

LONDON BOROUGH OF EALING

AIR QUALITY ACTION PLAN 2017–2022

WORKING DRAFT

EALING COUNCIL

Document Control

Client	London Borough of Ealing
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Job number	J2578
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Document status and review schedule

Report number	J2578/1/F2
Date	08 October 2021
Status	Working Draft
Reviewed by	Chris Whall (Director)

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Executive Summary

This Air Quality Action Plan (AQAP) has been produced as part of our duty to manage local air quality, in accordance with the guidance issued by the Mayor under London Local Air Quality Management. It outlines the actions we will take to improve air quality in Ealing borough between 2017 and 2022.

This Action Plan replaces the previous action plan which was published in 2003 outlining measures to be implemented in subsequent years. Highlights of successful projects delivered during the last Action Plan period include significant improvements in PM₁₀ concentrations at Horn Lane, following regulatory interventions and the implementation of a Low Emission Strategy, a number of cycling projects which have seen an increase in cycling trips from 2008/9 to 2013/14 of 59%, including an award winning Ealing Broadway Cycle Hub and forecourt improvements at Ealing Broadway Station. Successfully completed Mayors Air Quality Fund projects include a project in partnership with Ealing Broadway Business Improvement District to introduce a variety of measures that would reduce air pollution across the town centre, Women on Wheels Campaign (to change attitude and behavior of women in the borough with regards to cycling), and the West London Student Cycling Champion project (to further the impact of the existing London by Cycle events). There have also been a number of public transport improvements which have been successfully completed, including work at Hanwell Station, Greenford Underground station as well as Ealing Broadway and along the Paddington main line (as a result of the Crossrail development). In addition, 99% of bus stops are now wheelchair accessible and there has been some excellent work undertaken on school travel plans with two schools in Ealing recognised as the best schools in west London for their achievements in active travel.

Air pollution is associated with a number of adverse health impacts and it is recognised as a contributing factor in the onset of heart disease and cancer. Additionally, air pollution particularly affects the most vulnerable in society: children and older people, and those with heart and lung conditions. There is also often a strong correlation with equalities issues, because areas with poor air quality are also often the less affluent areas^{1,2}.

Research determined that in 2010, 142 deaths were attributable to PM_{2.5} in Ealing with 245 attributable to NO₂³ (figures for NO₂ reflecting a 30% reduction due to overlap with PM_{2.5}). The annual health cost to society of the impacts of air pollution in the UK is estimated to be roughly £15

¹ Environmental equity, air quality, socioeconomic status and respiratory health, 2010. Abstract available at <https://www.ncbi.nlm.nih.gov/pubmed/16234422>

² Air quality and social deprivation in the UK: an environmental inequalities analysis, 2006. Available at https://uk-air.defra.gov.uk/assets/documents/reports/cat09/0701110944_AQinequalitiesFNL_AEAT_0506.pdf

³ Understanding the Health Impacts of Air Pollution in London (July 2015) https://www.london.gov.uk/sites/default/files/hiainlondon_kingsreport_14072015_final.pdf

billion⁴. The London Borough of Ealing is committed to reducing the exposure of people in Ealing to poor air quality in order to improve health.

We have developed actions that can be considered under six broad topics:

- **Emissions from developments and buildings:** emissions from buildings account for about 15% of the nitrogen oxides (NO_x) emissions across London so are important in affecting NO₂ concentrations;
- **Public health and awareness raising:** increasing awareness can drive behavioural change to lower emissions as well as to reduce exposure to air pollution;
- **Delivery servicing and freight:** vehicles delivering goods and services are usually light and heavy duty diesel-fuelled vehicles with high primary NO₂ emissions;
- **Borough fleet actions:** our fleet includes light and heavy duty diesel-fuelled vehicles such as mini buses and refuse collection vehicles with high primary NO₂ emissions. Tackling our own fleet means we will be leading by example;
- **Localised solutions:** these seek to improve the environment of neighbourhoods through a combination of measures; and
- **Cleaner transport:** road transport is the main source of air pollution in London. We need to incentivise a change to walking, cycling, public transport and ultra-low emission vehicles (such as electric) as far as possible.

Our priorities are to build on the work already undertaken in relation to encouraging cycling and walking, and working in partnership *within* Ealing Council to implement transport projects through the Local Implementation Plan (LIP), to ensure joint working continues with public health professionals and to ensure that the planning system builds on collaborative working to fully consider air quality within planning decisions and ensure mitigation is implemented. We will also work with external partners such as the Greater London Authority (GLA) and the Environment Agency in order to implement measures at a wider scale and to continue implementing measures in relation to fugitive PM₁₀ emissions, in particular at Acton Goods Yard, Horn Lane.

You will see in this report that we have worked hard to engage with stakeholders and communities which can make a difference to air quality in the borough. We would like to thank all those who have worked with us in the past and we look forward to working with you again, as well with new partners, as we deliver this new action plan over the coming years.

In this AQAP we outline how we plan to effectively use local levers to tackle air quality issues within our control. However, we recognise that there are a large number of air quality policy areas that are outside of our influence (such as Euro standards, national vehicle taxation policy, taxis and

⁴ Defra. Air Pollution: Action in a Changing Climate, March 2010

buses), and so we will continue to work with and lobby regional and central government on policies and issues beyond the London Borough of Ealing's influence.

Responsibilities and Commitment

This AQAP was prepared by the Pollution - Technical section in Regulatory Services at Ealing Council, in association with Air Quality Consultants Ltd, with the support and agreement of the following officers and departments:

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This AQAP has been approved by the Director of Safer Communities & Housing, having consulted with the Cabinet Member for Environment upon completion of the consultation exercise, under delegation from Cabinet. In addition, the Head of Transport Services and the Director of Public Health have also approved the document.

This AQAP will be subject to an annual review, appraisal of progress and reporting to the Directors of Safer Communities & Housing, Transport and Public Health. Progress each year will be reported in the Annual Status Reports produced by the London Borough of Ealing as part of our statutory London Local Air Quality Management duties.

If you have any comments on this AQAP please send them to John Freeman at:

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Abbreviations

AQAP	Air Quality Action Plan
AQMA	Air Quality Management Area
ASR	Annual Status Report
CAB	Cleaner Air Borough
CHP	Combined Heat and Power
DPH	Director of Public Health
EV	Electric Vehicle
FORS	Fleet Operator Recognition Scheme
GLA	Greater London Authority
JSNA	Joint Strategic Needs Assessment
LAEI	London Atmospheric Emissions Inventory
LAQN	London Air Quality Network
LAQM	Local Air Quality Management
LB	London Borough
LIP	Local Implementation Plan
LLAQM	London Local Air Quality Management
MAQS	Mayors Air Quality Strategy
MTS	Mayors Transport Strategy
NRMM	Non-Road Mobile Machinery
OLEV	Office for Low Emission Vehicles
PM ₁₀	Particulate matter less than 10 micron in diameter
PM _{2.5}	Particulate matter less than 2.5 micron in diameter
SPG	Supplementary Planning Guidance
STARS	Sustainable Travel: Active, Responsible, Safe
TfL	Transport for London
ULEZ	Ultra-Low Emission Zone
WLSRTP	West London Sub-Regional Transport Plan

1 Foreword

- 1.1 We are very pleased to present Ealing's Air Quality Action Plan setting out measures to improve air quality in Ealing between 2017 and 2022. This Action Plan replaces the Council's first plan published in 2003.
- 1.2 Ealing Council is committed to making the borough a better place to live and work. Air quality affects everyone living and working in the borough and is therefore an integral part of this vision.
- 1.3 There are already a number of initiatives in place to improve air quality both London-wide and at the Ealing scale which are already working well. We will build on these initiatives to implement further encouragements to active travel, implement transport improvements, reduce emissions from new developments and to try to reduce exposure for residents.
- 1.4 This Action Plan sets out how we will work towards meeting national air quality objectives for nitrogen dioxide and PM₁₀. We can't achieve this alone, and we will be taking a partnership approach both across Ealing Council and with external organisations, many of whom have already been involved in the Steering Group, through which the document has been written.
- 1.5 Ealing achieved Cleaner Air Borough status in 2016, which has a number of criteria to be achieved under 6 themes: political leadership; taking action; leading by example; using the planning system; informing the public and integrating air quality into the public health system. This Action Plan contributes to satisfying these criteria and it is hoped that Ealing Council will build on this action plan to retain its Cleaner Air Borough status.

2 Introduction

- 2.1 This report outlines the actions that the London Borough of Ealing, and others, will deliver between 2017-2022 in order to reduce concentrations of pollution, and exposure to pollution; thereby positively impacting on the health and quality of life of residents and those employed in or visiting to the borough.
- 2.2 It has been developed in recognition of the legal requirement on the local authority to work towards air quality objectives under Part IV of the Environment Act 1995 and relevant regulations made under that Act and to meet the requirements of the London Local Air Quality Management statutory process⁵.

Summary of current air quality in Ealing

- 2.3 The UK Air Quality Strategy (AQS), published in July 2007, provides the overarching strategic framework for air quality management in the UK and contains national air quality standards and objectives established by the Government to protect human health. The AQS objectives take into account EU Directives that set limit values which member states are legally required to achieve by their target dates.
- 2.4 The London Borough of Ealing is meeting all of the national AQS objectives other than those for nitrogen dioxide (NO₂). The London Borough of Ealing is currently meeting the objectives for Particulate Matter (PM₁₀ and PM_{2.5}) but as this pollutant is damaging to health even at low concentrations, this remains a pollutant of concern. There have been concerns, and historical breaches of the air quality objectives, over a number of years regarding PM₁₀, particularly at Acton Goods Yard, Horn Lane. Work has been undertaken putting in place a Low Emission Strategy for the site, as well as joint enforcement action by the Council and the Environment Agency.

AQMAs and Focus Areas

- 2.5 In Ealing an Air Quality Management Area (AQMA) has been declared covering the whole borough.
- 2.6 The AQMA has been declared for nitrogen dioxide (NO₂; annual mean objective) and Particulate Matter (PM₁₀; 24-Hour mean objective), as both pollutants failed to meet the relevant air quality objectives. For PM₁₀, air quality objectives are now largely being achieved, but there are still widespread exceedences of NO₂, particularly along busy and congested roads. The London Borough of Ealing also has a formal responsibility to work towards reductions of PM_{2.5}, which is a

⁵ LLAQM Policy and Technical Guidance. <https://www.london.gov.uk/what-we-do/environment/pollution-and-air-quality/working-boroughs>

fraction of PM_{10} , although the objective for this pollutant is a national rather than a local requirement.

2.7 An Air Quality Focus Area is a location that has been identified by the GLA as having high levels of pollution and human exposure. There are currently 8 focus areas in the borough. These are:

- Acton A40 North Acton Station/Gypsy Corner/Savoy Circus;
- Hanger Lane/Twyford Abbey Road;
- Perivale A40 Western Avenue Teignmouth Gardens to Alperton Lane;
- Uxbridge Road/ Ealing Broadway and Haven Green;
- Acton High Street/Gunnersbury Lane junction to rail in Acton High Street;
- King Street/ The Green/ Western Road/ South Road;
- Victoria Road/ Portal Way/ Wales Farm Road; and
- Greenford Road (junction with Rockware Avenue) to Greenford Road (junction with Whitton Avenue West)

2.8 The Air Quality Focus Areas are included on the maps (Figure 1, Figure 2 and Figure 3) of pollutant concentrations across Ealing borough.

2.9 The following maps provide a context for concentrations of annual mean NO_2 , PM_{10} and $PM_{2.5}$. They are based on modelled concentrations from the London Atmospheric Emissions Inventory (LAEI).

2.10 Figure 1 shows annual mean NO_2 concentrations, as well as monitored concentrations at diffusion tube sites (2015). It shows that the highest concentrations are along main roads, reflecting the major source of pollution within Ealing. There are large areas of the borough away from major roads where the annual mean NO_2 objective is being achieved. It should be noted that the objectives apply at locations where members of the public are likely to be regularly present and are likely to be exposed over the averaging period of the objective. The annual mean objectives for nitrogen dioxide and PM_{10} are considered to apply at the façades of residential properties, schools, hospitals etc. The 24-hour objective for PM_{10} is considered to apply at the same locations as the annual mean objective, as well as in gardens of residential properties and at hotels.

2.11 Figure 2 shows the annual mean PM_{10} concentrations, which again shows higher concentrations in the east of the borough (towards central London) with higher concentrations along major roads. A similar distribution is shown for $PM_{2.5}$ in Figure 3.

2.12 All maps also show Air Quality Focus Areas within Ealing.

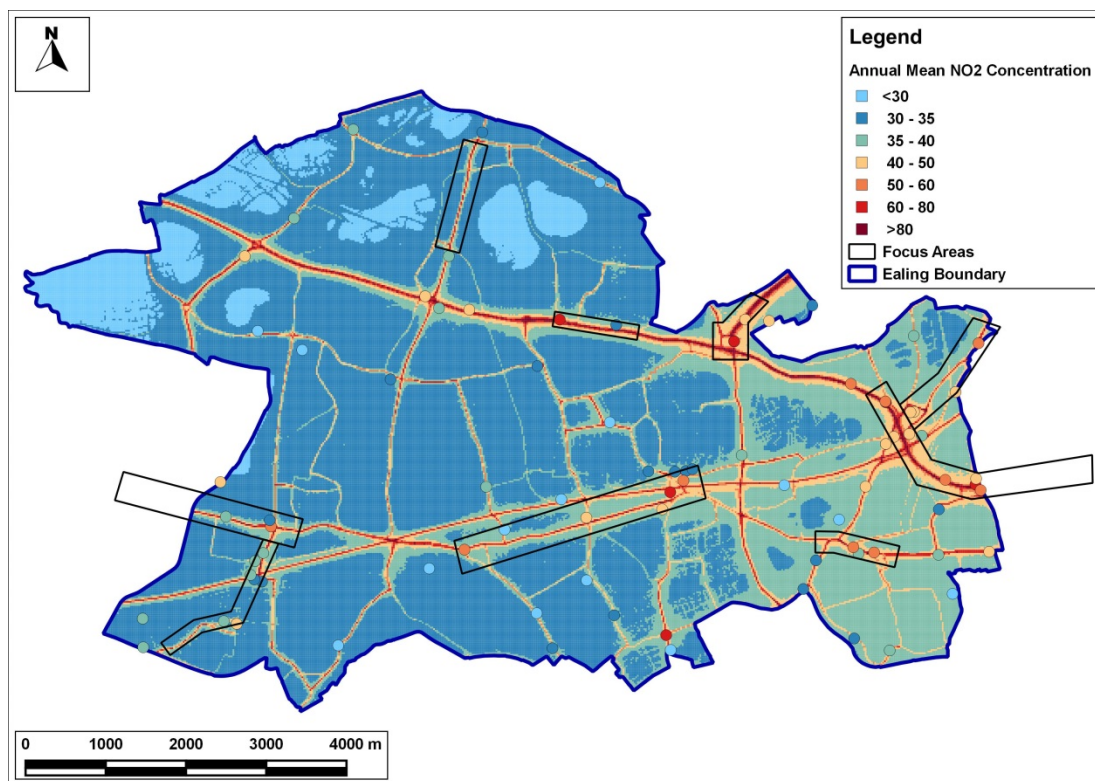


Figure 1 Modelled map of annual mean NO₂ concentrations including monitoring locations and Air Quality Focus Areas (from the LAEI 2013)

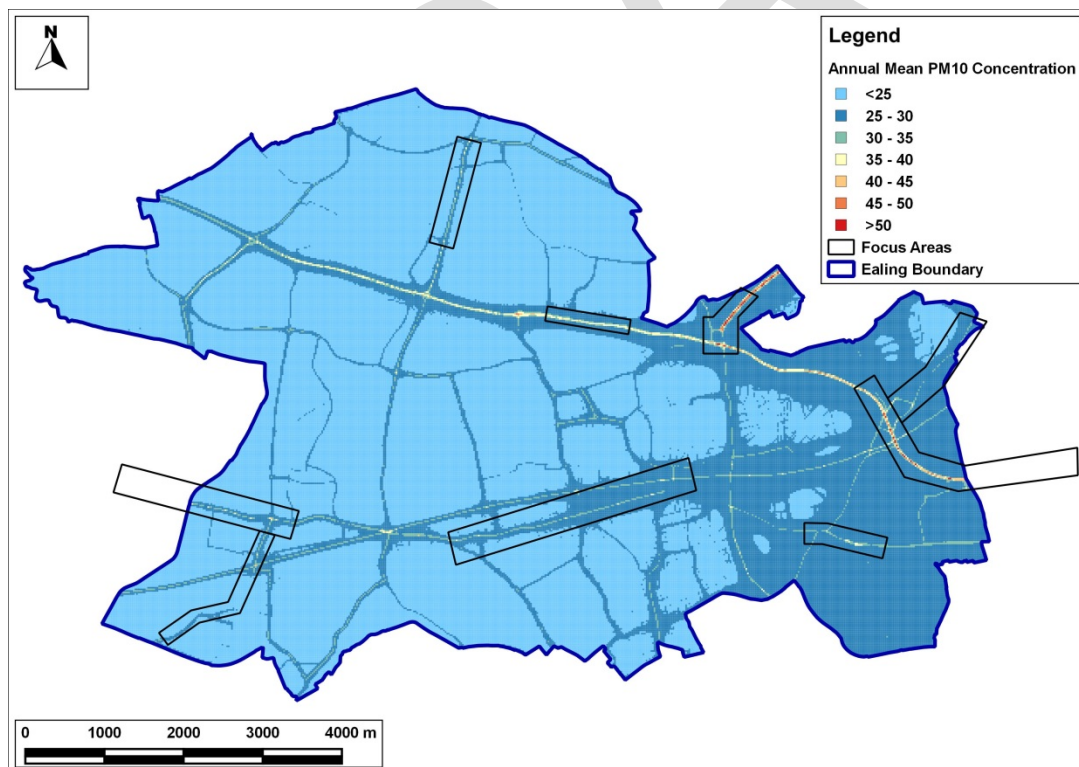


Figure 2 Modelled map of annual mean PM₁₀ including Air Quality Focus Areas (from the LAEI 2013)

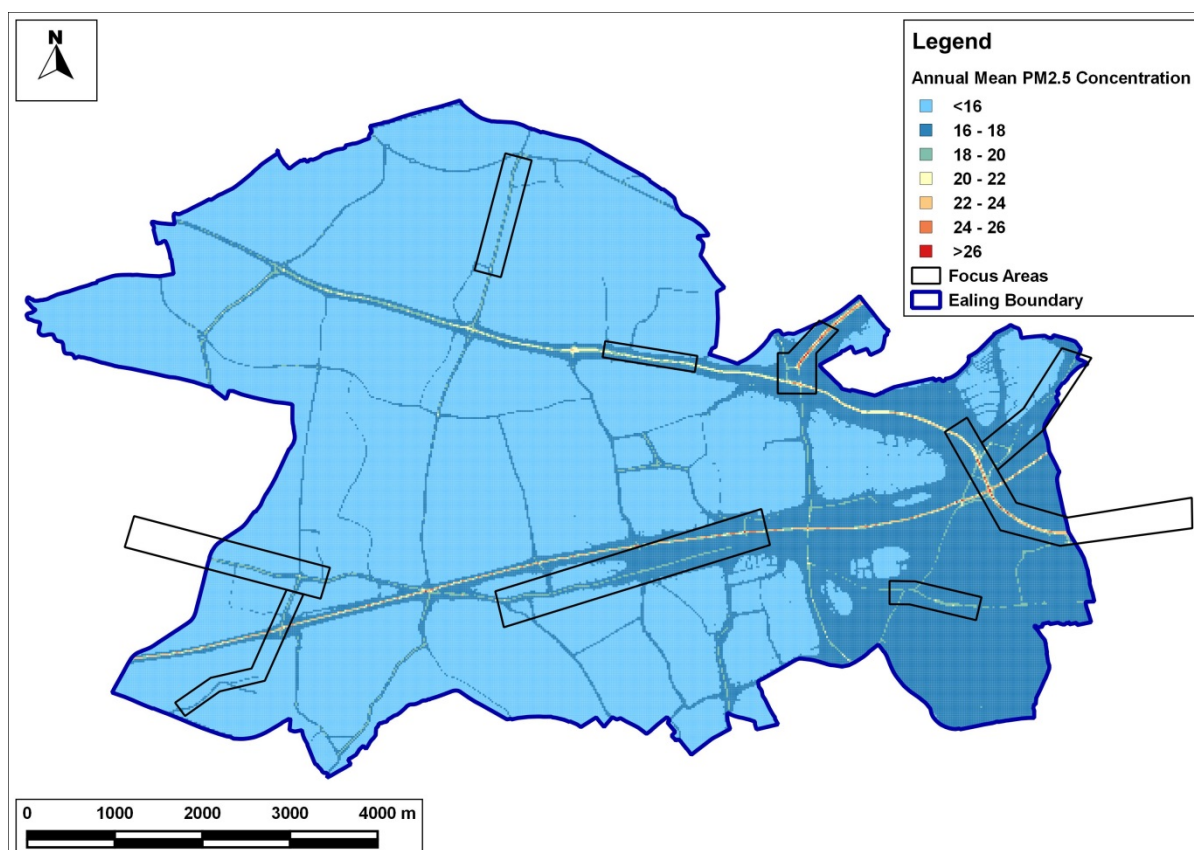


Figure 3 Modelled map of annual mean PM_{2.5} including Air Quality Focus Areas (from the LAEI 2013)

Sources of Pollution in Ealing Borough

- 2.13 Air pollution in Ealing borough comes from a variety of sources. This includes pollution from sources outside of the borough, and, in the case of particulate matter, a significant proportion of this comes from outside of London and even the UK.
- 2.14 Of the pollution that originates in the borough the main sources of NO_x emissions are road transport and domestic and commercial gas sources (i.e. boilers) (Figure 4). In relation to transport emissions (Figure 5), diesel vehicles predominate. The main sources of particulate matter are road transport, resuspension⁶, rail and Non Road Mobile Machinery (Figure 6 and Figure 7).

⁶Human activity, in particular moving vehicles and cleaning, resuspends particles, regenerating airborne contaminants.

NOx Emissions Sources in Ealing

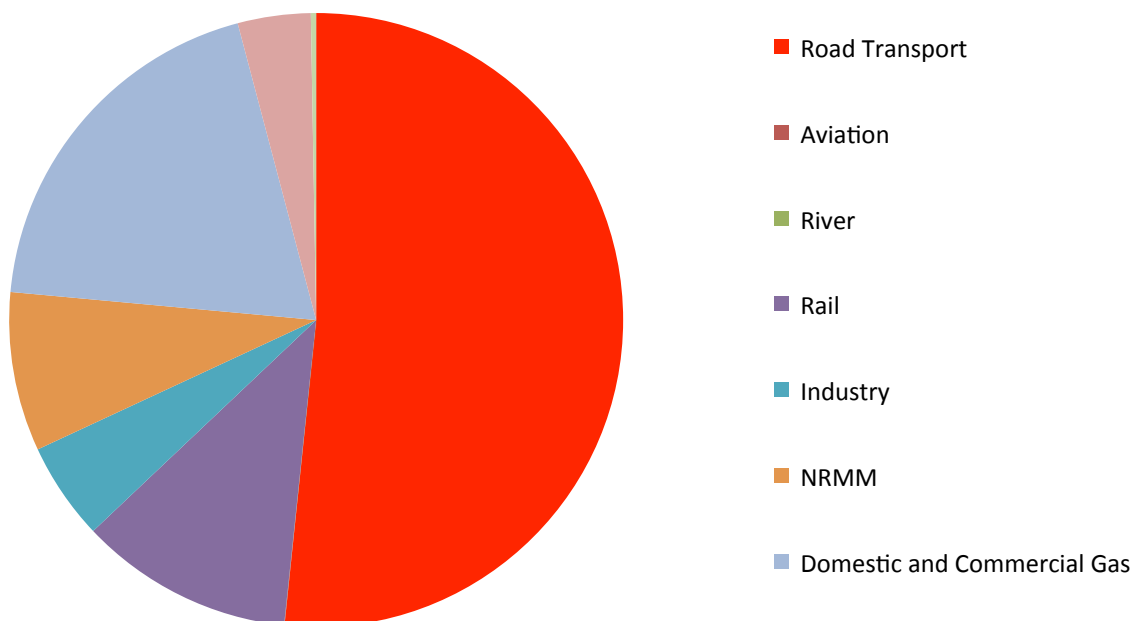


Figure 4 NOx Emissions by source (from the LAEI 2013)

NOx Emissions by Vehicle Class

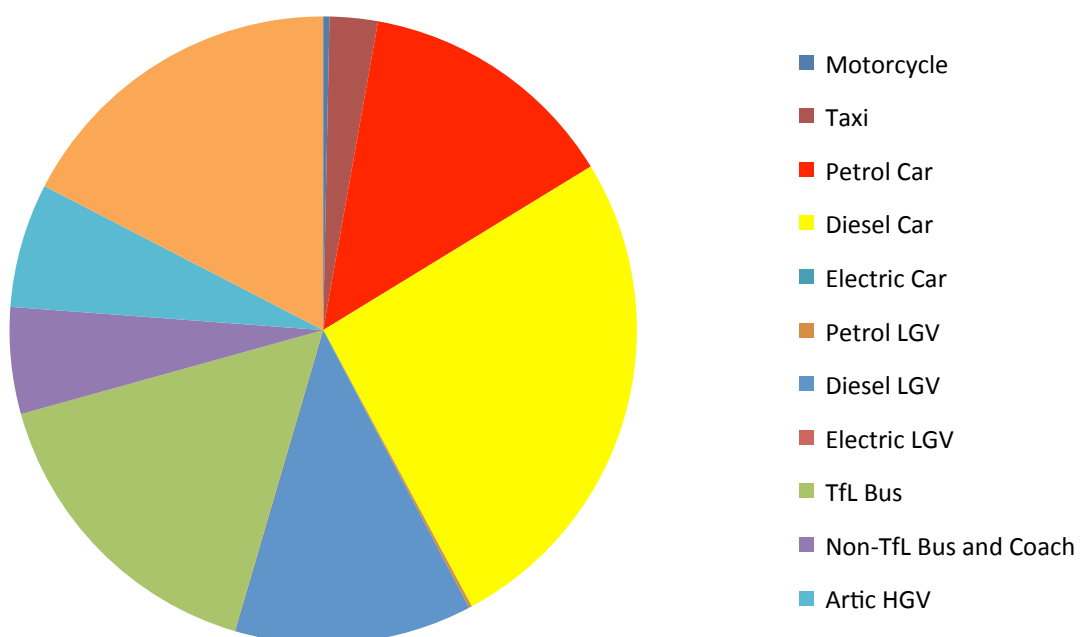


Figure 5 NOx Emissions by vehicle type (from the LAEI 2013)

PM₁₀ Emissions Sources in Ealing

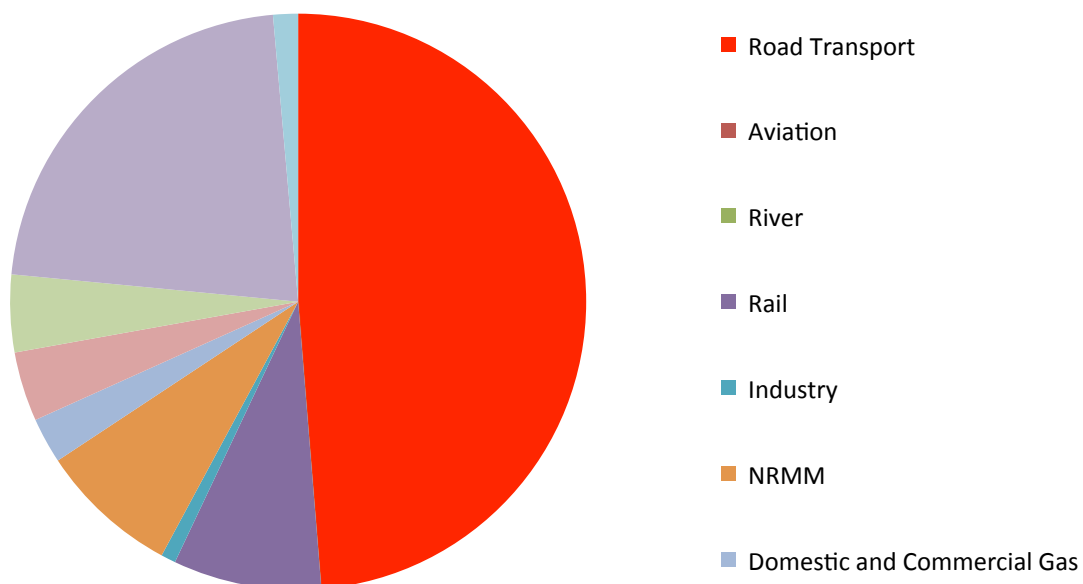


Figure 6 PM₁₀ Emissions by source (from the LAEI 2013)

PM_{2.5} Emissions Sources in Ealing

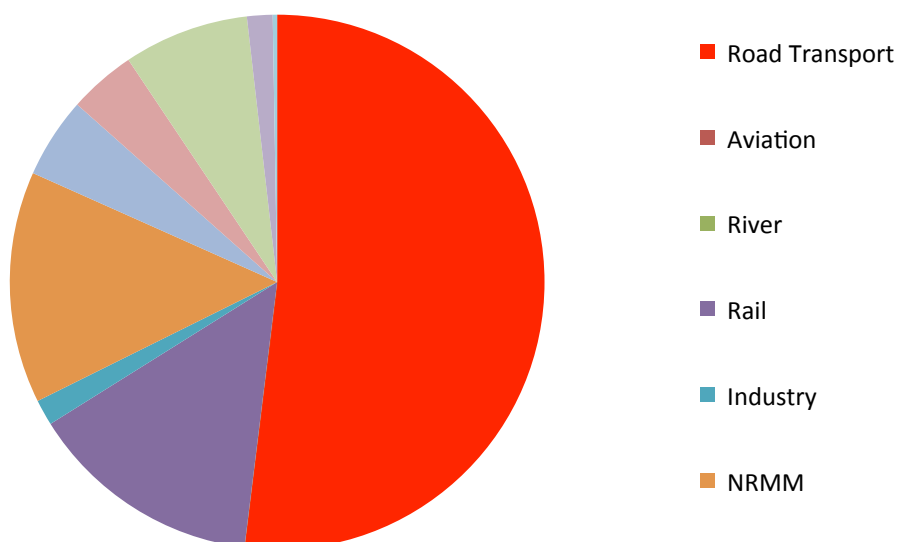


Figure 7 PM_{2.5} Emissions by source (from the LAEI 2013)

3 Ealing Council's Air Quality Priorities

3.1 The council's four-year corporate plan⁷ sets out Ealing's priorities and specific, ambitious targets, all of which are designed to have a major positive impact on the quality of people's lives. In order to deliver on these targets, Ealing must work closely with other organisations, and also encourage and support residents to act.

3.2 There are six priorities for the borough which are to make Ealing:

Prosperous; By creating the right conditions for economic growth, enhancing opportunities for local people, providing affordable, high quality housing and helping young people to achieve at school and compete in the labour market.

Safer; Driving improvements in reducing crime and the fear of crime, reducing the number of young people in the criminal justice system, improving the quality of private rented housing and safeguarding the most vulnerable people in the borough.

Healthier; Improving public health through early intervention and prevention. In particular to support residents with physical and mental health issues to be as independent as possible.

Cleaner; Maintaining the quality and cleanliness of the public realm and supporting citizens to play an active role in enhancing their neighbourhoods.

Fairer; Through the efficient and effective use of resources to deliver maximum benefits for residents and businesses. Delivering world class customer service.

Accessible; Delivering a sustainable and effective transport infrastructure and improving the parking service.

3.3 This Action Plan supports Ealing's priorities in particular through improving public health, and delivering a sustainable and effective transport infrastructure and improving the parking service.

3.4 Another priority is to maintain Cleaner Air Borough Status, which is awarded by the Mayor to boroughs that have made demonstrable efforts towards tackling air pollution, and will also enable it to bid for additional funding from GLA. This Action Plan plays a major part in improving air quality across the borough.

⁷ Available at: https://www.ealing.gov.uk/info/201072/strategies_plans_and_policies/300/corporate_plan

4 Policy Context

Air Quality Strategy

- 4.1 The Air Quality Strategy (Defra, 2007) published by the Department for Environment, Food, and Rural Affairs (Defra) and Devolved Administrations, provides the policy framework for air quality management and assessment in the UK. It provides air quality standards and objectives for key air pollutants, which are designed to protect human health and the environment. It also sets out how the different sectors: industry, transport and local government, can contribute to achieving the air quality objectives. Local authorities are seen to play a particularly important role. The strategy describes the Local Air Quality Management (LAQM) regime that has been established, whereby every authority has to carry out regular reviews and assessments of air quality in its area to identify whether the objectives have been, or will be, achieved at relevant locations, by the applicable date. If this is not the case, the authority must declare an Air Quality Management Area (AQMA), and prepare an action plan which identifies appropriate measures that will be introduced in pursuit of the objectives.
- 4.2 London Local Air Quality Management (LLAQM) is set out in Policy Guidance and Technical Guidance issued by the Mayor in 2016. Supervision of the LAQM system in Greater London has been devolved to the Mayor of London, to whom powers to intervene and direct boroughs have been given under Part IV of the Environment Act 1995. These guidance documents outline changes to the LAQM system which includes the introduction of an air quality Annual Status Report (ASR) to amalgamate all other reporting requirements.

The London Plan

- 4.3 The London Plan (GLA, 2015) sets out the spatial development strategy for London, consolidated with alterations made to the original plan since 2011. It brings together all relevant strategies, including those relating to air quality.
- 4.4 Policy 7.14, 'Improving Air Quality', addresses the spatial implications of the Mayor's Air Quality Strategy and how development and land use can help achieve its objectives. It recognises that Boroughs should have policies in place to reduce pollutant concentrations, having regard to the Mayor's Air Quality Strategy.
- 4.5 Policy 7.14B(c), requires that development proposals should be "at least 'air quality neutral' and not lead to further deterioration of existing poor air quality (such as designated Air Quality Management Areas (AQMAs))".

The Mayor's Transport Strategy

- 4.6 The Mayor's Transport Strategy (MTS) sets out the transport vision for London. Published in 2010, it details how Transport for London and partners will deliver the plan over the next 20 years. The goals of the Strategy include achieving the highest environmental standards. There are a number of measures included in the document which encourage walking and cycling, and also in relation to tightening emissions standards (through the Low Emission Zone and Ultra Low Emission Zone).

Buses

- 4.7 The London bus fleet is already the cleanest in the UK with all vehicles meeting or exceeding the Euro IV emission standard for PM and NO₂. The average age of vehicles is 6 years. A large proportion of the oldest buses in the fleet have been upgraded and TfL are now promoting hybrid buses as the automatic choice for London by working with bus manufacturers to bring the cost of hybrid buses in line with standard diesel counterparts. The ultimate aim of TfL is to move from a low carbon to zero-emission fleet at the earliest opportunity. In Ealing borough, hybrid buses are currently used on Route 7 (Metrolink Travel), Route 94 (London United) and E1 (Abellio London). A greater proportion of hybrid buses will be encouraged on routes within Ealing. It should be noted that despite this, buses remain a major source of NO_x emissions (see Figure 4), which is partly the result of Euro IV and V vehicles not reaching the improvements in emissions needed to achieve the relevant Euro standard under London driving conditions.
- 4.8 In January 2017 10 new Low Emission Bus Zones were announced including Uxbridge Road to Shepherds Bush (from Ealing Broadway via Hanger Lane to Uxbridge Road) to be delivered by 2020. The new greener buses, which will be a combination of hybrid and clean buses that meet Euro VI standards, are part of an improvement programme to 3,000 buses outside central London. The Low Emission Bus Zones will utilise a number of 'Bus Priority Schemes' that ensure buses have priority over other traffic and are able to keep moving, cutting idling emissions and speed up journey times for passengers. In February 2017 a further 2 bus routes were announced, which will run exclusively on electric buses, including the 70 route to Acton.

The Mayor's Air Quality Strategy

- 4.9 The revised Mayor's Air Quality Strategy (MAQS) was published in December 2010 (GLA, 2010). The overarching aim of the Strategy is to reduce pollution concentrations in London to achieve compliance with the EU limit values as soon as possible. The Strategy commits to the continuation of measures identified in the 2002 MAQS, and sets out a series of additional measures, including those relating to smarter choices and sustainable travel, promotion of technological change and cleaner vehicles, reducing emissions from public transport and using the planning system to improve air quality.

- 4.10 The MAQS also addresses the issue of ‘air quality neutral’ and states that the “GLA will work with boroughs to assist in the development of methodologies that will allow an accurate assessment of the impacts of the emissions of new developments” (Para 5.3.19).

Low Emission Zone (LEZ)

- 4.11 A key measure to improve air quality in Greater London is the Low Emission Zone (LEZ). This entails charges for vehicles entering Greater London not meeting certain emissions criteria, and affects older, diesel-engined lorries, buses, coaches, large vans, minibuses and other specialist vehicles derived from lorries and vans. The LEZ was introduced on 4th February 2008, and was phased in through to January 2012. From January 2012 a standard of Euro IV was implemented for lorries and other specialist diesel vehicles over 3.5 tonnes, and buses and coaches over 5 tonnes. Cars and lighter Light Goods Vehicles (LGVs) are excluded. The third phase of the LEZ, which applies to larger vans, minibuses and other specialist diesel vehicles, was also implemented in January 2012. As set out in the 2010 MAQS, a NO_x emissions standard (Euro IV) is included in the LEZ for HGVs, buses and coaches, from 2015.

Ultra-Low Emission Zone (ULEZ)

- 4.12 The current Mayor, Sadiq Khan, has confirmed the introduction of the Ultra-Low Emission Zone (ULEZ) in the Capital on 7 September 2020. The ULEZ will operate 24 hours a day, 7 days a week in the same area as the current Congestion Charging zone. All cars, motorcycles, vans, minibuses and Heavy Goods Vehicles will need to meet exhaust emission standards (ULEZ standards) or pay an additional daily charge to travel within the zone. The ULEZ standards are Euro 3 for motorcycles; Euro 4 for petrol cars, vans and minibuses; Euro 6 for diesel cars, vans and minibuses; and Euro VI for HGVs, buses and coaches.
- 4.13 There are currently proposals to introduce the central London ULEZ one year earlier than planned in 2019 as well as then extending the zone beyond central London to the North and South Circular roads by 2020. This will mean there will potentially be a proportion of Ealing borough within the ULEZ by 2020, which may have knock on effects to areas just outside the zone.

GLA SPG: Sustainable Design and Construction

- 4.14 The GLA’s SPG on Sustainable Design and Construction (GLA, 2014a) provides details on delivering some of the priorities in the London Plan. Section 4.3 covers Air Pollution. It defines when developers will be required to submit an air quality assessment, explains how location and transport measures can minimise emissions to air, and provides emission standards for gas-fired boilers, Combined Heat and Power (CHP) and biomass plant. It also sets out, for the first time, guidance on how Policy 7.14B(c) of the London Plan relating to ‘air quality neutral’ (see Paragraph 4.5, above) should be implemented.

GLA SPG: The Control of Dust and Emissions During Construction and Demolition

- 4.15 The GLA's SPG on The Control of Dust and Emissions During Construction and Demolition (GLA, 2014b) outlines a risk assessment based approach to considering the potential for dust generation from a construction site, and sets out what mitigation measures should be implemented to minimise the risk of construction dust impacts, dependent on the outcomes of the risk assessment. This guidance is largely based on the Institute of Air Quality Management's (IAQM) 2014 guidance on the Assessment of dust from demolition and construction (Institute of Air Quality Management, 2016), and it states that "the latest version of the IAQM Guidance should be used".

West London Sub-Regional Transport Plan

- 4.16 Ealing is the lead borough for the West Trans sub-regional partnership which also includes Brent, Hammersmith and Fulham, Harrow, Hillingdon and Hounslow. The West London Sub-Regional Transport Plan (WLSRTP) sets out the transport strategy to address the particular challenge faced by the sub region. The plan also provides the context for individual borough LIPs and helps form a bridge between the Mayors Transport Strategy and the individual local authority transport objectives. The WLSRTP identified the following challenges for the west sub-region:

- Improve north-south connectivity;
- Improve access to, from and within Key locations;
- Enhance east-west capacity and manage congestion;
- Enhance the efficiency of freight movements in the sub-region; and
- Improve land-based air quality.

Ealing Corporate Plan (2014-2018)

- 4.17 The Ealing Corporate Plan is summarised in Chapter 3 of this report.

Local Implementation Plan

- 4.18 The Local Implementation Plan (LIP) is a statutory document prepared by each London borough to implement the Mayor of London's Transport Strategy (MTS). It sets out overarching borough transport objectives with an associated delivery and monitoring strategy and progress of the programmes, with reference to the Mayor's priority areas.
- 4.19 The current LIP sets out the council's current transport priorities, projects and targets for the period 2014-2017. The LIP has eight policy objectives which focus on road safety, sustainable travel, smoothing traffic flow, quality of life, healthy travel, accessibility, principal road condition and reduced contribution to climate change. Ealing has successfully sought funding in addition to LIP

funding from TfL through competitive bidding processes such as the major schemes programme area, the Mayors Air Quality Fund, Borough Cycling Programme and Mini Holland funding programmes. The focus of the LIP includes the encouragement of sustainable travel, especially cycling. The LIP also includes 14 targets in its performance monitoring framework covering areas such as walking and cycling mode shares and PM₁₀ concentrations.

Local Plan

- 4.20 The adopted Development (Core) Strategy 2026 provides the spatial vision and policies to support the future development of the borough. The Strategy also has to conform to both the context and the policies of the London Plan. The vision is to harness opportunities for growth and development and promote improvement in appropriate locations. These locations are primarily along the Uxbridge Road/ Crossrail and the A40/ Park Royal corridors. These two east-west corridors include Ealing's town centres, Park Royal Industrial Estate and the five Crossrail stations. In addition to the Development (or Core) Strategy, there are development plan documents that specifically cover development sites and the implementation of development policies.

Old Oak and Park Royal Development Corporation

- 4.21 The Old Oak and Park Royal Development Corporation (OPDC) is developing a whole new centre and community for west London. Using the investment in rail infrastructure projects HS2 and Crossrail, new opportunities for development are being created in the area. The Corporation was officially launched on 1 April 2015 and is the Local Planning Authority, master developer and regeneration agency for the 650 hectare site. As a Local Planning Authority, OPDC has a duty to prepare a Local Plan. The Local Plan sets out OPDC's strategy for development within its area and contains the policies that will be used to direct development and determine applications across the entire OPDC area. The first consultation on the Draft Local Plan took place between 4 February and 31 March 2016, with further consultation planned later in 2016.

Joint Strategic Needs Assessment (JSNA)

- 4.22 Ealing Council was given responsibility for public health in April 2013. The Council produced the JSNA to provide clear intelligence on the current and future health and wellbeing needs of the population to inform commissioning plans and strategies. Air pollution is chapter 6 within the JSNA and provides the context for air pollution in the borough (https://www.ealing.gov.uk/downloads/download/3630/joint_strategic_needs_assessment_jsna_2013).

Health and Wellbeing Strategy

- 4.23 The Ealing Health and Wellbeing Strategy 2016-2021 promotes wellness, in its broadest sense, throughout Ealing's population, preventing ill health. Although air quality is not specified, one of

the priority areas of the Strategy is to address the broader social, economic, and environmental factors that can support people's ability to be healthy and make changes to improve their health.

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5 Projects undertaken to inform the Action Plan

Remote Sensing of Exhaust Emissions in Ealing

- 5.1 Defra grant-funded roadside remote sensing surveys of vehicle exhaust emissions were undertaken in Ealing borough and the City of London in 2012⁸. A key development in this work was the direct measurement of NO₂, which had not been possible previously using other remote sensing equipment available in the UK. This provided a very useful dataset on the relationships between pollutants and vehicle technology, Euro class, fuel type, and vehicle dynamics, which has been applied across the UK. The results have had many implications for air quality policy. For diesel cars it was shown that total NO_x emissions, whilst peaking for vehicles manufactured around year 2000, have changed little overall over the past 20 years and in that time new after-treatment technologies have increased the proportion of NO_x that is NO₂ (known as primary NO₂). A comprehensive survey of taxis was also undertaken with results indicating a halving (or more) of NO emissions from London taxis in the transition from Euro 2 to Euro 3 and a significant peak in the emissions of particulate matter at Euro 3.

Scenario Development in Ealing

- 5.2 In 2014 a Defra grant-funded piece of work was undertaken looking at scenario development to inform the evidence base for air quality action planning in Ealing, and add to the national evidence base⁹. A number of scenarios were investigated as follows:

Voluntary scrappage scheme

- 5.3 The scheme assumes that scrapped Euro 5 and older diesel cars will be replaced by a mix of Euro 6 petrol and diesel cars and that scrapped Euro 5 and older vans will be replaced by Euro 6 diesel vans. With a 10% take up of the scheme, total NO_x emissions from cars and vans in 2017 were estimated to reduce by about 5% (relative to the 2017 business as usual scenario) and with a 20% take up, total NO_x emissions are estimated to reduce by about 11%.

Reducing the number of diesel cars purchased

- 5.4 This scenario assumes that some form of policy intervention is introduced to reduce the attractiveness of new diesel cars relative to other fuel types. It assumes that the sales of new Euro 6 diesel cars will be reduced by 25% relative to the base scenario in 2017, and that sales of

⁸ Work undertaken by David Carslaw and Glyn Rhys-Tyler. Available at: https://uk-air.defra.gov.uk/assets/documents/reports/cat05/1307161149_130715_DefraRemoteSensingReport_Final.pdf

⁹ Work undertaken by Glyn Rhys-Tyler. Main report, supporting information and summary can be found at: <https://www.glynrhys-tyler.com/publications.html>

alternative fuel Euro 6 compliant cars (petrol, hybrid) will increase pro rata. With this scenario, it is estimated that total NOx emissions from passenger cars in 2017 reduce by about 1% (relative to the 2017 business as usual scenario).

Policies to reduce idling

- 5.5 Surveys carried out in the Ealing area in 2013 have revealed that between 8% and 40% of journey time was spent stationary, for example waiting at traffic signals. This scenario assumes that if a stop within a journey is more than 10 seconds, the vehicle engine is switched off for the duration of the stationary episode that is longer than 10 seconds. This scenario therefore quantifies the difference between all light duty drivers not switching off their engines and all light duty drivers systematically switching of their engines during stops of over 10 seconds. It is estimated that total NOx emissions from passenger cars and vans in 2017 reduce by up to 8%. This scenario by its nature, explicitly targets hotspot locations.

Introducing an ULEZ in Ealing

- 5.6 A Low Emission Zone already operates in London. Larger vans, minibuses and other diesel vehicles need to meet Euro 3 emissions standards. Lorries, buses, coaches and other specialist heavy vehicles need to meet Euro 4 emissions standards. TfL LEZ regulations currently do not apply to passenger cars. This scenario sets the compliance criteria for an ULEZ as Euro 6 for diesel light vehicles, and Euro 5/6 for petrol light vehicles. This is applied to all passenger cars, vans and taxis. It is assumed that vehicles are replaced on a like-for-like basis, adopting the compliant Euro standard for the ULEZ. This scenario was estimated to reduce total NOx emissions from light vehicles by approximately 52% relative to the business as usual scenario.
- 5.7 These broad brush percentage reductions have been aggregated (along with some assumptions about buses and HGV emissions reductions) and applied to monitoring locations in the hotspot locations. It is recognised that this will hide significant local spatial variation. The results show that even with a significant intervention such as the ULEZ there will still be annual mean concentrations over the annual mean objective. The analysis assumes that Euro 6/VI emissions technology delivers improvements.

Low Emissions Strategy for Acton Goods Yard, Horn Lane, Acton

- 5.8 The Low Emissions Strategy (LES) for Acton Goods Yard, Horn Lane provides a framework for voluntary agreement between the site operators and Ealing Council to reduce emissions and improve local air quality. It aims to secure a commitment from each of the occupiers to take all reasonable steps by providing good practice measures to reduce emissions. These include measures relating to site management, staff training, visitor and HGV driver training, monitoring, inspection and maintenance, water dust suppression, HGVs and mobile machinery, materials

handling and storage and conveyors. It goes on to provide a checklist for occupiers of Acton Goods Yard. The LES is very much complementary to this Air Quality Action Plan.

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6 Development and Implementation of the London Borough of Ealing's AQAP

Consultation and Stakeholder Engagement

- 6.1 In developing/updating the Action Plan we have worked with other local authorities, agencies, businesses and the local community to improve local air quality. Schedule 11 of the Environment Act 1995 requires local authorities to consult the bodies listed in Table 3.1.
- 6.2 The response to our consultation stakeholder engagement is given in Appendix A.

Table 1 Consultation Undertaken

Yes / No	Consultee
Yes	the Secretary of State
Yes	the Environment Agency (on Steering Group)
Yes	Transport for London and the Mayor of London (who will provide a joint response)
Yes	all neighbouring local authorities, in particular the West London Cluster Group
Yes	bodies representing local business interests and other organisations such as Ealing FoE, Residents Groups, Ealing Civic Society, Ealing Public Transport User Group etc.

Steering Group

- 6.3 The Steering group was set up at the outset of the process and a meeting was held on the 15th June 2016 to provide background to the process and discuss measures for inclusion within the Action Plan.
- 6.4 The draft Air Quality Action Plan was then provided to the Steering Group for comment prior to a wider consultation. The Steering Group met again on the 21st September 2016 in order to discuss responses to the consultation and begin to drive the Action Plan forward.

7 AQAP Progress

7.1 Table 2 shows a summary of the measures contained in the London Borough of Ealing's AQAP (2017-2022). It provides a summary of:

- a list of the actions that form part of the plan;
- the responsible individual and departments/organisations who will deliver this action;
- estimated cost to the council;
- expected benefit in terms of emissions and concentration reduction;
- the timescale for implementation; and
- how progress will be monitored.

7.2 Fuller details of the measures included are included in Appendix A1.

Evaluation Approach

7.3 Within Table 2 the actions are evaluated in relation to their expected impact on:

- air quality (i.e. reduction in emissions or concentrations);
- cost; and
- timescale for implementation.

Air Quality Impact

7.4 Air quality impacts have been classified to represent 'low' to 'high' impact. The higher the impact, the greater the improvement in air quality, i.e. the greater the reduction in NO₂ concentrations. For each Action, the expected reduction in annual mean NO₂ concentrations has been determined based on professional judgement, drawing, wherever possible, on experience gained from other studies, as well as the LLAQM Borough Air Quality Action Matrix as published by the GLA. The following classification scheme has been used:

Low: *imperceptible* (a step in the right direction). Improvements unlikely to be detected within the uncertainties of monitoring and modelling;

Medium: *perceptible* (a demonstrable improvement in air quality). An improvement of up to 2 µg/m³ NO₂, which could be shown by a modelling scenario. Improvement is not likely to be shown by monitoring due to confounding factors of the weather; and

High: *significant*. Improvement of more than $2 \mu\text{g}/\text{m}^3$ NO_2 . Can be clearly demonstrated by modelling or monitoring (a significant improvement is likely to be delivered by a package of options rather than by a single intervention).

Cost

- 7.5 The implementation of the measures set out in this Action Plan are dependent on securing a sufficient and consistent level of funding both to support any additional staff that may be required, and to deliver the programme. In line with current London Technical guidance, it is not necessary to carry out a detailed cost-benefit analysis. Rather the aim is to provide a broad indication of costs so that the proposed measures can be ranked according to the cost and the expected improvement to air quality. Costs are represented as follows:

‘Very Low’ cost is taken to be £10K and under;

‘Low’ cost is taken to be £10 - £50K;

‘Medium’ cost is £50 - 500K;

‘High’ cost is £500K - £2 million; and

‘Very High’ cost is over £2 million.

Table 2 Air Quality Action Plan

The actions have been grouped into six categories: Emissions from Developments and Buildings; Public health and awareness raising; Delivery servicing and freight; Borough fleet actions; Localised solutions; and Cleaner transport.

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
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	

Action category	Action ID	Action description	Responsibility	Cost (to Borough)	Expected emissions/ concentrations benefit	Timescale for implementation	How implementation will be monitored	Further information
								conditions will also be investigated. CHP and biomass policies important with district networks a priority.
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.
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	Ongoing	In a qualitative way	Work with the Environment Agency and operators to ensure that

Action category	Action ID	Action description	Responsibility	Cost (to Borough)	Expected emissions/ concentrations benefit	Timescale for implementation	How implementation will be monitored	Further information
					site			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	Development Management in association with Sustainability officers	Very Low	Low	Already being implemented	Log of number of boiler replacement s/ other energy efficiency measures to be kept.	Currently a 2 year programme being implemented.

Action category	Action ID	Action description	Responsibility	Cost (to Borough)	Expected emissions/ concentrations benefit	Timescale for implementation	How implementation will be monitored	Further information
		energy conservation measures.						
Public health and awareness raising	8	Ensure that Directors of Public Health (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.	Public Health	None	n/a	Complete	n/a	DPH already briefed by way of a briefing note and 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 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	Public Health	None	n/a	Complete	n/a	Health protection role

Action category	Action ID	Action description	Responsibility	Cost (to Borough)	Expected emissions/ concentrations benefit	Timescale for implementation	How implementation will be monitored	Further information
		Health by ensuring that at least one Consultant-grade public health specialist within the borough has air quality responsibilities outlined in their job profile						already embedded in Public Health
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

Action category	Action ID	Action description	Responsibility	Cost (to Borough)	Expected emissions/concentrations benefit	Timescale for implementation	How implementation will be monitored	Further information
								organisations. Travel Plans are also often requested under s106 agreements, with WestTrans undertaking the monitoring function.
Public health and awareness raising	15	Promotion of availability of AirTEXT and other services and online tools to minimise personal exposure	Regulatory Services and Public Health	Very Low	Low	Ongoing	Number of subscribers	AirTEXT is a tool that provides forecasts of air quality. LAQN also 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

Action category	Action ID	Action description	Responsibility	Cost (to Borough)	Expected emissions/ concentrations benefit	Timescale for implementation	How implementation will be monitored	Further information
								Mayors Air Quality Fund. Awareness of exposure at schools (i.e. siting of schools away from busy roads).
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 scoring bidders based on their sustainability criteria)	Procurement	Very Low	Low	Already undertaken in some contracts. Investigation as to whether this can be more widespread in next 12 months	n/a	Already done in waste contract. The big issue is in reducing trip distance (and hence emissions).
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	If scheme is expanded.	This is already underway in Ealing Broadway funded in part by Mayors Air Quality fund with BID paying costs. Also

Action category	Action ID	Action description	Responsibility	Cost (to Borough)	Expected emissions/concentrations benefit	Timescale for implementation	How implementation will be monitored	Further information
						work for further freight consolidation will be undertaken in the next 24 months.		MAQF funding similar scheme at 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	23	Increasing the number of	Procurement, and also	Unknown	Low because	Medium term	n/a	Measure

Action category	Action ID	Action description	Responsibility	Cost (to Borough)	Expected emissions/ concentrations benefit	Timescale for implementation	How implementation will be monitored	Further information
actions		hydrogen, electric, hybrid, bio-methane and cleaner vehicles in the boroughs' fleet	Development Management and Regulatory Services		borough fleet is small			currently under discussion regarding the feasibility
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 neighbourho	Ealing have applied for funding in the past but do

Action category	Action ID	Action description	Responsibility	Cost (to Borough)	Expected emissions/ concentrations benefit	Timescale for implementation	How implementation will be monitored	Further information
							ods implemented in Ealing	already implement measures which would be part of LENS anyway.
Cleaner transport	28	Discouraging unnecessary idling by taxis, coaches and other vehicles (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 Acton Goods Yard entrance with more to be provided soon in Horn Lane. Future signage may include health messages.
Cleaner transport	29	Speed control measures e.g. lowering the legal speed limit to 20mph in built up residential areas	Transport	Medium	Low to Medium (note conflicting evidence re: 20mph limit effect on air quality)	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 an aspiration to increase this
Cleaner transport	30	Increasing the proportion of electric, hydrogen 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

Action category	Action ID	Action description	Responsibility	Cost (to Borough)	Expected emissions/ concentrations benefit	Timescale for implementation	How implementation will be monitored	Further information
								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 + electricity	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

Action category	Action ID	Action description	Responsibility	Cost (to Borough)	Expected emissions/ concentrations benefit	Timescale for implementation	How implementation will be monitored	Further information
				costs, but private funding may be an option				Charge points in Ealing in next 12 months.
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.

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	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
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

Action category	Action ID	Action description	Responsibility	Cost (to Borough)	Expected emissions/ concentrations benefit	Timescale for implementation	How implementation will be monitored	Further information
								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.

8 Appendices

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A1 Further Information about Measures Included

Emissions from Developments and Buildings

1. *Ensuring that emissions from construction are minimised.*

During construction, developers and contractors should follow the guidance set out in the Control of Dust and Emissions during Construction and Demolition SPG¹⁰, carry out an Air Quality and Dust Risk Assessment, submit an Air Quality and Dust Management Plan for the construction phase, implement mitigation measures and carry out site monitoring.

2. *Ensuring enforcement of Non-Road Mobile Machinery (NRMM) air quality policies.*

During construction, developers and contractors should apply emission limits as per the Control of Dust and Emissions during Construction and Demolition SPG. The GLA will provide clear emission limits, lists of equipment and guidance in order to make this easier to enforce.

3. *Enforcing CHP and biomass air quality policies.*

Developers should select plant that meets the standards for emissions from Combined Heat and Power and biomass plants, as set out in the Sustainable Design and Construction SPG (Appendix 7). Where boilers are used for heating, ultra-low NO_x boilers should be used.

4. *Enforcing Air Quality Neutral Policies.*

Developers are to design their schemes so that they are at least 'air quality neutral', meeting the minimum emission benchmarks for buildings operation and transport. If the benchmarks are not met after mitigation measures have been implemented, the developer will be required to off-set emissions off site.

In Ealing, along with the rest of London, as these measures are a requirement for developments, they are implemented as routine. It is, however, recognised that it is the enforcement of the policies which is the challenge and it has been suggested that the West London authorities join together to employ someone to enforce, in particular, NRMM policies, but to some extent checking that other policies are adhered to once the development is either being constructed, or built. The feasibility of this approach will be investigated, and taken forward if possible.

¹⁰ <https://www.london.gov.uk/what-we-do/planning/implementing-london-plan/supplementary-planning-guidance/control-dust-and>

5. Ensuring adequate, appropriate and well located green space and infrastructure is included in new developments.

Green space within new developments can provide a way of setting the building back from the kerbside (hence reducing exposure of residents) or provide a barrier between roads and new developments (for example in the case of trees, hedges and green walls). When providing amenity space within new developments, air quality should be considered and these areas should be set back from pollution sources. There is a chapter in the Core Strategy for Ealing on green space. In terms of implementation, there has been more success with larger developments with regard to incorporating green space.

6. Ensuring that Smoke Control Areas are fully promoted and enforced.

A Smoke Control Area is a zone in which you can't emit smoke from a chimney unless you are burning an authorised fuel or using an exempt appliance such as a burner or stove. This is not seen as a major issue in Ealing borough and hence all the Smoke Control Areas will be retained, but will not be proactively promoted and enforced. Regulatory Services continues to provide routine advice on exempt appliances and also responds to smoke and odour nuisance complaints where an exempt appliance is not being operated correctly or that requires maintenance. The dark smoke provisions of the Clean Air Act 1993 are also enforced.

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.

RE:NEW is the Mayor's award-winning programme to help make London's homes more energy efficient and RE:FIT is a programme for retro-fitting non-domestic public sector buildings. Both are already being implemented on a 2-year programme. Both programmes have delivered substantial carbon and energy savings in London, and this energy reduction will also have positive impacts for NOx emissions.

Public Health and Awareness Raising

There are a number of measures which involve public health, which have been grouped together below and have either already been undertaken, or are being taken forward jointly between Regulatory Services and Public Health departments.

8. Ensure that Directors of Public Health (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.

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.*
10. *Director 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.*
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 outlined in their job profile.*
12. *Director of Public Health to sign off Statutory Annual Status Reports and all new Air Quality Action Plans.*
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.*
14. *Engagement with organisations.*

Engagement with organisations is more challenging. This is largely being undertaken by a WestTrans team who offer advice on voluntary travel plans for business. Businesses are also engaged through the s.106 process where relevant.

15. *Promotion of Availability of AirTEXT and other online tools and services for reducing personal exposure*

AirTEXT is a tool that provides forecasts of air quality for the present day and following 2 days. The forecasts are provided by CERC with concentrations of four pollutants calculated. Schemes such as AirTEXT have the potential to enable people within the borough to minimise their individual exposure to air pollutants. Behavioural change to potentially reduce emissions could also be encouraged. Currently the messaging is national health advice, which can't be adapted for local circumstances. Ealing Council will continue to provide the service for users within the borough. The Council also supports the London Air Quality Network, which provides a wealth of online air quality information and forecasting, including live data from the Council's automatic air quality monitoring stations.

- 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.*

STARS – Sustainable Travel: Active, Responsible, Safe – is an accreditation scheme for schools, nurseries and colleges to inspire young Londoners to travel sustainably, actively, responsibly and safely. This is already being implemented across Ealing with planning conditions also requiring STARS to be implemented.

17. Air Quality in Schools

There is some funding through the LIP for School Travel Plan advisor posts to deliver the school travel plan programme. This measure at present is therefore being delivered through these posts. There is a distinction between air quality at schools (i.e. caused by additional traffic potentially idling outside of schools) and that of having schools in an already polluted area (i.e. close to heavily congested road). Both of these issues are being addressed to some extent through the planning system, particularly with regard to exposure of prospective pupils. The School Travel Plan service also encourages schools in the borough to sign up to the Safer Parking Promise scheme, which encourages better parking and school run parent driver behaviour, including a commitment to turn off engines while waiting.

Delivery Servicing and Freight

- 18. Update of local authority Procurement policies to include a requirement for suppliers with large fleets to have attained silver FORS accreditation.*

FORS is an over-arching scheme that encompasses all aspects of safety, fuel efficiency, economical operations and vehicle emissions. It is a voluntary scheme that helps improve operators' performance in each of these areas. Procurement services are currently investigating the impacts on costs for suppliers. There is a potential for this to be a more onerous requirement for small suppliers and hence would disproportionately disadvantage them. Procurement services are therefore investigating this measure further before making a decision on whether to implement it.

- 19. Update of Procurement Policies to ensure sustainable logistical measures are implemented (and include requirements for preferentially scoring bidders based on their sustainable criteria)*

The impact to carbon emissions of the supply chain is well documented, but the resulting emissions of NO_x and PM₁₀ are often not considered in procurement policy decisions. The public sector is a major consumer and procures, indirectly, a significant number of road transport vehicles. There is considerable scope to drive down emissions through the adoption of fit-for-purpose procurement strategies, including sustainable logistical measures which can also offer cost savings to fleet operators. There have been some tenders

within Ealing which have included sustainable logistical measures as part of the process. Ensuring this is included within other relevant tenders will be taken forward.

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.

Consolidation is the process of rearranging and combining shipments to reduce the number of deliveries you make. The aim is to reduce the number of vehicles carrying freight entering a city by making sure their carrying capacity is fully used. This brings with it cost savings and environmental benefits; it helps to reduce congestion and associated emissions, as well as making the road safer for all users. This is already being implemented at Ealing Broadway, and will be implemented in the Park Royal area which is home to more than 2,000 businesses and over 40,000 jobs and suffers particularly poor air quality due to its proximity to the A40 and A406 road corridors.

The Council will use the Mayor's Air Quality Fund Round 2 to joint fund an initiative which aims to replicate the success of the Ealing Broadway Air Quality exemplar waste collection initiatives. The Ealing Broadway Scheme successfully increased the numbers of businesses using centrally managed recycling and pest control services and the introduction of a food waste recycling service. This led to a reduction of 8,650 vehicle trips per year.

21. Virtual Loading Bays and priority loading for ultra-low emission delivery vehicles.

Virtual Loading Bays allow the user to book kerb space online for loading and unloading at a particular time and place. This pre-booked space becomes a 'Virtual Parking Bay'. This allows drivers to load and unload in close proximity to their delivery point without causing congestion and without the risk of receiving a Penalty Charge Notice. Through using GPS and sensory technology, this initiative could go even further and could designate loading bays as priority access for ultra-low emission delivery vehicles. Virtual Loading bays have been investigated by parking services in the past, but not taken forward due to issues of practicality. This option may be revisited in the future, but will not be implemented imminently.

Borough Fleet Actions

22. Join the Fleet Operator Recognition Scheme (FORS) for the borough's own fleet and obtain Gold Accreditation.

FORS is an over-arching scheme that encompasses all aspects of safety, fuel efficiency, economical operations and vehicle emissions. Gold accreditation is only awarded to exceptional operators who have met exacting targets. FORS gold operators will actively promote the FORS Standard to their supply chain and produce a case study documenting their progression through to the top level of accreditation. Ealing's own fleet is not large, with Parks having the largest fleet. Other boroughs are FORS accredited with City of

London having completed the FORS audits for silver and gold standards. 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.

23. Increasing the number of hydrogen, electric, hybrid, bio-methane and cleaner vehicles in the borough's fleet.

The first step would be to join FORS (action 22 above) and then through the FORS programme to undertake an audit of the current fleet. Any alternatively fuelled vehicles could act as a demonstrator to other businesses and the general public (through events etc.) and hence assist in a wider modal shift to alternatively fuelled vehicles. The provision of an appropriate refuelling infrastructure for the alternatives fuels concerned would also be required.

24. Accelerate the uptake of new Euro 6/VI vehicles in the borough fleet.

In 1992 the European Union introduced new emissions standards (Euro standards) for vehicles. These have progressively tightened limits for the main atmospheric pollutants. Euro VI has been the standard for Heavy duty vehicles since the end of 2013 and for cars. Euro 6 came into force in September 2014. Capital costs for introducing Euro 6/VI vehicles is potentially high.

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

Smarter Driving or eco-driving can be an easy way to reduce fuel consumption from road transport so that less fuel is used to travel the same distance. In the last decades, engine technology and performance of cars has improved rapidly, while most drivers have not adapted their driving style. Reported average fuel savings following training are usually over 10%, representing a potential emissions and cost saving to organisations. Within the Council, eco-driving training was undertaken 2 years ago, but this will be re-visited in light of this action plan.

Localised Solutions

26. Green Infrastructure.

Examples of green infrastructure include pocket parks, planting of greenery along main roads and in town centres, green roofs, walls etc. The correct choice of species and location is important in order to maximise any air quality benefits as in some locations greenery could increase the 'canyon' effect, resulting in lower dispersion of pollutants. In Ealing borough green infrastructure is being implemented through planning policies to encourage green roofs, green walls and Sustainable Urban Drainage Systems. Part of

a Defra Air Quality Grant for Horn Lane is being used to undertake some landscaping with a view to reduce particulate concentrations. This implementation will continue.

27. Low Emission Neighbourhoods (LENs) as proposed by TfL's Transport Emission Road Map.

TfL Transport Emissions Roadmap proposed tackling local air pollution hotspots using a package of targeted measures or locations, which might not necessarily have high local air pollution, but have high trip generation and therefore the ability to influence transport emissions in the wider area. This concept was termed Low Emission Neighbourhoods. The basic concept is that chosen area is surveyed in detail to understand how it functions; the numbers, types, reasons for trips, destination and origin of trips and how full vehicles are. Strong measures are then put in place to coordinate and consolidate servicing, reduce vehicle use and encourage the use of cleaner vehicles. London Borough of Ealing has applied for funding in the past for LENs and will look at future funding opportunities to take this forward.

Cleaner Transport

28. Discouraging unnecessary idling by taxis and other vehicles (e.g. through anti-idling campaigns or fines).

Currently it is an offence to leave a vehicle engine idling unnecessarily whilst parked (under the Road Traffic (Vehicle Emissions) (Fixed Penalty) (England) regulations 2002. How proactively this legislation is enforced is a matter for the local authority in question. In Ealing borough, there will be some anti-idling signs in Horn Lane (as part of a wider project to improve air quality in that area) and at Haven Green it is written into bus contracts that they shouldn't be idling. It is proposed that the street enforcement teams are approached about including anti-idling on their rounds. It is considered at present not to be cost effective to include Fixed Penalty Notices, but instead just to raise awareness of idling.

29. Speed Control Measures.

Research on the direct air quality impacts of lowering speed limits to 20 mph seem to indicate that concentrations will neither rise nor fall dramatically. The main benefits of 20 mph zones are considered to be related to road safety and enhancing cyclist and pedestrian experience and hence encouraging modal shift to more active travel. In Ealing, there are already a number of 20 mph area wide speed limits in operation and there are aspirations to extend these further.

30. Increasing the proportion of electric and hydrogen vehicles and low emission vehicles in Car Clubs.

Car club members have access to a car when you need one, but without the inconvenience and cost of owning one. They can reduce congestion, reduce parking pressure, reduce pollution and encourage other

sustainable transport modes. Ealing has 91 Car Club bays across the borough and 3 companies operating them. There is already a target in Ealing to incorporate Electric Vehicles into the Car Club fleet and this is being progressed. The GLA is also working towards overcoming the challenges of introducing EVs into car club fleets (namely charging infrastructure, ensuring the reliability of finding a vehicle fully charged, and supporting customers to be confident in driving and recharging EVs).

31. Very Important Pedestrian Days (e.g. no vehicles on certain roads on a Sunday) and similar initiatives.

In Ealing borough there are 25 different areas registered under the PlayStreet initiative. The PlayStreet is a 2-3 hour, stewarded road closure for children to play out safely in the street once a month. Although unlikely to improve air quality as an annual average concentration, they increase the awareness of car-free environments.

32. Free or nominal parking charges at existing parking meters for zero emission cars.

This provides a significant incentive for people to choose zero or low emission vehicles, especially where parking charges are high. This could be implemented in a relatively simple and low cost way (by providing exemption permits). This policy could be time limited. This measure is currently under discussion regarding the feasibility of being taken forward.

33. Free or low cost residential parking permits for zero emission cars.

Islington have had a tiered parking permit system since 2008 where parking is completely free for EVs. Other boroughs also offer free or very low cost residents parking permits to EVs. This could be used as part of a package of measures to help drive the uptake of EVs. This measure is currently under discussion regarding the feasibility of being taken forward.

34. Surcharge on diesel vehicles below Euro 6 standards for Residents and Controlled Parking Zone permits.

This has been successfully implemented by Islington as part of a wider parking strategy based on emissions of vehicles. This measure is currently under discussion regarding the feasibility of being taken forward.

35. Installation of residential electric charging points.

There are complexities involved in installing residents charge points but they are also crucial in stimulating the uptake of cleaner vehicles because in London two thirds of households do not have access to off street parking. Recharging at home, at night seems to be natural recharging behaviour for plug in drivers. Westminster is taking the following approach to resident charge point installation, which is proving to be very effective:

- Use visitor parking bays, rather than residential bays, where possible. This minimises local resistance, although it does have an impact on council revenues;
- When a ratio of 3 cars to 1 charge point is reached, look at installing an additional residential EV bay on the street; and
- Use an app based booking system which restricts the amount of time a resident can spend in a residential EV bay. Following the allotted time, the vehicle must move to a standard residential bay.

In Ealing, residential charging points are being implemented as part of new developments. There is 75% funding available from the Office for Low Emission Vehicles (OLEV) which is subject to a maximum cap.

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).

Rapid chargers enable batteries to be charged much more quickly, enabling longer journeys without the need for lengthy recharging stops. The government is committed to building a national charge point infrastructure and funding has been made available for this. In Ealing there are charging points at 3 car parks which are managed by Source London. Options for taxis, and commercial vehicles are currently under consideration.

37. Reallocation of Road Space; reducing parking in accessible destinations and/ or restricting parking on congested high streets and busy roads to improve bus journey times, cycling experience and reduce emissions caused by congested traffic.

The Local Implementation Plan includes a number of specific schemes which work towards reallocation of road space, for example the Sudbury Village scheme. This is a tri-borough scheme (Ealing, Harrow and Brent) encompassing two stations (Sudbury Hill and Sudbury Hill Harrow Station) and the parade of shops to the south. A series of interventions such as realignment of the carriageways, rationalisation of parking, and relocation of bus stops means the project will enable a greater sense of space, ease congestion, improve access for all users, but especially pedestrians and cyclists. Likewise, the ongoing project at Ealing Broadway enhances pedestrian and cycle routes from surrounding areas to the station and improves cycle parking among a range of other improvements. These sorts of schemes will continue to be identified and implemented through the LIP, and reported via LLAQM to the GLA, as well as through LIP processes.

38. Provision of Infrastructure to support Walking and Cycling

One of the central themes of the Local Implementation Plan is the encouragement of Walking and Cycling. With regards to walking, key actions for the council are to encourage more walking through school and workplace travel planning, implement improvements of pedestrian facilities through multimodal corridors,

particularly in and around town centres, and incorporate walking routes into major schemes e.g. improving town centres, station access etc. In relation to cycling, the key actions for the Council include introducing significant cycle infrastructure developed as part of the 'Mini-Holland' bid, promoting the on-road cycle training programme, installing new secure cycle parking stands near stations and town centres and introducing cycling hubs to promote and support cycling in strategic locations throughout the borough. There are also plans to expand the off-road cycle route network, encourage more cycling through school and workplace travel planning, and broader education and awareness campaigns and promote a campaign with the health professionals to provide travel advice to health residents with health issues become more active.

DRAFT

A2 Response to Consultation

Table A2.1 Summary of Responses to Consultation and Stakeholder Engagement on the AQAP

Consultee	Category	Response
GLA (Poppy Lyle, Senior Policy and Projects Officer (Air Quality)))	Public Body	Need to firm up on timescales of implementation. Include specific measures for Air Quality Focus Areas
GLA (Andy Cross, Public Health Registrar)	Public Body	General endorsement of the document. Suggested some specific additions to policy section and specific text changes.
Environment Agency (David Rushton)	Public Body	General support for the document. Specific action requested (which has been added).
Public Health England (Adrienne Dunne, Specialist Environmental Public Health Scientist)	Public Body	General letter of support
London Borough of Hillingdon (Val Beale, Air Quality)	Public Body	Addition of measure to support regional working.

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