Report to Scrutiny

Item Number:

Contains Confidential or Exempt Information	No

Subject of Report:	**Overview of Air Quality in the Borough**
Meeting:	**Scrutiny Review Panel 3: Air Quality** **19 July 2018**
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Brief:	To consider the information provided on air quality in the borough and make recommendations accordingly.
Recommendations:	The Panel is recommended to: - consider and comment on the information provided on air quality in the borough; - seek feedback from the Panel Members who attended the London Air Quality Network Conference on 3 July 2018; and - make suggestions for further improvements appropriately.

Overview of Air Quality in the Borough

Air pollution in London has attracted increasing public concern in recent years as the severity of its impact on health has been highlighted. Though there are some indications that measures to control pollutant emissions are now having a positive effect, Ealing borough, along with most other London local authorities, experiences an ongoing challenge to the health of its population through exposure to air pollution that, in some places, still exceeds UK and EU standards by a large margin.

This report provides an overview of air quality in the London Borough of Ealing and suggests opportunities for the Panel to build on the work of previous Scrutiny and Review Panels that have also focused on air quality. Most of the background material on air quality presented to Scrutiny Review Panel 4: Transport[1] in 2017 remains current and is therefore reproduced below for the information of Members, with updates at relevant points where these are available.

Main pollutants of concern and their sources

The character of air pollution in London has changed dramatically over the last sixty years. Through a variety of regulatory controls on fuels and emissions, together with many advances in emissions control technologies, large reductions have been achieved in the levels of several pollutants that were previously of concern, such as smoke from coal burning, sulphur dioxide and some other toxic pollutants including benzene and lead. However, alongside these significant achievements in reducing air pollution, *particulate matter* and *nitrogen dioxide* remain at levels where their effects on health and the natural environment require ongoing intervention at national, regional and local levels[2].

The term *particulate matter* incudes a wide range of solid and liquid substances, including material of both human and natural origin, such as transport (diesel-powered road vehicle and train emissions, brake and tyre dust), bonfire smoke, mineral dust, sea salt and pollen. Some particulate pollution arises from chemical reactions occurring in the atmosphere, especially during smog episodes.

Particulate matter is classified by particle size – those smaller than 10 microns (millionths of a metre) are referred to as PM_{10}; $PM_{2.5}$ (also known as *fine* particulate matter) consists of particles smaller than 2.5 microns. PM_{10} and $PM_{2.5}$ represent sizes that can penetrate the human respiratory system, PM_{10} beyond the larynx and $PM_{2.5}$ still deeper into the lungs. Industrial sources have in the past led to severely increased particulate levels in the area of Acton Goods Yard in Horn Lane, but the national Air Quality Objectives for PM_{10} were met in Ealing borough for the third successive year in 2017. Particulates are still responsible for several pollution episodes a year across the London region under certain weather conditions, when High or Very High pollution indices[3] are recorded at roadside locations in the borough.

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[1] Air Quality and Pollution Update, Report to Scrutiny Review Panel 4: Transport, 27 July 2017, available online here

[2] Carbon dioxide and other 'greenhouse gases' are not included as pollutants of concern for the purposes of this report, as they are not associated with direct health impacts and are subject to controls under separate climate change legislation.

[3] See the Appendix to this report for an explanation of the Defra Pollution Index.

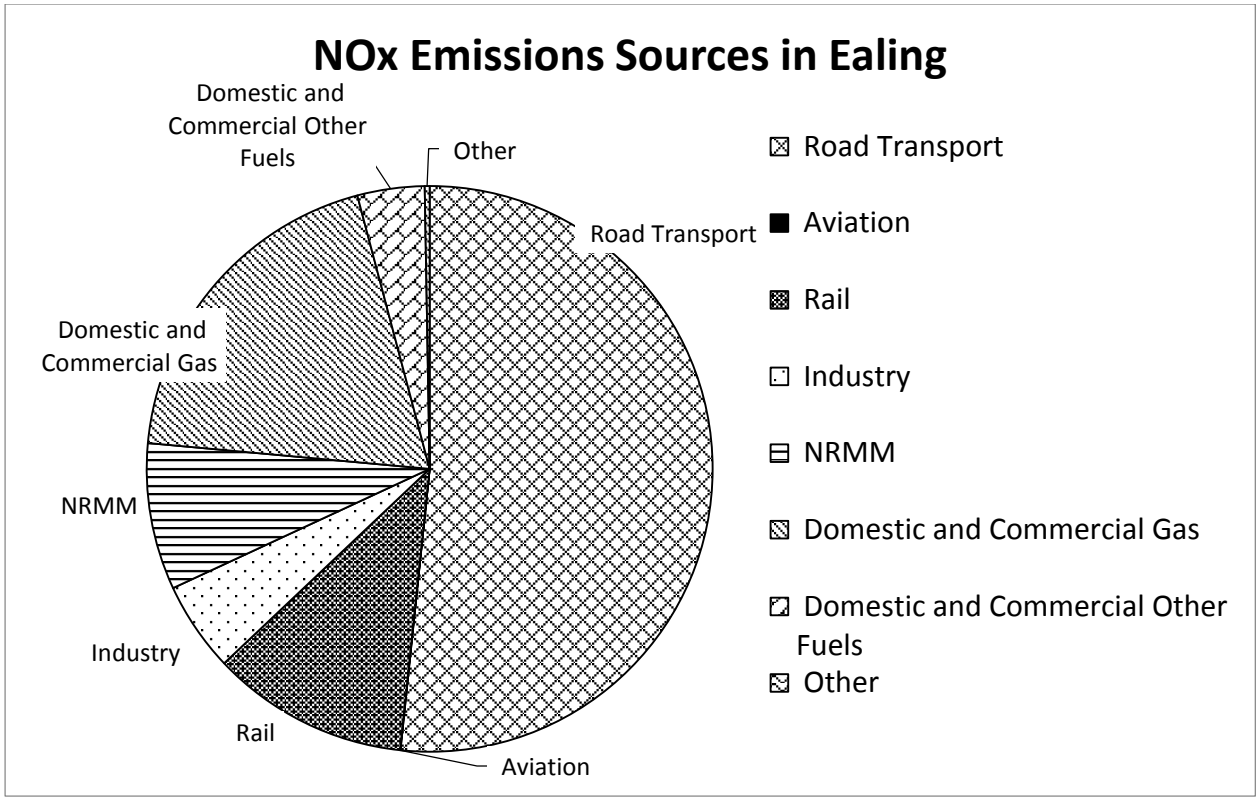
The World Health Organisation (WHO) advises[4] that small particulate pollution has health impacts even at very low concentrations – indeed no threshold has been identified below which no damage to health is observed and therefore the WHO's 2005 guideline limits aim to achieve the lowest concentrations possible. Therefore although formal compliance with both UK PM_{10} Objectives for this pollutant has now been achieved in the borough for the past three years, the known health effects from exposure to even low levels are such that continuing effort to control this pollutant must remain a priority.

Nitrogen dioxide (NO_2) is a respiratory irritant gas that is produced, along with nitric oxide[5] (NO) by most fuel combustion processes, principally from diesel-powered road vehicles and trains, gas boilers and non-road mobile machinery, as well as aircraft and electricity generation. NO_2 also contributes to the formation in the atmosphere of other pollutants such as particulate matter and ozone.

Mainly as a result of the emissions of NO_x from diesel-powered road vehicles, the national and EU air quality standards for nitrogen dioxide are still a long way from being met in many parts of Greater London and in urban areas across the UK. This includes parts of Ealing borough, where reducing nitrogen dioxide pollution remains a major challenge.

The chart below of NOx emissions sources in borough the illustrates that diesel emissions from road vehicles, off-road plant (NRMM) and diesel trains together make up the main source of this pollutant in the borough.

Figure 1. Sources of nitrogen oxides (NO_x) pollution (from the London Atmospheric Emissions Inventory 2013)



[4] http://www.who.int/mediacentre/factsheets/fs313/en/

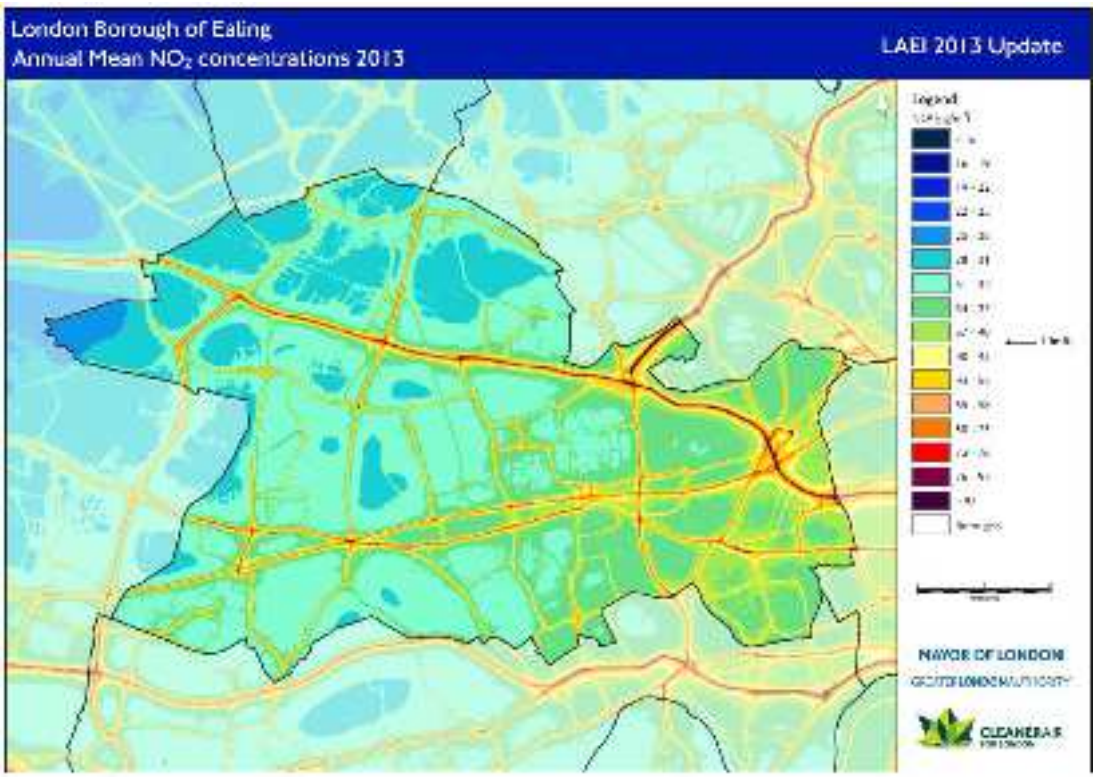
[5] The total concentration of nitrogen oxides (NO_2 and NO) is referred to as NOx.

The borough's main roads, including the A40 (Western Avenue), A406 (North Circular Road), the A4020 (Uxbridge Road) and the roads connecting them, continue to be major sources of pollution from vehicles and result in corridors of increased nitrogen dioxide and, to some extent, particulate concentrations. Consequently Ealing's residents living, walking or cycling along these roads are at risk of exposure to air quality that does not meet the national Air Quality Objectives or EU Limit Values for nitrogen dioxide[6].

Comparison of Ealing borough with other areas of Greater London

Because of the many combined sources of air pollution that exist in a large urban area such as Greater London, Ealing borough shares an increased background (baseline) level or concentration of air pollutants such as nitrogen dioxide and particulate matter with many other parts of Greater London. As illustrated in the map below (based on the latest available inventory of air pollutant emissions in London), background concentrations of nitrogen dioxide increase towards Inner and Central London, so that the east of the borough experiences higher pollutant levels away from roads than do similar locations in the west. The map also shows that increased background concentrations in the east of the borough have the effect of increasing the extent of pollution impacts from the road network, so that locations at a greater distance from the road are also at risk of exceeding the 40 µg m^{-3} annual average Air Quality Objective.

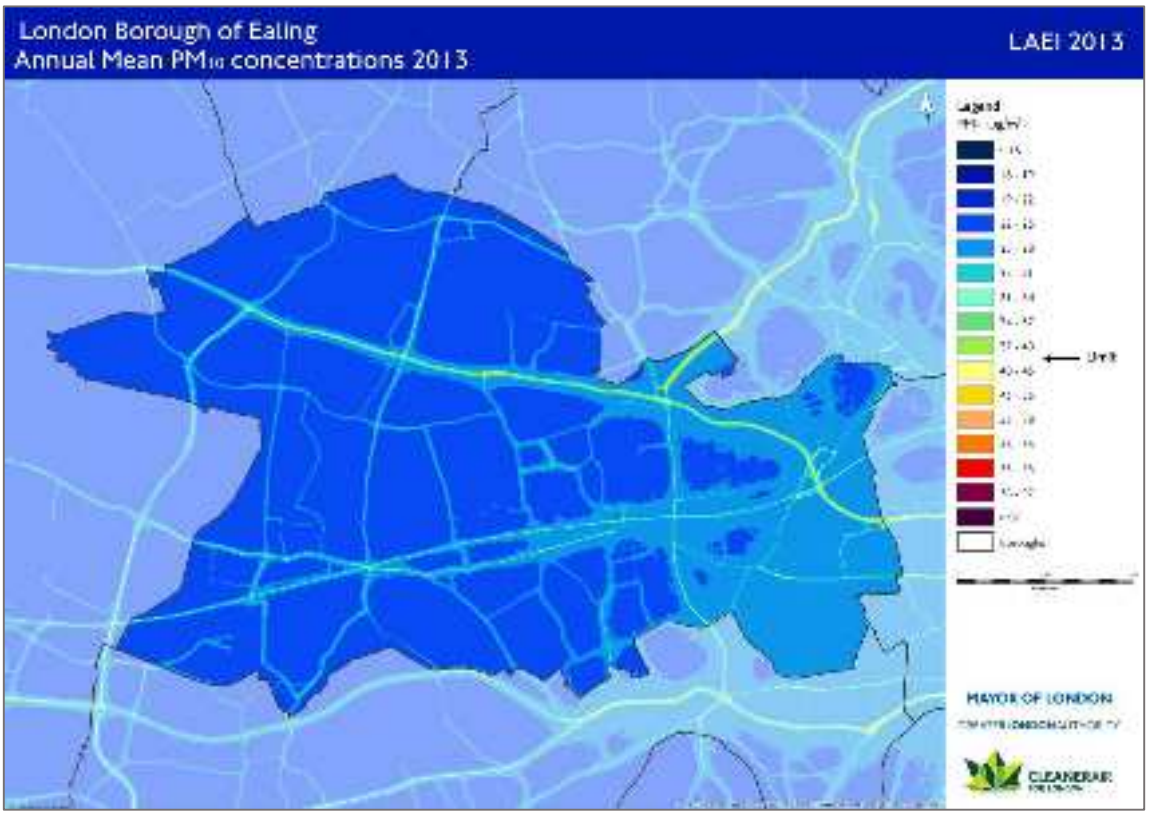
Figure 2. Modelled annual mean nitrogen dioxide concentrations for 2013 (from the *London Atmospheric Emissions Inventory*, Mayor of London/GLA, April 2017)



A similar pattern of variation in roadside and background concentrations can be seen in the map below for PM_{10}.

[6] See the table of Air Quality Objectives and Limit Values in the Appendix.

Figure 3. Modelled annual mean PM_{10} concentrations for 2013 (from the *London Atmospheric Emissions Inventory*, Mayor of London/GLA, April 2017)



Trends in pollutant levels at current locations of poorer air quality[7]

The network of pollution monitors operated by local authorities across London indicates that nitrogen dioxide concentrations are decreasing only slowly in many areas. This is also the case in Ealing borough, where the results of the automatic monitoring of this pollutant in the chart below show that the annual Air Quality Objective concentration for nitrogen dioxide of 40 µg m^{-3} continued to be exceeded at all monitoring stations close to busy roads in 2016 and again in 2017.

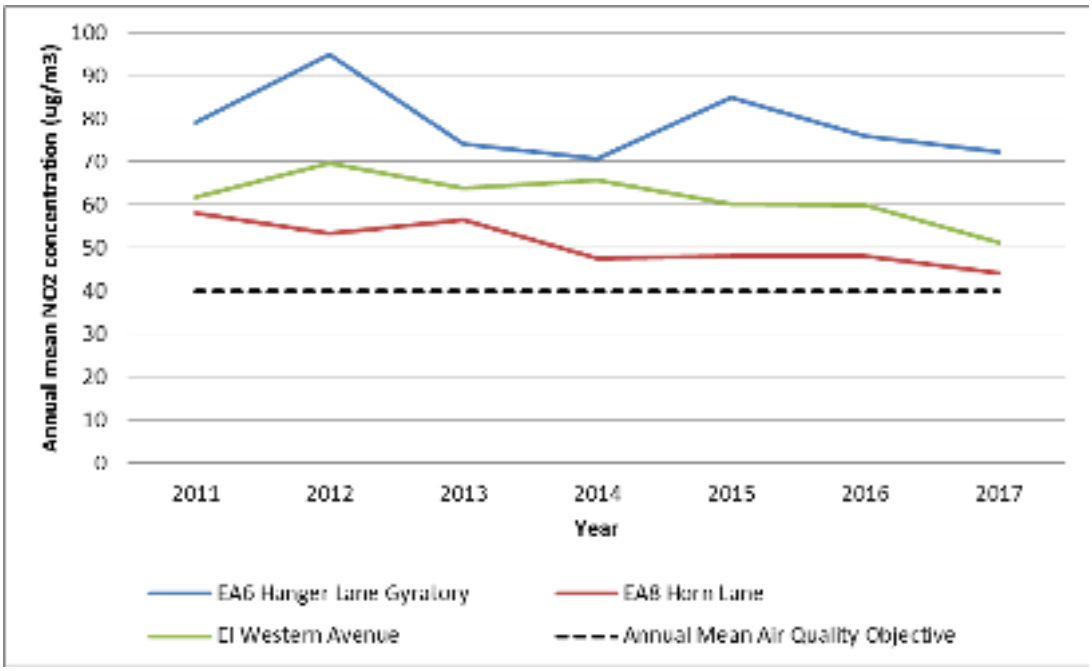
Both the Hanger Lane Gyratory and Western Avenue (Acton) monitoring stations recorded concentrations more than 1.5 times the Air Quality Objective in 2016 and this exceedance continued into 2017 at Hanger Lane. Similar concentrations over 60 µg m^{-3} were measured using the (non-automatic) diffusion tube method at several residential locations close to the A40 in Perivale and Acton and in Spring Bridge Road, Ealing, however the hourly Air Quality Objective for nitrogen dioxide was met for the first time in 2017 at Hanger Lane Gyratory.

The downward trend in nitrogen dioxide concentrations seen in 2017 is encouraging and it is possible that this is an early indication that London-wide measures to reduce emissions are beginning to have effect, however some caution is appropriate in that year-to-year variations can be strongly influenced by weather conditions. A sustained

[7] For further detail of levels across the borough, please refer to the table of monitoring results given in the Appendix.

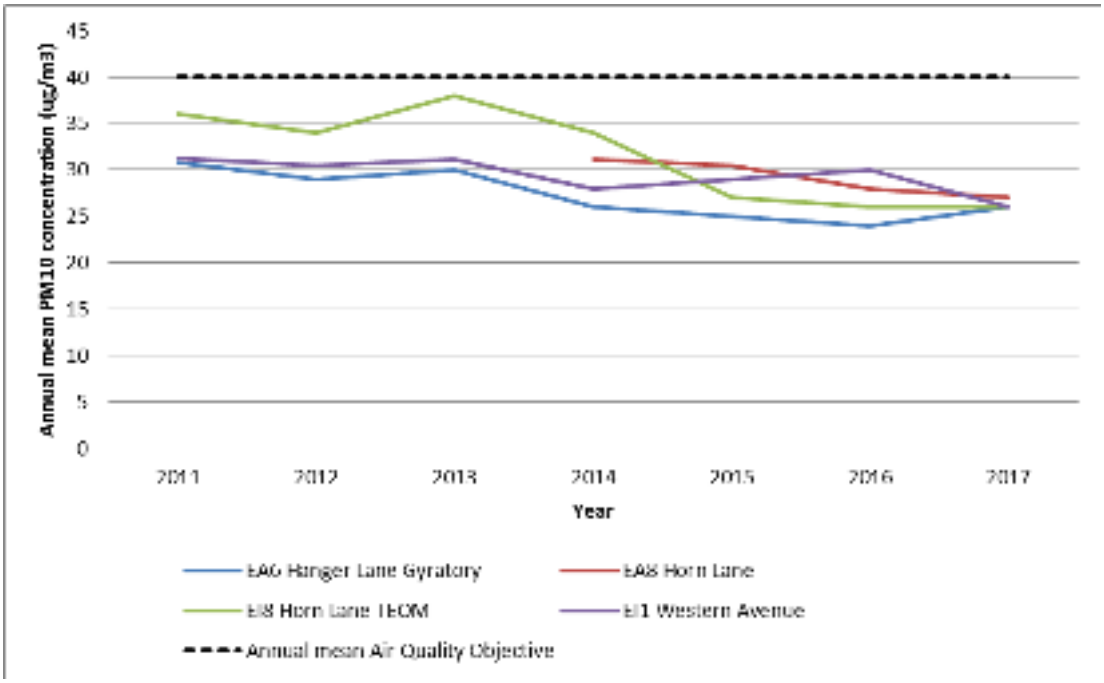
decrease over the longer term will be required to demonstrate that clear progress is being made towards improvement.

Figure 4. Trends in annual mean NO_2 concentrations at automatic monitoring stations



As noted earlier, PM_{10} particulate pollution levels have complied with the Air Quality Objectives for a sustained period, with a reduction in concentrations (especially at the Horn Lane monitoring station) during the period from 2011 to 2017. From the chart below, however, there appears to be some evidence recently of a levelling-off, suggesting that further substantial interventions would be needed to resume a downward trend.

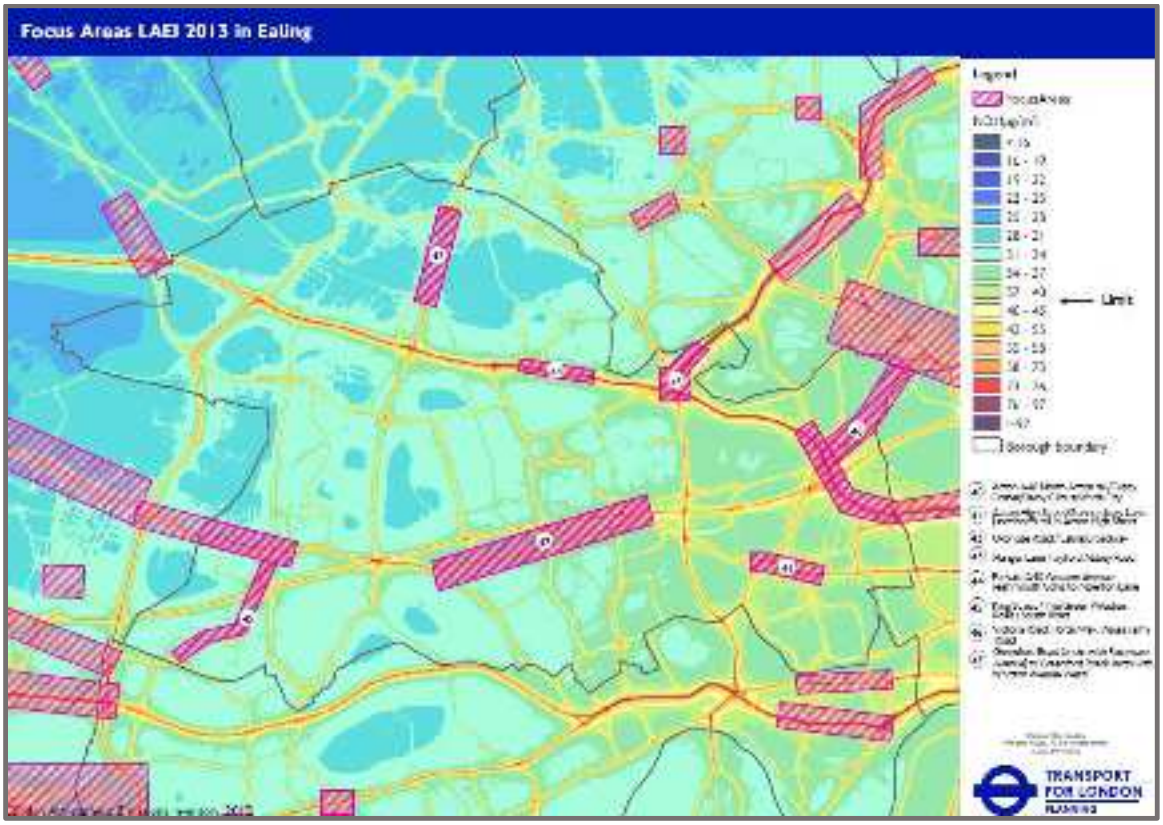
Figure 5. Trends in annual mean PM_{10} concentrations at automatic monitoring stations



The GLA's Air Quality Focus Areas

To assist London local authorities in prioritising their actions to improve air quality, the GLA, in consultation with borough air quality officers, has identified 187 Air Quality Focus Areas across Greater London.

Figure 6. Map of nitrogen dioxide annual mean concentrations in the London Borough of Ealing, with the GLA Air Quality Focus Area (revised December 2016)



The Focus Areas are locations that not only exceed the EU annual mean limit value for nitrogen dioxide but are also where there is significant human exposure, for example in residential areas. It is not intended to be an exhaustive list of London's hotspot locations, but indicates where the GLA believes the problem to be.

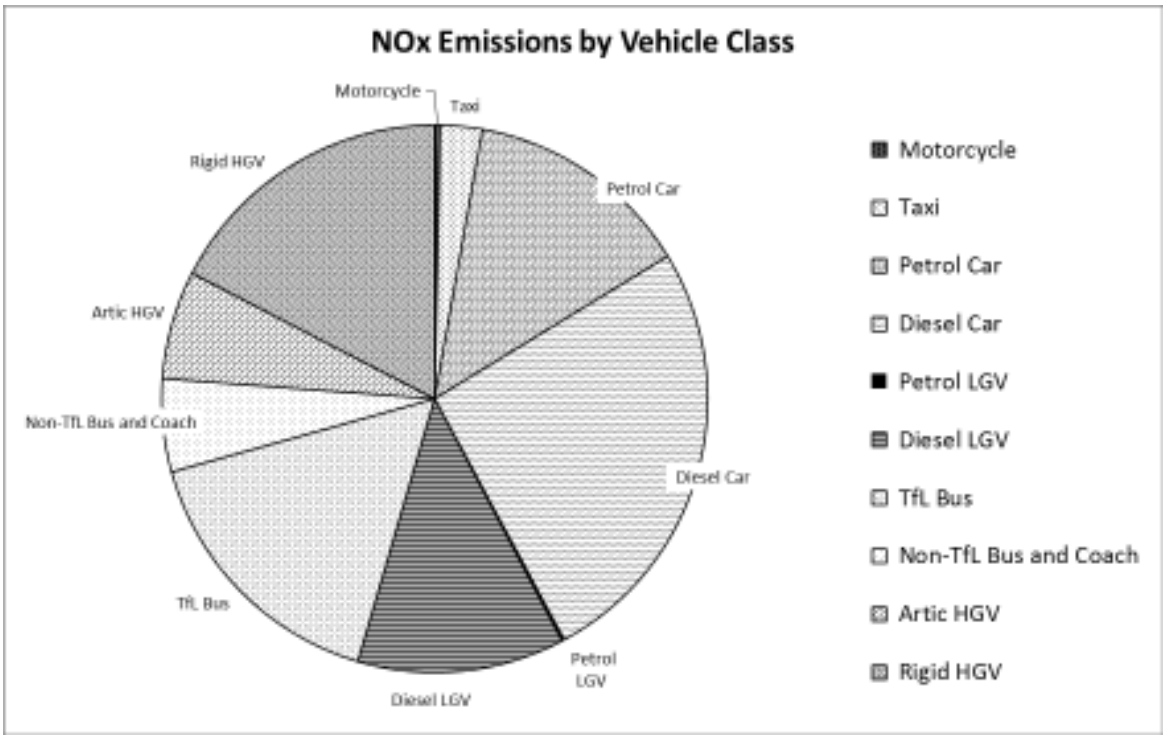
The council needs to review how it can give effect to the priority indicated for these areas.

Actions to reduce pollutant emissions and exposure to air pollution

Nitrogen dioxide pollution remains the major challenge for a large part of Ealing borough, especially in the east of the borough, in areas close to major roads and in locations where traffic is often congested or there are large numbers of bus movements or 'street canyon' effects.

The chart below shows the major contribution to road vehicle emissions from the various classes of diesel vehicles in the borough.

Figure 7. Sources of nitrogen oxides by vehicle class (from the London Atmospheric Emissions Inventory 2013)



Taking steps to move away from diesel is key to the improvement of air quality in London and in Ealing borough, where diesel-powered cars and light goods vehicles make a significant contribution to emissions alongside buses and HGVs. The transition from diesel will require the take-up of a range of alternative fuels and vehicle technologies as these become available. The table below from a recent *Policy Exchange* report[8] summarises the currently available technology options for cleaning up road transport.

	Time to deployment	Decarbonisation potential	Air quality potential	Consumer cost	Infrastructure requirements
Conventional vehicles (inc. non plug in hybrids)	Fast	Medium	Medium	Low	Low
Battery electric vehicles & plug in hybrids	Medium	High	High	Medium	High
Hydrogen fuel cell electric vehicles	Slow	High	High	High	High
Biofuels	Medium	Low	Low	Low	Low
Gaseous fuels	Fast	Low	High	Low	Low
Modal shift	Varies	Medium	High	Low	Varies
Mobility as a service (e.g. car sharing)	Fast	Medium	Medium	Low	Low
Autonomous vehicles	Slow	Uncertain	Uncertain	High	High

[8] *Driving Down Emissions* How to clean up road transport?, Policy Exchange, London 2017

The London Borough of Ealing's draft Air Quality Action Plan 2018-2022

In 2017 the council held a public consultation on a draft Air Quality Action Plan to replace the original Action Plan issued in 2003. This followed the declaration of the whole of the bororugh as an Air Quality Management Area for nitrogen dioxide and PM_{10} in 2000. The actions proposed received broad support from the public and a final draft was prepared in early 2018 for internal sign-off and submission to the GLA for approval. The list of actions contained in the draft Action Plan is reproduced below at the end of this section. (**Note**: Officers have been advised that the GLA is preparing a revised matrix of actions that London boroughs will need to incorporate into any revision of their action plans. At the time of writing – 7 July 2018 – the new statutory guidance is expected to be issued later in July 2018 and it will be necessary for some further amendments to be made to the draft action plan for Ealing borough before final publication).

In 2017, Scrutiny Review Panel 4: Transport looked in detail at the transport measures that the council is taking in relation to air quality improvement. These included electric vehicles and charging points, buses, walking, cycling, driving and school travel. While there will be the need to consider further some transport-related actions, it is recommended that the Panel focusses its attention on specific topics that have either not previously been considered in detail or where there have been recent developments that should be reviewed. Some of these are outlined below.

- **Air quality audits for schools**

Two primary schools in the borough, Christ the Saviour Church of England Primary School, Ealing and Ark Priory Primary Academy, Acton, were successful in applying to participate in the Mayor of London's Schools Air Quality Audit programme. The schools were among 50 London primary schools located in areas exceeding the annual Air Quality Objective for nitrogen dioxide.

The aim of the audits was to identify the most effective local solutions to improve air quality and reduce exposure by understanding the travel behaviour of parents/carers and children, and assessing the quality of walking routes. Examples of solutions suggested by the GLA include running 'no idling' campaigns around the schools, installing green infrastructure *e.g.* trees to shield walking routes and playgrouds or more significant changes to road layouts.

By engaging with the borough and school community, the audits are also intended to increase awareness about local air pollution. The boroughs will be able to work with schools to implement recommendations from the audits and to access the funding the Mayor has provided to boroughs to support local improvements to the transport network and tackle pollution in line with his Healthy Streets Vision over the next five years. At the time of writing (7 July 2018) officers are awaiting guidance on the Mayor's funding that will be made available to schools to support actions recommended in the audit reports.

The audits at the two schools in Ealing borough were carried out in December 2017 and the Mayor published the final audit reports in May 2018, which are available online at https://www.london.gov.uk/what-we-do/environment/pollution-and-air-quality/mayors-school-air-quality-audit-programme. The Mayor's programme supported audits for a maximum of two schools per borough, which left a number of eligible schools in Ealing

borough remaining to be audited. Funding was identified to support an audit at the new Ark Byron Primary Academy in Acton and the draft audit report is expected to be available shortly. It is proposed to roll-out further audits supported by the council at Hambrough Primary School, Southall and Oldfield Primary School, Greenford.

- **Pollutant emissions from construction and demolition**

Construction and demolition activities contribute significantly to air pollutant emissions in the borough, not only through the generation of visible dust and road soiling, but particularly the exhaust emissions from (mainly diesel-powered) mobile machinery and plant (NRMM).

Topics that could be addressed by the Panel include:

Sources of emissions from construction and demolition, including Non-Road Mobile Machinery (cranes, excavators, generators *etc*.)

Regulatory control of NRMM emissions, for example, through planning conditions, registration of plant, retrofitting of emissions control equipment.

Look at what powers the Council has and how it works with agencies exercising powers.

Opportunities for joint action by neighbouring boroughs, for example, though the funding of a shared construction emissions monitoring and enforcement officer.

- **Reducing emissions from the Council's and contractors' fleets**

In promoting cleaner transport choices, the council needs to be leading by example and ensuring that emissions from its fleet of vehicles and those of its contractors are minimised.

Topics that might be investigated under this heading include:

Current procurement practice and uptake of low emission vehicles within the fleets.

Alternative fuels and refuelling infrastructure requirements. Electric vehicles and charging point provision has received attention from previous Panels, however there are other cleaner fuel options such as hydrogen that merit further investigation.

The Panel could also address the need to encourage more commercial use of ultra-low emission vehicles and what is needed to incentivise their uptake.

- **Idling**

Topics that might be investigated under this heading include:

Current programmes and projects to raise awareness, discourage idling, including fixed and electronic road signs at idling hotspots, school travel programmes

Enforcement options (penalty charge notices, fixed penalty notices) and progress with implementation

Learning from best practice elsewhere

Air Quality Actions

(from the London Borough of Ealing's draft Air Quality Action Plan 2018-2022)

Action category	Action ID	Action description	Responsibility	Cost (to Borough)	Expected emissions/ concentrations benefit	Timescale for implementation	How implementation will be monitored	Further information
Emissions from developments and buildings	1	Ensuring emissions from construction are minimised	Development Management in association with Regulatory Services	Very Low to Low	Low	Ongoing	Log of applications with conditions for construction to be kept	These measures are already being implemented but are more of an enforcement issue. LBE will investigate the possibility of employing officers across West London for enforcement, particularly for NRMM. Funding opportunities to be investigated. London Low Emission Construction Partnership could be engaged with to review work in other boroughs. Opportunities for spot checks for planning conditions will also be investigated. CHP and biomass policies important with district networks a priority.
Emissions from developments and buildings	2	Ensuring enforcement of Non-Road Mobile Machinery (NRMM) air quality policies	Development Management in association with Regulatory Services	Very Low to Low	Low	Ongoing	Log of applications with NRMM conditions to be kept	
Emissions from developments and buildings	3	Enforcing CHP and biomass air quality policies. Ensure smaller developments use ultra-low NOx Boilers.	Development Management in association with Regulatory Services	Very Low to Low	Low	Ongoing	Log of applications where CHP and biomass conditions apply to be kept	
Emissions from developments and buildings	4	Enforcing Air Quality Neutral policies	Development Management in association with Regulatory Services	Very Low to Low	Low	Ongoing	Log of applications where AQ Neutral conditions applied, and benchmarks achieved	
Emissions from developments and buildings	5	Ensuring adequate, appropriate, and well located green space and infrastructure is included in new developments	Development Management in association with Regulatory Services	Very Low to Low	Low	Ongoing	Area of green space incorporated into new developments	Creating new green space in Ealing is challenging and larger developments will implement on site green space. Chapter in Core Strategy on Green Space. Consultation acknowledged green space popular.

Action category	Action ID	Action description	Responsibility	Cost (to Borough)	Expected emissions/ concentrations benefit	Timescale for implementation	How implementation will be monitored	Further information
Emissions from developments and buildings	6	Ensuring that Smoke Control Zones are appropriately identified and fully promoted and enforced.	Regulatory Services	Very Low	Low	Ongoing	n/a	This does not appear to be a large issue in Ealing. Smoke Control Areas will remain, but not actively promoted. See above on CHP/ biomass.
Emissions from developments and buildings	6a	Full enclosure for waste sites which pose a risk of fugitive particulate emissions	Regulatory Services in partnership with the Environment Agency	Very Low	Low across the borough but potentially medium in locations near site	Ongoing	In a qualitative way	Work with the Environment Agency and operators to ensure that waste sites are fully enclosed where there may be a risk of fugitive particulate emissions.
Emissions from developments and buildings	6b	Investigate the potential for larger development areas to proactively assess air quality impacts cumulatively	Regulatory Services in association with Development Management	Low	Low in short term, but potentially medium to high in longer term	Ongoing	Sites where cumulative assessment has been successfully undertaken	Old Oak Common and Park Royal in particular for ensuring air quality is assessed across the site. A Low Emission Strategy (LES) in this case will be a useful tool to ensure air quality has thorough consideration. Southall Gas Works site will also have its own LES.
Emissions from developments and buildings	7	Promoting and delivering energy efficiency retrofitting projects in workplaces and homes using the GLA RE:NEW and RE:FIT programmes to replace old boilers/top-up lost insulation in combination with other energy conservation measures.	Development Management in association with Sustainability officers	Very Low	Low	Already being implemented	Log of number of boiler replacements/ other energy efficiency measures to be kept.	Currently a 2 year programme being implemented. RE:NEW currently being revised. RE:FIT not very applicable to Ealing because of projects targeted.
Public health and	8	Ensure that Directors of Public Health	Public Health	None	n/a	Complete	n/a	DPH already briefed by way of a briefing note and

Action category	Action ID	Action description	Responsibility	Cost (to Borough)	Expected emissions/ concentrations benefit	Timescale for implementation	How implementation will be monitored	Further information
awareness raising		(DsPH) have been fully briefed on the scale of the problem in your local authority area; what is being done, and what is needed. A briefing should be provided.						works closely with Regulatory Services via PH consultant
Public health and awareness raising	9	Public Health Teams should be supporting engagement with local stakeholders (businesses, schools, community groups and healthcare providers). They should be asked for their support via the DsPH when projects are being developed.	Public Health	Very Low to Low	n/a	Ongoing		Working with voluntary sector is very active and likely to link in to hospitals and pharmacies etc. Provision of support to others re: work on engagement.
Public health and awareness raising	10	Directors of Public Health to have responsibility for ensuring their Joint Strategic Needs Assessment (JSNA) has up to date information on air quality impacts on the population	Public Health	Very Low	n/a	To be updated in next 12-18 months	That the JSNA has been updated	Ealing has incorporated air quality as a key theme in their JSNA, currently under discussion with GLA as to updating the air quality chapter which was written in 2012.
Public health and awareness raising	11	Strengthening co-ordination with Public Health by ensuring that at least one Consultant-grade public health specialist within the borough has air quality responsibilities	Public Health	None	n/a	Complete	n/a	Health protection role already embedded in Public Health

Action category	Action ID	Action description	Responsibility	Cost (to Borough)	Expected emissions/ concentrations benefit	Timescale for implementation	How implementation will be monitored	Further information
		outlined in their job profile						
Public health and awareness raising	12	Director of Public Health to sign off Statutory Annual Status Reports and all new Air Quality Action Plans.	Public Health	None	n/a	As and when ASRs and AQAPs are completed	n/a	
Public health and awareness raising	13	Ensure that the Head of Transport has been fully briefed on the Public Health duties and the fact that all directors (not just Director of Public Health) are responsible for delivering them, as well as on air quality opportunities and risks related to transport in the borough. Provide a briefing which can be disseminated amongst the Transport team.	Public Health	None	n/a	Complete	n/a	There is a very active obesity group which works well with transport colleagues, particularly in relation to active travel. PHE briefing already done.
Public health and awareness raising	14	Engagement with organisations	Public Health, Transport and Development Management	Low to Medium	Low	Short term	Numbers of business Travel Plans implemented	Transport for London Business Engagement Team offer advice on sustainable travel options for organisations. Travel Plans are also often requested under s106 agreements, with WestTrans undertaking the monitoring function.
Public health and	15	Promotion of availability of AirTEXT and other services	Regulatory Services and Public Health	Very Low	Low	Ongoing	Number of subscribers	AirTEXT is a tool that provides forecasts of air quality. LAQN also

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awareness raising		and online tools to minimise personal exposure						provides forecasts and live pollution information.
Public health and awareness raising	16	Encourage schools to join the TfL STARS accredited travel planning programme by providing information on the benefits to schools and supporting the implementation of such a programme	Public Health, Transport and Development Management and Schools Service	Very Low to Medium (depending on level of implementation)	Low to Medium (depending on level of implementation)	Ongoing	Number of schools in Ealing which are STARS accredited	This is already being implemented and planning conditions also require STARS and promotion of sustainable transport measures
Public health and awareness raising	17	Air quality at schools	Public Health, Transport and Regulatory Services, Schools Service	Low to Medium	Low	Ongoing	Number of schools in Ealing with Travel Plans	Every school in the borough has a travel plan. These need to be kept active. Potential funding from Mayors Air Quality Fund. Awareness of exposure at schools (i.e. siting of schools away from busy roads). Selected schools in Ealing being audited by the Mayor.
Delivery servicing and freight	18	Update local authority procurement policies to include a requirement for suppliers with large fleets to have attained bronze Fleet Operator Recognition Scheme (FORS) accreditation	Procurement/ WLA on behalf of WestTrans(already doing this)	Very Low	Low	Minimum standard of bronze applied to relevant new contracts	Number of those which have applied	Procurement to assess costs to suppliers and whether some are disproportionately penalised by implementation
Delivery servicing and freight	19	Update Procurement policies to ensure sustainable logistical measures are implemented (and include requirements for preferentially	Procurement	Very Low	Low	Already undertaken in some contracts. Investigation as to whether this can be more	n/a	Already done in waste contract. The big issue is in reducing trip distance (and hence emissions).

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		scoring bidders based on their sustainability criteria)				widespread in next 12 months		
Delivery servicing and freight	20	Re-organisation of freight to support consolidation (or micro-consolidation) of deliveries, by setting up or participating in new logistics facilities, and/or requiring that council suppliers participate in these	Transport, Regeneration and West Trans	Medium to High	Low	This is already underway in Ealing Broadway but could be expanded to other areas of Ealing. Feasibility work for further freight consolidation will be undertaken in the next 24 months.	If scheme is expanded.	This is already underway in Ealing Broadway funded in part by Mayors Air Quality Fund with BID paying costs. Also MAQF funding similar scheme in Park Royal.
Delivery servicing and freight	21	Virtual Loading Bays and priority loading for ultra-low emission delivery vehicles	Parking Services, Regeneration and Transport	Very Low	Low	Potential for implementation in the timeframe of this document	n/a	Parking Services have looked into this. Not feasible currently, but may be in the time frame of this document.
Borough fleet actions	22	Join the Fleet Operator Recognition Scheme (FORS) for the borough's own fleet and obtain Gold accreditation.	WestTrans	Very Low to Medium	Low	2017	If Ealing Fleet joins FORS and obtains Gold accreditation	Ealing doesn't directly operate enough fleet vehicles to qualify for FORS but WestTrans has secured FORS Champion status for LBE as a recognition of the procurement practices – including FORS accreditation requirements for any procured freight/fleet function
Borough fleet actions	23	Increasing the number of hydrogen, electric, hybrid, bio-methane and cleaner vehicles in the boroughs' fleet	Procurement, and also Development Management and Regulatory Services	Unknown	Low because borough fleet is small	Medium term	n/a	Measure currently under discussion regarding the feasibility

Action category	Action ID	Action description	Responsibility	Cost (to Borough)	Expected emissions/ concentrations benefit	Timescale for implementation	How implementation will be monitored	Further information
Borough fleet actions	24	Accelerate uptake of new Euro VI vehicles in borough fleet	Procurement	Unknown	Low because borough fleet is small	Medium term	n/a	Measure currently under discussion regarding the feasibility
Borough fleet actions	25	Smarter Driver Training for drivers of vehicles in Borough Own Fleet i.e. through training of fuel efficient driving and providing regular re-training of staff	Transport in partnership with Regulatory Services	Low	Low	Try to obtain funding in 2017	Number of staff trained in Eco driving	This was undertaken 2 years ago. Depending on funding being available, this will be re-run.
Localised solutions	26	Green Infrastructure	Development Management and Regeneration	Very Low	Low	Ongoing	n/a	Planning policies encourage green roofs, green walls, Sustainable Urban Drainage Systems etc. Defra Air Quality Grant provided improvements for Horn Lane which includes green landscaping.
Localised solutions	27	Low Emission Neighbourhoods (LENs)	Transport in partnership with Regulatory Services and Regeneration	High (but funding may be available)	Low to Medium	Try to obtain funding in 2017	Number of Low Emission neighbourhoods implemented in Ealing	Ealing has applied for funding in the past but already implements measures which would be part of LENs.
Cleaner transport	28	Discouraging unnecessary idling (e.g. through anti-idling campaigns or enforcement activity)	Transport and street enforcement with Regulatory Services	Low to Medium (depending on staff time for enforcement)	Low	2017 to look at feasibility of using street enforcement teams to provide information (not fixed penalty notices)	Public awareness of idling	Signage already in place in Horn Lane, Acton, with more to be provided at other idling hotspots soon. Future signage may include health messages. Penalty Charge Notices (PCN) under Traffic Management Act 2004 being looked into for other locations in the borough.
Cleaner transport	29	Speed control measures e.g. lowering the legal speed limit to 20mph	Transport	Medium	Low to Medium (note conflicting evidence re: 20mph limit	Unknown	Lengths of road in the Borough which are 20 mph.	20 mph zones already introduced in key locations across the borough (due to road safety concerns) and

Action category	Action ID	Action description	Responsibility	Cost (to Borough)	Expected emissions/ concentrations benefit	Timescale for implementation	How implementation will be monitored	Further information
		in built up residential areas			effect on air quality)			an aspiration to increase this.
Cleaner transport	30	Increasing the proportion of electric and ultra-low emission vehicles in Car Clubs	Transport/ Parking	Very Low to Low	Low	2017	Number of EV car club cars in the borough	WestTrans is already working on increasing EV fleet within car clubs.
Cleaner transport	30a	Increase the introduction and use of Car Clubs across the borough	Parking and Transport	Low	Low	Ongoing	Number of new car club cars/bays and no. members	Increase the Car club cars/bays, members and trial different models (as per the draft WestTrans Car Club Strategy)
Cleaner transport	31	Very Important Pedestrian Days (e.g. no vehicles on certain roads on a Sunday) and similar initiatives	Transport	Low	Low	Ongoing	Number of play streets registered.	Play streets programmes in 25 different areas of the Borough.
Cleaner transport	32	Free or discounted parking charges at existing parking meters for zero emission cars	Parking Services	Unknown	Low	n/a at present	n/a	Measure currently under discussion regarding the feasibility.
Cleaner transport	33	Free or discounted residential parking permits for zero emission cars	Parking Services	Unknown	Low	n/a at present	n/a	Measure currently under discussion regarding the feasibility
Cleaner transport	34	Surcharge on diesel vehicles below Euro 6 standards for Resident and Controlled Parking Zone permits	Parking Services	Unknown	Low	n/a at present	n/a	Measure currently under discussion regarding the feasibility
Cleaner transport	35	Installation of residential electric charge points including within developments	Planning and Transport, Highways and Parking	Low to High (OLEV funding for 75%, 25% and officer time can come from LIP). Up to £25k per charge point +	Low to Medium depending on uptake	Short to medium term	Number of EV charge points installed in residential areas	Mainly installed as part of new developments and Ealing currently looking at signing up a provider. Difficulty is in designating parking for EVs. Strategy for EV Charge points in Ealing in next 12 months.

Action category	Action ID	Action description	Responsibility	Cost (to Borough)	Expected emissions/ concentrations benefit	Timescale for implementation	How implementation will be monitored	Further information
				electricity costs, but private funding may be an option				
Cleaner transport	36	Installation of rapid chargers to help enable the take up of electric taxis, cabs and commercial vehicles (in partnership with TfL and/or OLEV)	Transport, Highways and Parking	High £35k per charge point + electricity costs, each	Low to Medium depending on uptake	Short to medium	Number of rapid chargers installed for commercial vehicles	
Cleaner transport	37	Reprioritisation of road space; reducing parking at some destinations and or restricting parking on congested high streets and A roads to improve bus journey times, cycling experience, and reduce emissions caused by congested traffic	Transport, Highways and Parking	Medium to High	Low to Medium	Ongoing	Number of relevant major schemes implemented	Often a balance between bus priority and cycling.
Cleaner transport	38	Provision of infrastructure to support walking and cycling	Transport, Highways and Parking	Low to High	Low to Medium depending on level of implementation	Ongoing	Walking mode share (as per target in LIP) Cycling mode share (as per target in LIP)	LIP encourages walking and cycling at its core and in particular has very strong policies and measures for encouraging cycling. Targets exceeded in both walking and cycling mode.
Air Quality Focus Areas	39	Investigate feasibility of tightening planning policy for Air Quality Focus Areas	Development Management	Very Low	Low to Medium depending on level of implementation	Feasibility of tightening planning policy to be undertaken in next 12 months	Outcomes of feasibility work in next 12 months	Consider mechanisms by which air quality could have additional weight in Focus Areas

Action category	Action ID	Action description	Responsibility	Cost (to Borough)	Expected emissions/ concentrations benefit	Timescale for implementation	How implementation will be monitored	Further information
Air Quality Focus Areas	40	Investigate feasibility of implementing a transport checklist of measures for each Air Quality Focus Area	Transport in partnership with Westrans	Very Low to Low	Low to Medium depending on level of implementation	Feasibility of tightening planning policy to be undertaken in next 12 months	Outcomes of feasibility work in next 12 months	Checklist to include traffic management measures, as well as active travel initiatives. This could be implemented across West London.
Regional integration	41	Explore all opportunities for regional working to secure air quality improvements	Regulatory Services, WestTrans	Very Low	n/a	Ongoing	Not quantifiable	Will build on current regional working to ensure that pollution sources such as roads that traverse more than one borough are effectively mitigated.
Reducing exposure	42	Explore all opportunities to reduce exposure for residents of and visitors to Ealing.	Public Health, Westrans and Regulatory Services	Low	None, but reduces exposure	Ongoing	n/a	This is likely to be largely in advertising alternative walking and cycling routes (away from major roads), encouraging active school routes away from busy roads and through routing of walking buses etc.
Air Quality Monitoring	43	Explore all opportunities to increase monitoring in the borough where this would provide useful evidence for implementation of AQAP measures.	Regulatory Services	Unknown	None, but allows for impacts of Action Plan and potentially large scale developments to be monitored	Ongoing	Numbers of monitoring sites	Section 106 in particular to be explored in terms of monitoring large scale development sites. Monitoring sites should where possible be at relevant locations, target Focus Areas and be sufficient to allow for assessment of AQMA boundary in 2020.

APPENDIX

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

The Defra Air Pollution Index[9]

Band	Index	Ozone	Nitrogen Dioxide	Sulphur Dioxide	$PM_{2.5}$ Particles	PM_{10} Particles
		Running 8 hourly mean	Hourly mean	15 minute mean	24 hour mean	24 hour mean
		$\mu g\ m^{-3}$	$\mu g\ m^{-3}$	$\mu g\ m^{-3}$	$\mu g\ m^{-3}$	$\mu g\ m^{-3}$
Low						
	1	**0-33**	**0-67**	**0-88**	**0-11**	**0-16**
	2	**34-66**	**68-134**	**89-177**	**12-23**	**17-33**
	3	**67-100**	**135-200**	**178-266**	**24-35**	**34-50**
Moderate						
	4	**101-120**	**201-267**	**267-354**	**36-41**	**51-58**
	5	**121-140**	**268-334**	**355-443**	**42-47**	**59-66**
	6	**141-160**	**335-400**	**444-532**	**48-53**	**67-75**
High						
	7	**161-187**	**401-467**	**533-710**	**54-58**	**76-83**
	8	**188-213**	**468-534**	**711-887**	**59-64**	**84-91**
	9	**214-240**	**535-600**	**888-1064**	**65-70**	**92-100**
Very High						
	10	**241 or more**	**601 or more**	**1065 or more**	**71 or more**	**101 or more**

Pollution concentrations recorded by the London Air Quality Network's analysers (including Ealing borough's four automatic monitoring stations) are classified according to Defra's Air Pollution Index system. This classes levels into bands from 'low' to 'very high'. Each band is subdivided into three to produce an Air Pollution Index, from 1 to 10, 1 being 'low', 10 being 'very high'. Measurements are rounded to the nearest whole number. The concentrations are classified according to the table above. Note that different pollutants have different concentrations and averaging periods, related to the estimated health effects of each.

[9] adapted from a table on the London Air Quality Network website at https://www.londonair.org.uk/london/asp/airpollutionindex.asp

Results from the London Borough of Ealing's nitrogen dioxide monitoring network

Table 1 Nitrogen Dioxide Monitoring Sites for 2017

Site ID (2017)	Site Name	Grid Reference		Site Type	Distance from monitoring site to relevant exposure (m)	Distance to kerb of nearest road (N/A if not applicable) (m)
		X	Y			
EA01	2 Horsenden Lane South, Greenford, UB6 8AB	516368	182978	Roadside	0	5
EA02	1 Kirn Road, West Ealing, W13 0UB	516699	180509	Roadside	0	2
EA03	Brent Lodge Park, Church Road, Hanwell, W7 3BP	514740	180643	Background	0	30
EA04	74a Greenford Avenue, Hanwell, W7 3QS	515451	180894	Roadside	0	5
EA05	6 Boston Gardens, Boston Road, Hanwell, W7 2AN	516277	178882	Roadside	0	10
EA06	200 Uxbridge Road, Hanwell, W7 3TB	515180	180111	Roadside	0	3.3
EA07	2 St Marys Avenue South, Southall, UB2 4LS	513468	178553	Roadside	0	12
EA08	55 King Street, Southall, UB2 4DQ	512341	179186	Roadside	0	3.3
EA09	18 Western Road, Southall, UB2 5DU	512181	179219	Roadside	0	7.5
EA10	150 Brent Road, Southall, UB2 5LD	511170	179251	Roadside	0	7.7
EA11	2 Merrick Road, Southall, UB2 4AU	512657	179712	Roadside	0	12
EA12	Hambrough Primary School, South Road, Southall, UB1 1SF	512673	180069	Roadside	0	10
EA13	11 The Broadway, Southall, UB1 3PX	512768	180400	Roadside	0	4
EA14	25 Lady Margaret Road, Southall, UB1 2RA	512812	180516	Roadside	0	6.3
EA15	213 Church Road, Northolt, UB5 5BE	512442	183769	Roadside	0	12.4
EA16	31 Mandeville Road, Northolt, UB5 5HF	513056	184241	Roadside	0	9
EA17	126 Petts Hill, Northolt, UB5 4NW	513794	185348	Roadside	0	9
EA18	1504 Greenford Road, Greenford, UB6 0HR	515402	185313	Roadside	0	5.3
EA19	914 Greenford Road, Greenford, UB6 8QN	514985	183770	Roadside	0	3.3
EA20	6 Karoline Gardens, Greenford, UB6 9JP	514691	183269	Roadside	0	9.1
EA21	12 Blenheim Close, Greenford, UB6 8ET	514863	183122	Roadside	0	9.5
EA22	19 Runnymede Gardens, Greenford, UB6 8SX	515240	183102	Roadside	0	1.2
EA23	158 South Ealing Road, Ealing, W5 4QL	517694	179045	Roadside	0	3.5
EA24	213 Northfields Ave, West Ealing, W13 9QU	517045	179292	Roadside	0	5.2
EA25	12 Bond Street, Ealing, W5 5AP	517644	180613	Roadside	0	2.7
EA26	8 Spring Bridge Road, Ealing, W5 2AA	517745	180827	Roadside	0	3
EA27	21 Haven Lane, Ealing, W5 2HZ	518022	181114	Roadside	0	2.4
EA28	41-42 Haven Green, Ealing, W5 2NX	517909	180971	Roadside	0	3
EA29	64 Hanger Lane, Ealing,W5 2JH	518635	181288	Roadside	0	0.7
EA30	Fernlea House, Hanger Lane, Ealing, W5 1EF (AQMS) (Tri)	518541	182707	Roadside	0	4
EA31	Fernlea House, Hanger Lane, Ealing, W5 1EF (AQMS) (Tri)	518541	182707	Roadside	0	4
EA32	Fernlea House, Hanger Lane, Ealing, W5 1EF (AQMS) (Tri)	518541	182707	Roadside	0	4
EA33	25 Waverley Gardens, Park Royal, NW10 7EX	518680	182979	Roadside	0	1.8

Site ID (2017)	Site Name	Grid Reference		Site Type	Distance from monitoring site to relevant exposure (m)	Distance to kerb of nearest road (N/A if not applicable) (m)
		X	Y			
EA34	3 Iveagh Terrace, Park Royal, NW10 7SY	518976	182963	Roadside	0	33
EA35	Wendover Court, Western Avenue, Acton, W3 0TG-Grnd Floor	519997	182178	Roadside	0	11
EA36	322 & 324 Western Avenue, Acton, W3 OPL (AQMS) (Tri)	520430	181950	Roadside	3.5	5
EA37	322 & 324 Western Avenue, Acton, W3 OPL (AQMS) (Tri)	520430	181950	Roadside	3.5	5
EA38	322 & 324 Western Avenue, Acton, W3 OPL (AQMS) (Tri)	520430	181950	Roadside	3.5	5
EA39	326 Western Avenue, Acton, W3 0PL	520426	181958	Roadside	0	11.4
EA40	94 North Acton Road, Park Royal, NW10 7AY	520780	182775	Roadside	0	6
EA41	1 Shaftesbury Gardens, Park Royal, NW10 6LJ	512206	180522	Roadside	0	5
EA42	39 Old Oak Lane, Park Royal, NW10 6EJ	521587	182684	Roadside	0	5
EA43	165 Wells House Road, Park Royal, NW10 6EA	521301	182076	Roadside	0	5
EA44	4 St Andrews Road, Acton, W3 7NE	512138	180953	Roadside	0	8.6
EA45	98 Western Avenue, Acton, W3 7TZ	521173	180981	Roadside	0	10
EA46	6 Western Avenue, Acton, W3 7UD	521549	180923	Roadside	0	4.6
EA47	71 Old Oak Common Lane, Acton W3 7DD	521557	180996	Roadside	0	11
EA48	205 Old Oak Road, Acton W3 7HH	521614	180852	Roadside	0	4.7
EA49	17 The Vale, Acton, W3 7SH	521720	180084	Roadside	0	19.4
EA50	Warple Way, Acton, W3 0RH	521088	180046	Roadside	0	2.2
EA51	88 High Street, Acton, W3 6QX	520285	180075	Roadside	0	5
EA52	15a Church Road, Acton, W3 8QE	520092	180063	Roadside	0	10
EA53	182 High Street, Acton, W3 9NN	520026	180141	Roadside	0	4
EA54	44 Acton Lane, Chiswick, W4 5ED	520480	178854	Roadside	0	5
EA55	156 Horn Lane, Acton, W3 6PH	520180	180896	Roadside	0	6
EA56	317 Horn Lane, Acton, W3 0BU (AQMS) (Tri)	520432	181428	Roadside	10	3
EA57	317 Horn Lane, Acton, W3 0BU (AQMS) (Tri)	520432	181428	Roadside	10	3
EA58	317 Horn Lane, Acton, W3 0BU (AQMS) (Tri)	520432	181428	Roadside	10	3
EA59	5 Leamington Park, Acton, W3 6TJ	520532	181517	Roadside	0	11
EA60	Lyra Court, Portal Way, Acton, W3 6DB	520739	181824	Roadside	0	5
EA61	36 Wales Farm Road, Acton, W3 6UE	520724	181552	Roadside	0	5

Table 2 Annual Mean Nitrogen Dioxide Monitoring Results 2011-2017 (Ratified and Bias-adjusted)

Site ID (2017)	Site type	Valid data capture for monitoring period % [a]	Valid data capture 2017 % [b]	Annual Mean Concentration (µg m^{-3})						
				2011 [c]	2012 [c]	2013 [c]	2014 [c]	2015 [c]	2016 [c]	2017 [c]
EA6 Hanger Lane Gyratory	Automatic	97%	97%	**79.2**	**95.0**	**74.3**	**70.8**	**85**	**76**	**72.3**
EA8 Horn Lane	Automatic	95%	95%	**58.1**	**53.4**	**56.6**	**47.6**	**48**	**48**	**44.2**
EI1 Western Avenue	Automatic	79%	79%	**61.7**	**69.8**	**63.9**	**65.7**	**60.3**	**60.1**	**51.2**
EA01	Diffusion tube	100%	100%	**61.9**	**61.4**	**53.1**	**61.7**	**64.3**	**61.0**	**54.0**
EA02	Diffusion tube	100%	100%	**52.1**	**51.4**	**46.8**	**48.9**	**50.1**	**47.9**	**40.1**
EA03	Diffusion tube	92%	92%	27.2	28.9	23.5	23.5	24.7	23.8	20.2
EA04	Diffusion tube	100%	100%	N/A	N/A	36.5	37.4	36.4	36.2	32.4
EA05	Diffusion tube	100%	100%	37.1	36.5	33.1	32.4	33.5	34.2	29.7
EA06	Diffusion tube	100%	100%	N/A	N/A	**52.6**	**54.5**	**49.5**	**49.8**	**42.8**
EA07	Diffusion tube	100%	100%	30.2	28.9	25.1	25.0	25.6	31.9	29.4
EA08	Diffusion tube	83%	83%	**63.3**	**56.3**	**47.3**	**47.9**	**48.6**	**48.9**	**50.6**
EA09	Diffusion tube	100%	100%	38.6	**41.9**	36.4	36.3	36.7	36.6	31.9
EA10	Diffusion tube	100%	100%	**42.8**	**41.0**	37.6	39.5	**40.3**	38.5	34.6
EA11	Diffusion tube	92%	92%	**43.1**	38.4	32.6	30.5	31.9	33.4	28.6
EA12	Diffusion tube	100%	100%	**47.2**	**44.9**	**41.1**	39.2	37.1	39.3	31.4
EA13	Diffusion tube	100%	100%	**69.3**	**60.9**	**55.2**	**54.2**	**53.5**	**52.7**	**45.1**
EA14	Diffusion tube	100%	100%	N/A	N/A	N/A	N/A	N/A	**48.0**	**44.1**
EA15	Diffusion tube	100%	100%	**45.3**	**44.6**	**42.1**	**41.7**	**42.5**	**42.5**	36.2
EA16	Diffusion tube	100%	100%	N/A	**46.2**	**40.2**	39.6	**42.5**	40.0	37.1
EA17	Diffusion tube	100%	100%	**40.1**	**40.8**	32.5	35.6	37.5	37.3	33.4
EA18	Diffusion tube	100%	100%	39.5	38.6	33.5	34.4	34.5	33.9	31.5
EA19	Diffusion tube	100%	100%	**41.8**	39.5	36.5	39.1	**40.6**	39.3	34.7
EA20	Diffusion tube	100%	100%	N/A	N/A	**42.2**	**47.5**	**48.8**	**42.2**	**41.0**
EA21	Diffusion tube	100%	100%	39.9	**43.2**	38.6	36.6	39.4	39.0	34.2
EA22	Diffusion tube	100%	100%	**43.3**	**44.7**	39.4	**41.2**	**41.9**	39.1	37.9
EA23	Diffusion tube	100%	100%	N/A	N/A	**57.3**	**60.3**	**62.4**	**62.1**	**53.5**
EA24	Diffusion tube	100%	100%	N/A	N/A	37.9	34.6	35.4	36.6	36.1
EA25	Diffusion tube	100%	100%	**57.0**	**49.3**	**50.7**	**47.3**	**49.0**	**48.6**	**44.3**
EA26	Diffusion tube	100%	100%	**71.8**	**66.8**	**61.4**	**61.3**	**62.3**	**61.9**	**54.4**

Site ID (2017)	Site type	Valid data capture for monitoring period % [a]	Valid data capture 2017 % [b]	Annual Mean Concentration (µg m^{-3})						
				2011 [c]	2012[c]	2013 [c]	2014[c]	2015 [c]	2016 [c]	2017 [c]
EA27	Diffusion tube	100%	100%	**41.4**	36.8	33.8	32.4	35.2	35.4	31.2
EA28	Diffusion tube	100%	100%	**60.8**	**52.1**	**48.4**	**51.4**	**49.4**	**48.0**	39.8
EA29	Diffusion tube	100%	100%	**42.7**	**44.4**	38.7	39.4	38.4	39.5	35.6
EA30	Triplicate diffusion tube	100%	100%	**77.1**	**75.0**	**75.1**	**79.6**	**80.3**	**71.5**	**70.3**
EA31	Triplicate diffusion tube	100%	100%	**80.6**	**81.7**	**74.3**	**81.6**	**79.1**	**74.8**	**71.4**
EA32	Triplicate diffusion tube	100%	100%	**78.5**	**79.3**	**74.7**	**79.6**	**79.6**	**73.4**	**74.0**
EA33	Diffusion tube	100%	100%	**54.9**	**51.8**	**49.7**	**50.0**	**52.6**	**49.8**	**43.3**
EA34	Diffusion tube	100%	100%	**44.5**	**45.0**	**40.6**	**40.9**	**41.1**	39.6	34.6
EA35	Diffusion tube	100%	100%	38.9	**56.0**	**59.3**	**56.0**	**56.4**	**55.7**	**47.3**
EA36	Triplicate diffusion tube	92%	92%	**77.8**	**73.8**	**68.2**	**70.5**	**69.9**	**62.1**	**56.3**
EA37	Triplicate diffusion tube	100%	100%	**72.8**	**75.1**	**66.7**	**70.0**	**68.1**	**57.7**	**56.8**
EA38	Triplicate diffusion tube	100%	100%	**73.5**	**74.5**	**67.6**	**70.6**	**68.8**	**60.9**	**54.9**
EA39	Diffusion tube	100%	100%	**62.5**	**59.9**	**57.3**	**55.6**	**58.1**	**52.1**	**45.0**
EA40	Diffusion tube	100%	100%	39.8	38.9	34.2	35.5	38.0	38.1	33.4
EA41	Diffusion tube	100%	100%	**42.1**	**43.4**	37.8	36.5	**40.2**	37.7	32.6
EA42	Diffusion tube	100%	100%	**54.1**	**51.1**	**50.5**	**53.0**	**54.4**	**49.6**	**45.3**
EA43	Diffusion tube	100%	100%	39.9	36.7	39.8	**41.3**	**45.7**	**40.5**	36.9
EA44	Diffusion tube	100%	100%	**43.4**	**42.3**	35.8	**40.2**	**40.0**	38.1	34.7
EA45	Diffusion tube	100%	100%	**51.4**	**51.8**	**48.2**	**50.8**	**49.8**	**49.9**	**43.9**
EA46	Diffusion tube	100%	100%	**70.4**	**70.8**	**69.2**	**77.4**	**82.5**	**75.3**	**67.9**
EA47	Diffusion tube	92%	92%	**53.2**	**49.6**	**48.1**	**47.8**	**49.4**	**49.2**	**43.7**
EA48	Diffusion tube	100%	100%	**59.7**	**55.2**	**58.6**	**57.4**	**60.7**	**58.9**	**50.9**
EA49	Diffusion tube	92%	92%	**50.1**	**49.5**	**44.3**	**40.3**	**41.4**	**40.9**	34.6
EA50	Diffusion tube	100%	100%	N/A	N/A	**43.1**	39.8	38.2	39.4	32.6
EA51	Diffusion tube	100%	100%	N/A	**54.7**	**56.2**	**56.9**	**55.5**	**56.0**	**49.0**
EA52	Diffusion tube	83%	83%	32.9	39.5	30.6	36.4	33.7	35.1	28.6
EA53	Diffusion tube	92%	92%	**67.4**	**48.9**	**59.0**	**53.9**	**55.8**	**54.7**	**44.4**
EA54	Diffusion tube	92%	92%	**41.8**	**40.1**	38.4	38.0	**41.1**	37.8	37.6
EA55	Diffusion tube	100%	100%	**46.6**	**40.7**	**42.2**	**42.3**	**42.2**	**43.1**	36.5
EA56	Triplicate diffusion tube	100%	100%	**59.6**	**54.7**	**51.8**	**48.2**	**52.3**	**51.0**	**45.3**
EA57	Triplicate diffusion tube	100%	100%	**56.8**	**47.0**	**50.1**	**50.7**	**51.6**	**51.1**	**44.4**
EA58	Triplicate diffusion tube	92%	92%	**54.0**	**53.2**	**51.5**	**46.4**	**52.2**	**50.4**	**42.7**
EA59	Diffusion tube	100%	100%	**48.6**	**46.6**	**41.9**	**40.9**	**43.7**	**43.7**	36.4
EA60	Diffusion tube	100%	100%	N/A	N/A	N/A	**43.1**	**47.8**	**47.5**	**40.0**
EA61	Diffusion tube	100%	100%	**48.5**	**44.8**	**44.7**	**43.2**	**45.6**	**43.9**	38.9

Notes: Exceedances of the NO_2 annual mean Air Quality Objective of 40 µg.m^{-3} are shown in **bold**. N/A = no result available. Tri = triplicate diffusion tube

NO_2 annual means in excess of 60 µg m^{-3} indicate a potential exceedance of the NO_2 hourly mean AQS objective and are shown in **bold and underlined**.

Reports on previous scrutiny work - synopsis and recommendations

The Council's work on air quality in the borough has been reviewed twice in recent years by Scrutiny and Review Panels. Their findings and recommendations are summarised below:

Scrutiny Review Panel 1 – 2015/2016: Ealing 360°

Air Quality and Pollution		
The Regulatory Service should review the current level of monitoring stations and look to increasing these in the borough for better monitoring to take place.	The borough's provision for air quality monitoring is kept under regular review to achieve the best coverage of monitors and the efficient use of resources. Regulatory Services believes the current monitoring network provides a good overview of public exposure to air pollution in the borough, however the Panel's recommendation to increase monitoring is welcomed and the reinstatement of some closed monitoring stations would further improve our understanding of pollution trends across the borough. Any expansion in the number of monitoring stations will require new funding to be identified. In addition to installation costs, a basic automatic monitoring station for PM_{10} and nitrogen oxides, for example, costs a minimum of £6000 a year to operate at today's prices and most stations require further expenditure for repairs from time to time.	Accept, subject to resource implications
The Regulatory and Parking Services should monitor engine idling by private bus services offered by the University of West London and Sky (particularly at Haven Green).	The Transport Policy and Projects Team is co-ordinating a monitoring exercise to check on the idling of private shuttle buses at Haven Green.	Accept
The Regulatory Service should consider installing a PM2.5 monitor at Horn Lane in Acton for better monitoring of the air quality in the area.	Regulatory Services is proposing to install a $PM_{2.5}$ monitor at the Horn Lane monitoring station to start measurements at the beginning of the next monitoring year (January 2017). This will replace the council's PM_{10} TEOM monitor at the monitoring station, but the Defra FDMS PM_{10} monitor will remain in place. Defra has been asked for their view on installing the $PM_{2.5}$ monitor and their response is awaited. The new London Local Air Quality Management regime also requires local authorities to inform the GLA of any changes to their monitoring network, including any reasons for the change.	Accept, subject to Defra and GLA agreement
The Regulatory and Transport Services should consider setting up a working party made up of councillors, officers, partner agencies and residents to look at innovative solutions to the traffic and air pollution problems in the A40 corridor.	As part of its review of the council's Air Quality Action Plan, Regulatory Services will shortly be drafting a new set of actions aiming to reduce pollution along the A40 and will be engaging with the stakeholders suggested.	Accept
The Planning Enforcement and Environment Service should investigate how the planning process could be used to negate air pollution impacts in the borough.	The Planning Enforcement and Environment Team (Regulatory Services) currently provides comments on development proposals where there are air quality implications and recommends appropriate planning conditions. The service also requests s.106 planning contributions for air quality improvement and mitigation measures, including the development and implementation of Low Emissions Strategies for major regeneration schemes. Under the recently-introduced London Local Air Quality Management, from 2017 the council will be required to report annually to the GLA on the numbers of planning permissions that	Accept

	have included London Plan air quality requirements, including conditions to control of emissions from Non-Road Mobile Machinery.	
The Regulatory and Transport Services should explore the issues around Heathrow Airport to attain the best deal for the residents of the borough.	Regulatory Services will continue to support the council's efforts to press for better controls on airport-related emissions, including those attributable to aircraft.	Accept
Transport for London should be asked to look into the provision and usage on the 440 bus route in the borough.	[TfL to respond]	
The Parking Service should look at the cost of controlled parking zone permits to help improve the air quality in the borough by either increasing these for vehicles with diesel engines or reducing them for vehicles with petrol engines.	[Parking Services to respond]	

Scrutiny Review Panel 4 – 2017/2018: Transport

Air Quality and Pollution	
The Panel supports the Service Officers' work to encourage sustainable transport as opposed to private motor vehicles. Particularly, the focus on walking and cycling which also deliver the highest health benefits.	Agree and support
The Transport Service should keep abreast of technological developments and pursue those that offer the best quality of life benefits and value for money for the taxpayer. This includes car clubs and electric vehicles.	Recommendation not practical in its current form. Reword to: The Transport Planning Service to keep abreast of and advise on technological developments and pursue those that offer the best road safety, physical activity and emissions and value for money for the taxpayer. This includes car clubs and electric vehicles
The Transport Service should identify appropriate space/land that is not just confined to public space for suitable suppliers to provide more electric vehicle charging points in the borough.	Recommendation not practical in its current form. Reword to: The Transport Planning Service, in conjunction with TfL, should identify appropriate locations both on-street and on other Council land for suitable suppliers to provide more electric vehicle charging points in the borough. On private land, the Transport Planning Service and Planning Services should require developers to install the necessary electric vehicle charging point infrastructure in line with London Plan standards.

Please note that the above table is subject to amendment to reflect the final recommendations adopted.

2. Legal Implications

Ealing Council has statutory local air quality management duties under Part IV of the Environment Act, 1995, and is required to have regard to statutory guidance issued under the Act in the discharge of its duties. Under s. 364 of the Greater London Authority Act 1999, local authorities in Greater London are required to have regard to the London air quality strategy (prepared by the Mayor) in exercising any function under Part IV of the Environment Act 1995. Since April 2016 the London Local Air Quality Management (LLAQM) regime has been in operation, whereby the Mayor of London now exercises

devolved powers and oversight of London local authorities in relation to their air quality management functions.

3. Financial Implications

Air quality monitoring is supported by TfL LIP funding of £0.030m. Air quality improvement projects can be funded through a competitive bidding process for Defra's Air Quality Grants and the Mayor's Air Quality Fund. The operational management functions for air quality are funded from the existing budget within Safer Communities. Where appropriate, contributions towards implementing air quality improvement measures are sought for new developments via s.106 planning obligations.

4. Other Implications

Ealing's air quality work provides a direct link to one of the council's new priorities for the borough: *Working to make our borough a healthy and great place for all.*

5. Background Papers

1. *Air Quality and Pollution*, Report to Scrutiny Review Panel 1 – 2015/2016: Ealing 360 Degrees, 21 January 2016. Available online at the following link.
2. *Air Quality and Pollution Update*, Report to Scrutiny Review Panel 4: Transport, 27 July 2017. Available online at the following link.
3. *Local Authorities and Air Quality: A summary of action taken by London boroughs to improve air quality*, TfL/Mayor of London, February 2017. Available online at https://www.london.gov.uk/sites/default/files/borough_air_quality_report_2017_final_2.pdf.
4. *London Borough of Ealing Air Quality Annual Status Report for 2016,* 4 May 2017 (available from service officer on request)
5. *London Borough of Ealing Air Quality Annual Status Report for 2017,* 30 May 2018 (pending approval by GLA prior to online publication).
6. *Transport solutions for cleaner air,* Kelly, F.J. and Zhu, J.T. *Science,* 20 May 2016: Vol. 352, Issue 6288, pp. 934-936. Available online at https://kclpure.kcl.ac.uk/portal/files/61054323/Air_pollution_and_transport_in_urban_environments_kelly.pdf.
7. *London Air Quality Network – Summary Report 2016,* Mittal, L. and Fuller, G., Environmental Research Group, King's College London, June 2017. Available online at https://www.londonair.org.uk/london/reports/2016_LAQN_Summary_Report.pdf.
8. *Driving down emissions – How to clean up road transport*, Howard, R., Rooney, M., Bengherbi, Z. and Charlesworth, D., Policy Exchange, London, 26 June 2017. Available online at https://policyexchange.org.uk/publication/driving-down-emissions-how-to-clean-up-road-transport/.
9. *A Breath of Fresh Air*, Ealing Transition Clean Air Strategy, 30 October 2016. Available online at https://ealingtransition.files.wordpress.com/2016/11/a-breath-of-fresh-air1.pdf.
10. *Understanding the Health Impacts of Air Pollution in London*, Report for Transport for London and the Greater London Authority, Walton, H., Dajnak, D., Beevers, S.,

Williams, M., Watkiss, P. and Hunt, A., Kings College London, 14 July 2015. Available online at https://www.london.gov.uk/sites/default/files/HIAinLondon_KingsReport_14072015_final_0.pdf

11. *UP IN THE AIR - How to Solve London's Air Quality Crisis: Part 1*, Howard, R., Policy Exchange/Capital City Foundation/Kings College London, London, 30 November 2015. Available online at https://policyexchange.org.uk/publication/up-in-the-air-how-to-solve-londons-air-quality-crisis-part-1/.
12. *UP IN THE AIR - How to Solve London's Air Quality Crisis: Part 2,* Howard, R., Beevers, S. and Dajnak, D., Policy Exchange/Capital City Foundation/Kings College London, 23 March 2016. Available online at https://policyexchange.org.uk/publication/up-in-the-air-how-to-solve-londons-air-quality-crisis-part-2/.

Consultation

Name of Consultee	***Department***	***Date Sent to Consultee***	***Date Response Received from Consultee***	***Comments Appear in Report Para:***
Internal				
Director	Executive Director			
Lawyer	Director of Legal Services			
Finance Officer	Director of Finance			
Councillor	Cabinet Member for			
External				
A N Other	Voluntary Organisation			
Police, etc.				

Report History

Decision Type:		***Urgency item?***	
For Information		No	
Authorised by Cabinet Member:	Date Report Drafted:	Report Deadline:	Date Report Sent:
N/A	07.07.18	09.07.18	09.07.18

Report No.:	Report Author and Contact for Queries:
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