y
2012	C05-12	531230	104260	Pavilion Gardens Background **BG**	N/A	102	2.8	102	N
DT 86	C08	531292	104321	Brighton Pavilion Lower	A23	18	2.4	18.2	N
DT 09	C09	531302	104392	Marlborough Place	A23	2.8	3.2	4.3	Y
2012	C10-12	530995	104271	North Street Ship Street BH10 Triplicate	B2066	6	2.5	6.1	Y
DT 77	C11	530947	104284	North Street Central	B2066	5.8	3	6.5	Y
2012	C11-12	530890	104302	North Street Clock Tower	B2066	>1	2.5	2.7	Y
2011	C12	530900	104451	Queens Street north of Clock Tower	A2010	3	3	4.2	Y
2012	C12-12	531014	104302	Main Station Taxi Rank	A2010	2.5	2.5	2.8	Y
2014	C13-14	530770	104363	Lower Dyke Road-Churchill Square	B2121	1	3.1	3.3	N
2010	C14	530833	104276	West Street south of Clock Tower	A2010	3.9	2.8	4.8	N
DT 10	C15	531401	104669	Gloucester Place re-instated 2014	A23	7.8	3	8.4	Y
DT 11	C16	531400	104844	York Place	A23	4	2.8	4.9	Y
DT 15a	C17-12	531364	104982	Cheapside nr Pelham Street	A270	2.4	2.4	3.4	Y
2014	C18-14	531376	105012	London Road near Oxford	A23	1.3	2.8	3	Y
2014	C18	531376	105012	Oxford Street-London Road	C-Link	2.2	2.5	3.3	Y
DT 27a	C19	531472	105161	Oxford Street-Ditchling Road	C-Link	2.2	2.6	3.4	Y
DT 25	C20	531496	105315	Ditchling Road-Viaduct Terrace	A23	4.2	2.2	4.7	Y
DT 24	C21	531451	105356	Viaduct Terrace	A23	1.8	3.1	3.6	Y
DT 26	C22	531424	105286	Kingsbury Street ceased >2013 **BG**	N/A	57	3	57.1	N
DT 17	C23	531189	105375	London Road-Preston Circus	A23	4.5	3	5.4	Y
DT 16	C24	531101	105443	New England Road-Preston Circus	A270	2.2	2.8	3.6	Y
2010	C25	530985	105419	New England Road-Argyle Road	A270	2.3	2.7	3.5	Y
2010	C27	531151	104850	Trafalgar Street	B2199	1.3	2.5	2.8	Y
2010	C28	531032	104843	Frederick Place	B2199	1.4	2.4	2.8	Y
2014	C29	530848	103970	Kingsway Facade	A259	4	2	4.2	Y

All Central Sites are inside the 2013 AQMA with exception of C01 East Street and C05-12 Pavilion Gardens Background. All Central ("C") diffusion tube monitors are located in Central Brighton.

Archive Diffusion Tube Number or year started	Diffusion Tube change order in East Area	X OS Grid Ref	Y OS Grid Ref	Street	Near A or B Road?	Horizontal Distance to kerb of road (m)	Estimated Height (m)	Triangular Distance to kerb of road (m)	Does this location represent worst-case exposure?
DT19 moved	E01	531090	105510	Preston Road-Preston Circus	A23	3.5	2.8	4.5	N
DT21	E02	530233	106515	Preston Road-Preston Drove	A23	3	2.7	4.0	Y
2012	E02-12	530233	103369	The Drove	C-Link	2.4	2.5	2.6	Y
DT 22	E06	531102	105615	Beaconsfield Road-Preston Circus	A23	3	2.6	4.0	Y
2012	E07-12	531805	105303	Lewes Road Elm Grove Junction	A2073	2.4	2.8	2.9	Y
DT 30	E08	532085	105740	Lewes Road-Inverness Road	A2073	3.5	2.6	4.4	Y
2010	E09	532107	105735	Lewes Rd East side of Gyratory	A2073	5	2.7	3	Y
2010	E10	532126	105838	Vogue Gyratory Island	A270	4.1	2.7	4.9	Y
DT 31	E12	532021	105946	Hollingdean Road	C1060	1.7	2.9	3.4	Y
DT 32	E14	532409	106370	Lewes Road Lectern Pub	A270	2.7	2.6	3.7	Y
2012	E15-12	532300	106159	Lewes Road Coombe Terrace	A270	3.6	2.6	4.4	Y
DT 38	E16	531396	104344	Grand Parade Middle	A23	3.8	3.2	5.0	Y
DT 08	E17	531402	104365	Grand Parade University Building	A23	4.2	2.7	5.0	Y
2013	E17-13	532614	103813	Paston Place adjacent to taxi rank	N/A	1	3	3.2	Y
DT 43	E18	532759	103810	Eastern Road opposite Hospital	C5260	1.9	2.9	3.5	Y
DT 78	E21	536914	102446	High Street-Vicarage La, Rottingdean	B2123	0.8	2.6	2.7	Y
DT 79	E22	536968	102274	High Street Rottingdean East Side	B2123	1.7	2.6	3.1	Y
2010	E23	536966	102273	High Street Rottingdean West Side	B2123	0.4	2.6	2.6	Y

All East Areas Sites are within the 2013 AQMA with the exception of E17-13. The East Area ("E") circuit includes north and east of the city centre, Royal County Hospital and Rottingdean Village which has its own separate AQMA.

Table A.3 – Annual Mean NO_2 Monitoring Results

Site ID	Site Type	Monitoring Type	Valid Data Capture for Monitoring Period (%) (1)	Valid Data Capture 2015 (%) (2)	NO_2 Annual Mean Concentration (µg/m^3) (3)				
					2011	2012	2013	2014	2015
BH6	Kerbside	Automatic	N/A			**50**	**48.4**	**48.7**	tbc
BH9	Roadside			N/A	36.3	35.9	31	N/A	
BH10	Roadside Facade					**<u>63</u>**	**59.7**	**56.4**	tbc

Notes: Exceedences of the NO_2 annual mean objective of 40µg/m3 are shown in **bold**.

NO_2 annual means exceeding 60µg/m^3, indicating a potential exceedence of the NO_2 1-hour mean objective are shown in **<u>bold and underlined.</u>**

(1) data capture for the monitoring period, in cases where monitoring was only carried out for part of the year.

(2) data capture for the full calendar year (e.g. if monitoring was carried out for 6 months, the maximum data capture for the full calendar year is 50%).

(3) Means for diffusion tubes have been corrected for bias. All means have been "annualised" as per LAQM.TG (16) if valid data capture for the full calendar year is less than 75%. See Appendix C for details.

Annual Mean Results µg/m^3 from Continuous Analysers including AURN background

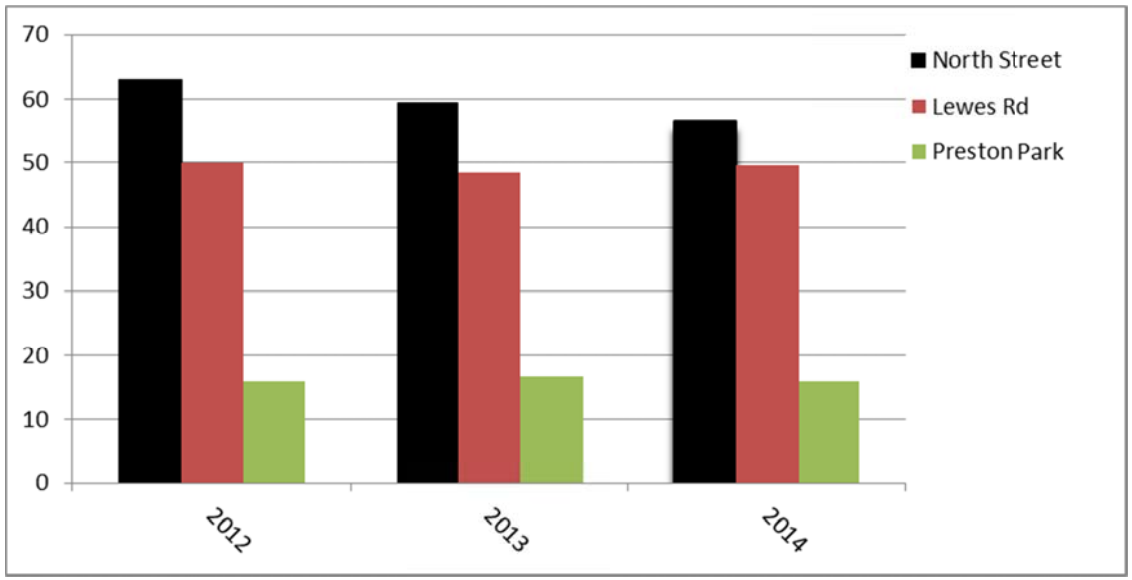


Table A.4 – 1-Hourly Mean NO_2 Monitoring Results

Site ID	Site Type	Monitoring Type	Valid Data Capture for Monitoring Period (%) (1)	Valid Data Capture 2014 (%) (2)	NO_2 1-Hour Means > 200µg/m^3 (3)				
					2011	2012	2013	2014	2015
BH6	Kerbside	Automatic	N/A	95		(6)	17	33	tbc
BH9	Roadside				5	1	Monitor moved to BH10		
BH10	Roadside Facade			80		**(32)**	11	8	tbc

Notes: Exceedences of the NO_2 1-hour mean objective (200µg/m^3 not to be exceeded more than 18 times/year) are shown in **bold.**

(1) data capture for the monitoring period, in cases where monitoring was only carried out for part of the year.

(2) data capture for the full calendar year (e.g. if monitoring was carried out for 6 months, the maximum data capture for the full calendar year is 50%).

(3) If the period of valid data is less than 90%, the 99.8th percentile of 1-hour means is provided in brackets.

On Lewes Road BH6 Nitrogen Dioxide Results in 2014 showed significant spikes at the end of August and during the first week of September.

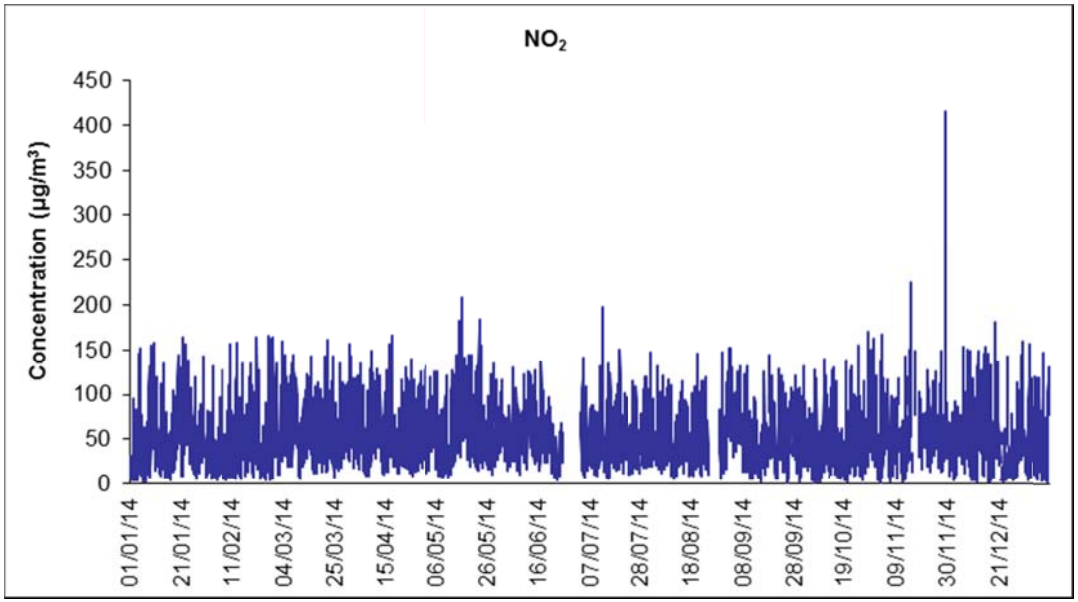


Table A.5 - Annual Mean PM_{10} Monitoring Results

Site ID	Site Type	Valid Data Capture for Monitoring Period (%) (1)	Valid Data Capture 2014(%) (2)	PM_{10} Annual Mean Concentration (µg/m^3) (3)				
				2011	2012	2013	2014	2015
BH6	Kerbside		N/A				22.3	$PM_{2.5}$
BH9	Roadside	N/A	N/A	22	27.7	Monitor moved to BH10		
BH10	Roadside Facade	N/A	83.6			26	26.1	$PM_{2.5}$

Notes: Exceedences of the PM_{10} annual mean objective of 40µg/m^3 are shown in **bold.**

(1) data capture for the monitoring period, in cases where monitoring was only carried out for part of the year.

(2) data capture for the full calendar year (e.g. if monitoring was carried out for 6 months, the maximum data capture for the full calendar year is 50%).

(3) All means have been "annualised" as per Technical Guidance LAQM.TG (16), valid data capture for the full calendar year is less than 75%. See Appendix C for details.

Table A.6 – 24-Hour Mean PM_{10} Monitoring Results

Site ID	Site Type	Valid Data Capture for Monitoring Period (%) (1)	Valid Data Capture 2014 (%) (2)	PM_{10} 24-Hour Means > 50µg/m^3 (3)				
				2011	2012	2013	2014	2015
BH6	Kerbside	N/A						$PM_{2.5}$
BH9	Roadside	N/A	N/A	N/A	15	Monitor moved to BH10		
BH10	Roadside Facade	N/A				3	9	$PM_{2.5}$

Notes: Exceedences of the PM_{10} 24-hour mean objective (50µg/m^3 not to be exceeded more than 35 times/year) are shown in **bold.**

(1) data capture for the monitoring period, in cases where monitoring was only carried out for part of the year.

(2) data capture for the full calendar year (e.g. if monitoring was carried out for 6 months, the maximum data capture for the full calendar year is 50%).

(3) If the period of valid data is less than 90%, the 90.4th percentile of 24-hour means is provided in brackets.

Appendix B: Full Monthly Diffusion Tube Results for 2015

Table B.1 – NO_2 Monthly Diffusion Tube Results 2014 West Area

Site ID West Area	Bias Correction NO_2 ($\mu g/m^3$) Time Weighted Annual Average													
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual Mean	
													Raw Average	Bias Adjusted
W01	54	50	55	61	44	51			58	46	48	44	51.4	**47.9**
W02	40	63	48	45	42	39	24		50	38	56	30	39.7	38.3
W03	53		76	55	51	59	47	48	54	51	57	54	60.5	**54.8**
W04	52	46	43	47	50	50	33	45	59	49	47	52	52.5	**47.7**
W05	51	48	53	50	54	44	41	46	56	51	60	57	56.0	**50.8**
W07-14				39	45	42	37	36	42	44	43	36	44.6	**40.4**
W08	52	40	41	42	41	44	34	42	39	50	43		43.0	39.7
W10	65	60	69	42	52	50	41	42	42	61	42	52	56.7	**51.7**
W12-12	40	30	45	38	41	39	35	34	39	41	41	38	42.2	38.4
W16	58	41	41	42	45	46	39	43	2	45	38		44.0	**40.3**
W17	39		51		50	47	38	45	53	36	49	46	49.9	**44.9**
W18	26	18	25		17	16	15	14	19	19	31	26	22.6	20.7
W19	57	41	48	47	45	0	39	37	45	47	47	45	49.6	**46.0**
W20-12	56	44	47	41	45	48		42	52	52	52	41	51.8	**47.5**
W21	44	47	46	39	46	39	38	42	45	42	47	57	48.5	**44.2**
W22	36	36	48	51	45	44	48	49	40	36	45		47.8	**43.3**

Table B.2 – NO_2 Monthly Diffusion Tube Results 2014 Central Area

Site ID Central Area	Bias Correction NO_2 (µg/m^3) Time Weighted Annual Average												Annual Mean	
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Raw Data	Bias Adjusted *0.91
C01	32	25	39										35.0	31.2
C02	38	31	41	36	31	35	45	33	35	31	38	32	38.9	35.4
C03	52	27	44	35	32	36		38	39		42	39	42.3	38.7
C04	54	59	58	72	44	59	72	59	52	58	51	57	63.7	**58.0**
C05-12	28	22	33	23	20	20		19	25	3	33	27	25.3	23.0
C08	39	26	37	33	29	29	37	30	31	29	44	34	36.7	33.4
C09	44	66	50	60	60	58	60	49	55	81		52	63.5	**58.1**
C10-12	37	38	40	39	37	36	49	33	37	38	38	38	60.2	**56.9**
C11	39	59	72	62	92	67	82	75	55	57	61	66	72.2	**64.9**
C11-12	40	116	142			134	142	119	89	135		113	121.8	**111.0**
C12	54	41	58	63	54	59	67	52	61	42	50		55.5	**50.6**
C12-12	54	56	63	48	51	53	55	52	48		45		57.7	**52.5**
C13-14	54	54	64	53	52	55	64	35	47	59	52	47	58.2	**53.3**
C14	56	27	40	39	32	40	46	27	40	32	45	33	40.6	38.6
C15	57	45	44	42	48	44	47	45	45	50	45	49	51.4	**47.1**
C16	57		50	52	49	52	49	45	38	56	47		49.6	**45.8**
C17-12	75	62	72	61		100	63	57	54	79	49	60	73.1	**65.2**
C18-14	75	70	83	70	63	71	75	82	74	87	75	96	84.4	**76.5**
C18	86	45	79	66	64	75	58	57	50			75	72.0	**65.8**

Site ID Central Area	Bias Correction NO_2 ($\mu g/m^3$) Time Weighted Annual Average												Annual Mean	
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Raw Data	Bias Adjusted *0.91
C19	60	49	51			50	46	46		47	50	55	55.5	**50.8**
C20	46		53	46	50	51	40	37	52	47	59	42	52.3	**47.4**
C21	67		76	64	37	70	59	55	62	75	56	63	68.4	**62.4**
C23	67		61	40		44	51	45	42		46	55	55.0	**50.8**
C24	55	39	56	47	50	50	41	39	55	54	53	54	54.3	**49.5**
C25	60	46	61	49	59	55	0	51	56	56	50	60	60.3	**55.0**
C27	43			38	41	39	38	34	36	43	39	47	43.5	39.7
C28	46	47	51	43	48	39	48	45	41	46	46	65	51.9	**47.1**
C29	54	19	38			33	34		36	24	39	31	37.6	**34.6**

Table B.3 – NO_2 Monthly Diffusion Tube Results 2014 East Area

Site ID East, Central or West	NO_2 ($\mu g/m^3$) Bias Correction Applied to the Time Weighted Annual Average													
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual Mean	
													Raw Data	Bias Adjusted *0.91
E01	38	33	53	38		22	35	38	40	37	45	32	41.1	37.8
E02	58	44	39	41		40	38	35	36	50	47	44	47.1	**43.0**
E02-12		53	48	46		46	37	37	21		52	44	46.8	**41.7**
E06	42	40	38	37		36	30	34	35	44	47	44	42.7	38.6
E07-12	78		60		56	52		51	60	64	79	59	68.3	**62.8**
E09			44		36	53		33	37	45	46	40	45.5	**40.7**
E10						41	34	34	40			48	43.1	39.1
E12		47	56	46	43	55	32	41	44	57	50	51	51.2	**45.6**
E14		53	40	42	37	52	31	29	35	49	29	36	48.5	**43.3**
E15-12		52	44	40	41	57	37	32	44	49	50		47.5	**42.3**
E16	45	40	40	41	41	61	43	37	35	47	51	38	47.5	**42.3**
E17	51	47	57		55	68	43	38	56	54	59		58.2	**52.9**
E17-13	37	21	28		21	24	23	20	19	27	32	30	28.2	25.8
E18		31	50			43	41	34	34	46	41	45	44.2	39.7
E21	40	27	29	26	24	36	30	26	25	30	40	28	32.9	29.9
E22	43		41	41	37	53	37						46.1	**41.2**
E23	47		42	39	40	56		41	33	49	40	42	47.0	**41.9**
BH6 Triple	43	58	48	38	45	46	41	45	59	55	43	43	55.3	**49.3**

Appendix C: Supporting Technical Information / Air Quality Monitoring Data QA/QC

The council does not anticipate any major new source of pollution in the area over the next year. However the city is developing and growing at a rate above the national average. Whilst private car use is low in the City Centre there are traffic pressures with new developments at major urban fringe sites most especially within a few kilometres of the Portslade and Rottingdean parts of existing AQMAs. Detailed air quality assessment will need to be carried out for major new development such as Preston Barracks and Toad Valley.

There are no plans to amend the AQMA during 2016. When full year monitoring is available for 2015 and 2016 it may be possible to revoke parts of the existing AQMA in 2017. It is anticipated that the total AQMA acreage would reduce. That said there is likely to be more than two AQMAs targeting zones adjacent to transport corridors and junctions that are priority for compliance and improvement. The 2015 Air Quality Action Plan (AQAP) and associated Community Insight Report and Equalities Impact Assessment can be found on the city councils webpages at https://www.brighton-hove.gov.uk/content/environment/air-quality-and-pollution
The action plan includes details on the results of dispersion modelling and source apportionment and quantifies which streets and transport corridors have the most dwellings at risk of exceeding the EU standard for nitrogen dioxide.

Bias adjustment of raw diffusion tube results utilises two automatic analysers (BH6 and BH10) that have co-located triplicate diffusion tubes. The bias correction factor is verified by the (National Physical Laboratory (NPL) each year. An orthogonal average is taken of two sites with the North Street value preferred for this bus route that is the (Low Emission Zone) LEZ.

Appendix D: Summary of Air Quality Objectives in England

Table 1.1

Pollutant	Air Quality Objective[1]	
	Concentration	**Measured as**
Nitrogen dioxide (NO_2)	200 µg/m^3 not to be exceeded more than 18 times a year	1-hour mean
	40 µg/m^3	Annual mean
Particulate Matter (PM_{10})	50 µg/m^3, not to be exceeded more than 35 times a year	24-hour mean
	40 µg/m^3	Annual mean
Sulphur dioxide (SO_2)	350 µg/m^3, not to be exceeded more than 24 times a year	1-hour mean
	125 µg/m^3, not to be exceeded more than 3 times a year	24-hour mean
	266 µg/m^3, not to be exceeded more than 35 times a year	15-minute mean

[1] The units are in microgrammes of pollutant per cubic metre of air (µg/m^3).

Glossary of Terms

Abbreviation	Description
AQAP	Air Quality Action Plan - A detailed description of measures, outcomes, achievement dates and implementation methods, showing how the LA intends to achieve air quality limit values'
AQMA	Air Quality Management Area – An area where air pollutant concentrations exceed / are likely to exceed the relevant air quality objectives. AQMAs are declared for specific pollutants and objectives
ASR	Air quality Annual Status Report
AURN	Automatic Urban and Rural Network (UK air quality monitoring network)
Defra	Department for Environment, Food and Rural Affairs
DMRB	Design Manual for Roads and Bridges – Air quality screening tool produced by Highways England
FDMS	Filter Dynamics Measurement System
LAQM	Local Air Quality Management
NO_2	Nitrogen Dioxide
NO_x	Nitrogen Oxides
PM_{10}	Airborne particulate matter with an aerodynamic diameter of 10µm (micrometres or microns) or less
$PM_{2.5}$	Airborne particulate matter with an aerodynamic diameter of 2.5µm or less
QA/QC	Quality Assurance and Quality Control
SO_2	Sulphur Dioxide

Used in LAQM Reports	Description
AQ	Air Quality ambient or outdoor
ADMS	Atmospheric Dispersion Model System
AQAP	Air Quality Action Plan statutory requirement where an AQMA

	has been declared
AQMA	Air Quality Management Area declared under the part IV of the Environment Act 1995
AQS	Air Quality Strategy for England
BAM	Bata Attenuation Monitor particulate monitoring method
BHCC	Brighton and Hove City Council unitary authority
BQPA	Bus Quality Partnership Agreements
BREEAM	Building Research Establishment Environment Assessment Methodology
CBTF	DfT's Clean Bus Transport Fund
CEMP	Construction Environment Management Plan
CIL	Community Infrastructure Levy
CRT	Continuous Regenerating Trap for tailpipe mitigation of particulate
CVTF	DfT's Clean Vehicle Transport Fund
DA	Development Areas
DECC	Department for Energy and Climate Change
Defra	Department for Environment Food and Rural Affairs
DfT	Department for Transport
DPF	Diesel Particulate Filter
EC	European Commission
EPR	Environmental Permitting Regulations
Euro Standards	European emissions standards set out for light and heavy vehicles
Flywheel	Flywheel regenerative breaking or KERS

GIS	Geographical Information Systems
HGV	Heavy Goods Vehicles
IPPC	Integrated Pollution Prevention Permits for industry
JAAP	Joint Area Action Plan that includes development area covering Adur and BHCC
JSNA	Joint Strategic Needs Assessment multidisciplinary health report
KERS	Kinetic Energy Recovery System
LA	Local Authority
LAT	Local Action Team
LAQM	Local Air Quality Management
LDF	Local Development Framework
LEP	Local Enterprise Partnership
LES	Low Emission Strategy
LEZ	Low Emission Zone
LSTF	Local Sustainable Transport Fund
LTP4	Local Transport Plan 4
mg/m3	concentration milligrams per cubic meter
NO2	Nitrogen Dioxide
NOx	Oxides of Nitrogen including NO and NO2
NPPF	National Planning Policy Framework
O3	Ozone near ground level
OLEV	Office of Low Emission Vehicles
PAH	Poly Aromatic Hydrocarbons

PEMS	Portable Emission Monitoring System
PM10	Particulate Matter less than ten microns
PM2.5	Particulate Matter less than two and a half microns
PM1	Particulate Matter less than one micron or nano-particulate
ppb	concentration parts per billion
ppm	concentration parts per million
RHI	Renewable Heat Incentive
S106	Section 106 Funding under Town and Country Planning Act 1990
SA	Special Areas
SAQP	The Sussex Air Quality Partnership sometimes referred to as Sussex Air
SCR	Selective Catalytic Reduction NOX tailpipe abatement
SCRT	Selective Catalytic Reduction Technology used in conjunction with CRT
TEA	Triethanolamine in water method for NOx diffusion tubes
TEOM	Tapered Element Oscillating Microbalance particulate monitoring method
TG(09)	LAQM Technical Guidance 2009
TRO	Traffic Regulation Order
USA	Updating Screening Assessment air quality report
µg/m3	Concentration in micrograms per cubic meter

References

A detailed list of references can be found in the 2015 Air Quality Action Plan that is found on the council's webpages at https://www.brighton-hove.gov.uk/content/environment/air-quality-and-pollution/air-quality-management-city