Air Quality Action Plan
2017 - 2022

LONDON BOROUGH OF
RICHMOND UPON THAMES

Contents

London Borough of Richmond upon Thames – Air Quality Action Plan

The Council's Commitment to Air Quality

Air pollution is recognised as a major contributor to poor health with more than 40,000 premature deaths attributed to poor air quality across the UK each year, and an associated annual health cost to society estimated to be around £15 billion. Air pollution is associated with a number of adverse health impacts; 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.

Air quality (AQ) has been identified as a priority both nationally and within London where pollution levels continue to exceed both EU limit values and UK AQ Standards. Pollution concentrations in the London Borough of Richmond upon Thames continue to breach the legally binding AQ limits for both nitrogen dioxide (NO_2) and Particulate Matter (PM_{10}). The air quality monitoring network run by the London Borough of Richmond upon Thames has shown that the UK annual mean NO_2 objective (40µg/m3) continues to be breached at a number of locations across the borough including Richmond town centre, Twickenham, Barnes, Chalker's Corner, Hampton Hill, Hampton Wick, Sheen, Kew, Teddington and Whitton. In 2016, NO_2 concentrations were measured to be in excess of the annual mean AQ objective at 75% of the monitoring sites within the borough. In five of those locations, after distance correction, the NO_2 concentration also exceeded the UK 1-hour AQ objective (60µg/m^3) which indicates a risk not only to people living in that area but also for those working or visiting the area. These sites were George Street, Hill Street, The Quadrant and Red Lion Street in Richmond and York Street, Twickenham.

To illustrate the scale of effort likely to be required to meet the AQ objectives in Richmond, the monitoring location with the highest measured NO_2 concentration in 2016 was George Street, Richmond at 96µg/m3. Based on this being a worst-case location, calculations indicate that it will be necessary to reduce emissions from traffic at this location by 73% to achieve compliance with the annual mean NO_2 objective[1].

Pollution in Richmond 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 comes from outside of London and even the UK. Obviously for these sources the council has limited control; however, local sources are primarily from road transport and from development/buildings.

There are a number of UK and London focused initiatives, both ongoing and planned, which will have an impact on AQ within Richmond, but it is clear that local action is also required to ensure that the health and wellbeing of local communities is protected. This Air Quality Action Plan identifies a number of measures through which emissions can be reduced at a local level.

In order to achieve the necessary improvement to air quality, there needs to be firm commitment and continued cooperation across the relevant departments and services within the council to ensure that actions are implemented effectively and efficiently. We will also continue to work collaboratively with neighbouring authorities, the Greater London Authority and Transport for London in pursuing shared AQ improvement initiatives and responsibilities.

The London Borough of Richmond upon Thames is committed to reducing the exposure of people in the borough to poor air quality in order to improve health. This updated Air Quality Action Plan identifies the London Borough of Richmond upon Thames' priorities for tackling air quality over the next 5 years and is supported by the departmental Heads of Service for Environmental Health, Transport, and Planning; the Director of Public Health and Cabinet members.

[1] The required percentage reduction of local emissions is expressed in terms of NOx from local road traffic. The full calculation is provided in Appendix D.

Foreword by Cabinet Member for Environment, Business, and Community – *Pamela Fleming*

Air Quality and local pollution is one of the most important challenges we face as a local authority, evidence is now clear of the health implications for people in our borough, in particular those suffering from underlying medical conditions.

As a local authority we have a duty to try to address pollution in our borough, work closely with external partners inside and outside the authority to tackle this problem head on. This complex problem needs to be resolved against a backdrop of investing in a vibrant and financially successful borough with an increasing population.

I think it's very important to highlight that poor air quality is a responsibility of us all, not just something that governments and authorities are responsible for. Almost everything we do impacts on local air quality; from the cars we drive, how we use them, the heating and insulation in our homes, our holidays and travel and even the way in which we use next day deliveries for non-urgent good and services.

It is important that as well as the actions outlined in this plan that people understand their role in helping to resolve this most important problem.

As part of the consultation I would welcome responses from residents, schools, organisations and community groups about what they can do to help address poor air quality or help us identify action they can take to compliment the Council's action plan.

I am also keen to ensure that this plan is a 'live and purposeful' document and will ensure that we form a long term steering group including Councillors, Council officers and business and residents groups, where all voices can be heard.

I warmly welcome your feedback and your help in working towards better air quality for our borough.

Foreword by Director of Public Health – *Houda Al Sharifi*

Poor air quality is an issue of increasing concern in London, as it is in major cities around the world. The current levels of air pollution in the UK are damaging everyone's health: aggravating existing health conditions, causing new health problems, and reducing life expectancy across the board.

In Richmond, as everywhere else in London, the biggest air pollution culprit is the vehicles on the Borough's roads. We aren't even safe when we're inside them – there's strong evidence that we are more exposed to pollution inside our cars than walking and cycling on the same polluted roads. When we take a decision to drive, we don't only add to poor air quality for those outside our vehicles, we expose ourselves to it too.

It's therefore vitally important for those of us who can to reduce our car journeys and be more active and less dependent on private vehicles – cycling, walking and taking public transport wherever possible. In doing so, we stand to realise numerous other benefits, such as reducing obesity levels, taking more physical activity, reducing traffic-related noise pollution and the numbers of traffic injuries on our roads, and improving our social connectedness and sense of community. All of this also stands to benefit our mental wellbeing and make for a happier, healthier Richmond.

1. Introduction

This Air Quality Action Plan (AQAP) has been produced as part of our duty to London Local Air Quality Management statutory process and in recognition of the legal requirement placed upon the local authority to work towards air quality objectives under Part IV of the Environment Act 1995. It outlines the action we will take to improve air quality in Richmond between 2017 and 2022 and replaces the previous action plan which ran from 2002 - 2017. Highlights of successful projects delivered through the past action plan are included in Appendix C.

Air quality monitoring and dispersion modelling data which provide information on the nature and extent of the air pollution problem in the borough is presented in Appendices D and E. This includes information supplied from the London Atmospheric Emissions Inventory and contains maps of pollution concentrations for NO_2, PM_{10} and $PM_{2.5}$ for the borough, together with source apportionment charts which can be used to identify the relative proportions of local emission sources.

This report outlines the actions that the London Borough of Richmond upon Thames will deliver for the period 2017-2022 in order to reduce concentrations of, and exposure to, pollution thereby positively impacting on the health and quality of life of residents and visitors to the borough. 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 buses), and so we will continue to work with and lobby regional and central government on policies and issues beyond our influence.

2. London Borough of Richmond upon Thames - Air Quality Priorities

The Mayor's AQ Strategy for London was being revised at the time this document was being prepared with the new AQ Strategy incorporated into the overarching London Environment Strategy. The Mayor has a legal duty to set out the policies and proposals in the strategy to achieve compliance with the required AQ standards as soon as possible.

The London Local Air Quality Management (LLAQM) framework sets out the actions London boroughs should be taking to achieve compliance as "quickly as possible". The draft London Environment Strategy identifies a number of policies including Policy 4.2.4 which states 'The Mayor will work with the government, the London boroughs and other partners to accelerate the achievement of legal limits in Greater London and improve air quality.' The Policy acknowledges that the boroughs have an important role to play in addressing local pollution and identifies the following key levers available to them:

- Emissions-based parking charges
- Reducing pollution from new development through the planning system
- Improving public realm for walking and cycling
- Rolling out targeted measures at pollution hotspots
- Supporting infrastructure for fuelling zero emission vehicles.

This AQAP is updated in line with new GLA guidance to reflect changes in local air quality management (LAQM) and to ensure that local measures are current, effective and sufficiently targeted to address the GLA AQ focus areas and any other AQ 'hot-spots' identified within the borough.

There have been a number of significant air quality actions implemented at both local level and by the Greater London Authority and Transport for London since publication of the London Borough of Richmond upon Thames' first AQAP, including implementation of the Low Emission Zone; the introduction of the Sustainable Design and Construction and Control of Dust and Emissions Supplementary Planning Guidance; highway and public transport improvements and investment in a wide range of sustainable transport initiatives. Many of these are likely to have had an impact on air quality within the borough; however, despite these improvements, air quality in the borough remains a significant challenge in a number of locations.

The Local Air Quality Management system for London (LLAQM) acknowledges that boroughs cannot solve the problem of air quality alone but that they do have a central role to play in improving air quality through the use of key levers such as parking, planning and local roads together with very specific knowledge of the communities that they serve.

The GLA Technical Guidance (LLAQM.TG16) states that it is important that the updating process focuses on the effective implementation and delivery of measures developed to address the specific local air quality issues, and are part of an integrated package of measures linking with other key policy areas notably:

- Land-use planning and sustainable development;
- Transport planning, promoting sustainable transport, local transport management, integration with Local Implementation Plans (LIPs);
- Climate change policies in relation to carbon management and reduction of greenhouse gas emissions;
- Low Emission Strategies providing an integrated approach to promoting emission reduction strategies covering both air quality and climate change;
- Public Health Outcomes (PHO) policy areas, to promote health and wellbeing; and
- Education programmes to promote health and wellbeing and also the principles of sustainability.

The source apportionment data identifies road transport as contributing more than 50% of the overall emissions of nitrogen oxides (NO_x) and particulate matter (PM) within the borough. The dispersion modelling and focus area maps (Appendix D) also identify the areas experiencing the highest concentration of pollutants where there is relevant exposure. In the majority of cases these areas extend along the key transport links where there are high volumes of traffic (both local and through traffic). The monitoring location with the highest measured NO_2

concentration in 2016 was George Street, Richmond at 96µg/m^3. Calculations indicate that it will be necessary to reduce emissions from traffic at this location by 73% to achieve compliance with the annual mean NO_2 objective; see Appendix D for full calculation.

The London Borough of Richmond upon Thames is limited in how much it can achieve directly in reducing traffic on the TfL red routes through the borough, but there is potential to include AQAP measures to identify and address local causes of congestion and to lobby the GLA and TfL to extend the principles of the planned Ultra-Low Emission Zone to the GLA focus areas and local pollution 'hot-spots' within the borough where there would be an identified benefit.

The existing AQAP is specifically referenced in the London Borough of Richmond upon Thames Local Implementation Plan (LIP2) (2011 – 2031) which incorporates seven key objectives, three of which are particularly pertinent to air quality:

- Objective 2: To improve the local environment and quality of life for all residents;
- Objective 4: Enhance travel choice and reduce congestion;
- Objective 5: Develop a transport system that is resilient and reflective of local needs and aspirations.

The LIP includes measures to reduce congestion through traffic management initiatives, improve cycling/walking infrastructure and generate associated promotional events, provide additional electric vehicle charging infrastructure and promote expansion of car club facilities. It is important that the updated AQAP is integrated into the LIP and that the delivery plan reflects the need to reduce emissions from traffic sources in order to improve AQ.

This revised AQAP incorporates a range of measures, some of which build on existing initiatives, but also new measures which reflect more recent developments in emission reduction and pollution control.

One of the key measures to reduce emissions from traffic in the AQ Focus Areas and 'hotspots' is the proposed 'Detailed assessment of traffic management solutions' (AP measure 20). This will require additional detailed traffic and air quality modelling assessments to evaluate the benefit of potential junction improvements, re-routing options, improved signalling, and use of parking restrictions in the GLA focus areas and in AQ 'hot-spots'. The assessment will be used to prioritise appropriate traffic management scenarios based on air quality benefit, feasibility and cost-effectiveness.

The London Borough of Richmond upon Thames is also keen to exploit the potential benefits of 'pollution-specific' green infrastructure as a means of reducing exposure in sensitive locations and to review additional opportunities to improve air quality and sustainable transport options associated with schools within the borough. The AQAP also explores opportunities to reduce emissions from development sites, from delivery and service vehicles and to expand electric vehicle charging infrastructure through the Local Implementation Plan and Supplementary Planning Guidance.

It is recognised that the predicted increase in population across London and the requirement for additional housing and infrastructure across the region is likely to have an impact on traffic growth and air quality. To manage and minimise the impact of these changes, the updated AQAP includes adoption of Supplementary Planning Guidance to inform developers on the impact of development on air quality, and ensure that approved schemes include effective mitigation and maximise the opportunity to improve infrastructure for sustainable transport.

The London Borough of Richmond upon Thames is also leading a partnership working with 14 other boroughs to develop a Non-Road Mobile Machinery (NRMM) 'toolkit' to enable contractors to evaluate and minimise emissions from NRMM sources.

It is important to build on existing successes generated by the previous AQAP. Emissions from school traffic and the benefits of active travel for school children has been the focus of the existing TfL STARS project and the CleanerAir4Schools project funded through the Mayor's Air Quality Fund. The updated AQAP includes a package of measures designed to continue the work with schools, parents and pupils with the objective of further improving awareness of air quality and optimising parents' and children's desire and opportunity to adopt sustainable travel options.

To ensure we are protecting our children within our schools, we will be carrying out air quality audits in and around the schools subject to the highest levels of pollution. This action will help determine practical steps to minimise the impact of poor air quality on our children.

Key Priorities for the updated AQAP 2017 - 2022

- Establish and maintain an effective air quality steering group to ensure that the implementation of AQAP measures is coordinated effectively between relevant council services and external partners.
- To identify the key causes of traffic congestion within our AQ Focus Areas and pollution 'hotspots' and to determine effective measures for improving traffic flow through those areas using detailed air quality and traffic management modelling tools;
- To evaluate the air quality benefits and feasibility of introducing Clean Air Zones (CAZs) in the areas of the borough identified as having the poorest AQ;
- To provide guidance to developers on the impact of development on air quality and ensure that approved schemes include effective mitigation and maximise the opportunity to improve infrastructure for sustainable transport options;
- Encourage the uptake of low emission vehicles through expansion of the electric vehicle charging infrastructure;
- To formalise anti-idling enforcement in order to minimise emission from vehicles around key locations such as schools, taxi-ranks, AQ focus areas and hot-spots;
- To continue to work with schools, parents and students to improve awareness of air quality and to optimise parents' and children's desire and opportunity to adopt sustainable travel options;
- To review the research pertaining to air quality benefits of 'green infrastructure' and to implement appropriate schemes of planting in relevant locations;
- To continue to review our air quality monitoring network to ensure that it effectively identifies areas of poor air quality and provides accurate data to enable us to evaluate air quality trends and the impact of AQAP measures.

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 as with new partners as we deliver this new action plan over the coming years.

3. Air Quality Action Plan 2017 - 2022

The following Table (1) contains:

- 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;
- How progress will be monitored and reported.

Table 1: Air Quality Action Plan 2017 - 2022

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; Cleaner transport; and Climate change and Sustainability.

Action category	Action ID	Action description	Responsibility	Cost	Expected emissions/ concentrations benefit	Timescale for implementation	How implementation will be monitored	Further information
Emissions from developments and buildings	1	Include air quality as a key standalone measure in the borough's Local Plan	London Borough of Richmond upon Thames - Planning Dept., EH Department	£0	1 (Benefits potentially significant but not quantifiable)	2017/18	- Local Plan adopted - AQ Measures identified and conditions being set	Local Plan is currently subject to consultation and review.
Emissions from developments and buildings	2	Adoption of AQ Supplementary Planning Guidance to ensure emissions from new development is minimised and effective mitigation is integrated in scheme design.	London Borough of Richmond upon Thames - Planning Dept., EH Dept.	£6K	1 (Benefits potentially significant but not quantifiable)	2017	- SPG adopted - Number of schemes assessed - Additional infrastructure achieved	AQ SPG to require air quality mitigation and community sustainable transport measures to be delivered through planning condition and s.106 planning agreements.

Emissions from developments and buildings	3	Enforcement of Non Road Mobile Machinery (NRMM) air quality policies	London Borough of Richmond upon Thames - EH Dept.	£10K	**1**	2017/18	- Study conclusions accepted - NRMM toolkit developed - Number of sites checked - Reduction in emissions of NO_x/ PM_{10}	NRMM emissions study to identify compliant machinery & develop checklist for contractors. NRMM site visits to enforce compliance
Emissions from developments and buildings	4	Low Emission Construction Partnership (LEAP)	London Borough of Richmond upon Thames	Unknown	**2** (Benefits potentially significant but not quantifiable)	2018/22	- AQ measurement data (where available) - Number of measures adopted - Number of emission standards established - Number of developers/ developments signed up to scheme	Develop South London Low Emission Construction Partnership in line with London LEAP (LLEAP). LLEAP objectives are: ▪ Help the construction industry to understand its impact on local air quality. ▪ Encourage the uptake of 'best in class' pollution reduction (abatement) measures. ▪ Improve pollution monitoring and make this data available for construction sites in London. ▪ Help to fund 'best in class' abatement measures at construction sites. ▪ Evaluate the cost effectiveness of pollution abatement techniques. Linked with NRMM project (Action 3)
Emissions from developments and buildings	5	Map Focus Areas & AQ 'hot-spots' on planning GIS maps	London Borough of Richmond upon Thames - Planning Dept. IT/GIS Dept.	5K	**2** (Benefits potentially significant but not quantifiable)	2017	- Maps updated - Number of applications within AQ 'layer' identified for assessment	Incorporate AQ 'layer' onto planning mapping system to identify and prioritise areas for planning control linked to AQ SPG.

Emissions from developments and buildings	6	Enforcing CHP (combined heat and power) and biomass air quality policies	London Borough of Richmond upon Thames – EH Dept.	6k	2 (Benefits potentially significant but not quantifiable)	2017/22	- Identify relevant installations and incorporate AQ controls into planning conditions - Enforce relevant planning conditions	Domestic and commercial heating appliances collectively contribute up to 20% of total NO_x concentrations in Richmond. CHP and Biomass boilers to be evaluated in terms of air quality as well as carbon emissions.
Emissions from developments and buildings	7	Enforcing Air Quality Neutral policies	London Borough of Richmond upon Thames - Planning Dept., EH. Dept.	£0	2	Ongoing	- Number of assessments received - Number of assessments accepted	Enforce air quality neutral requirement through planning condition/ enforcement.
Emissions from developments and buildings	8	Ensure that Smoke Control Zone fully promoted and enforced	London Borough of Richmond upon Thames - EH Dept.	£10K	2	Ongoing	- Number of incidents detected - Number of enforcement notices issued	Restrictions to be publicised via council website and local campaigns to increase awareness of impact of solid fuel/ wood burning on air quality and restrict bonfires.
Emissions from developments and buildings	9	Encourage BAA to take action to reduce emissions at Heathrow from surface access traffic, servicing traffic, aircraft and other sources	London Borough of Richmond upon Thames	£0	2 (Benefits potentially significant but not quantifiable	Ongoing	- Review all consultation documents - Assess impact of proposed third runway on local emissions/ AQ	The London Borough of Richmond upon Thames remains concerned that development of the third runway will increase emissions locally and will continue to oppose increased airport capacity at Heathrow on grounds of the potential dis-benefits to air quality in the borough.
Public health and awareness raising	10	Public Health Policy	London Borough of Richmond upon Thames – Public Health Dept., EH Dept.	£0	n/a (Benefits potentially significant but not quantifiable)	Ongoing	-Updated AQAP and ASR signed off by DPH. - Health & Wellbeing Strategy includes AQ as key theme. - Joint Strategic Needs Assessment (JSNA) to be regularly updated on air quality impacts on the population.	Director of Public Health (DPHs) to be kept fully briefed on air quality status. All AQAP feasibility studies to include assessment of $PM_{2.5}$ emission reduction potential. All adopted AQAP measures to evaluate impact on PHOF indicators and Public Health teams to support engagement with local stakeholders (businesses, schools, community groups and

							- DPH retained as member of AQ steering group.	healthcare providers).
Public health and awareness raising	11	Engage with Head of Transport to identify AQ opportunities and risks related to transport in the borough.	London Borough of Richmond upon Thames - Transport Dept., EH Dept.	£0	n/a (Benefits potentially significant but not quantifiable)	Ongoing	- Provide AQ briefing for dissemination to Transport team. - Identify opportunities to integrate AQAP measures into LIP2 - Evaluate risks from transport in all AQ feasibility studies - Engage Head of Transport as key AQ steering group member.	Important that AQAP measures are assessed to identify risks and opportunities to transport. Head of Transport support important for implementing local transport management measures and for provision of traffic data and modelling of options.
Public health and awareness raising	12	Promotion and increased use of Love Clean Air website (south London cluster)	London Borough of Richmond upon Thames – EH Dept., Public Health Dept.	£3K	3	Ongoing	- Regularity of website updates - Number of website 'hits' - Increased feedback on AQ issues. - Positive feedback on user surveys	Optimise website potential by providing regular updates on local AQ initiatives including anti-idling policies, wood burning, bonfires etc.; promote availability of AirText notification service; invite contact from local residents to identify local AQ issues/ opportunities; circulate consultations and publicise events.
Public health and awareness raising	13	Air quality at schools – STARS review	London Borough of Richmond upon Thames - School Travel Plan Coordinator	£0	3	Ongoing	- Increase in modal shift for school transport routes in borough - Reduction in pollutant concentrations	Review outcomes of existing project to audit impact on pupils of poor air quality at 3 schools within the borough and determine steps necessary to improve AQ or reduce exposure. Review existing projects in other boroughs which show measurable increase in modal shift in boroughs with participating schools. Use evidence from review to update/

								refresh Richmond School Travel Plans/ STARS school projects.
Public health and awareness raising	14	London Healthy Workplace Charter	- London Borough of Richmond upon Thames - South London sub Region	£0	3	TBC	- Number of business members - Increase in active travel measures - Number of employees switching to active travel options	Sign up to and promote membership of the London Healthy Workplace Charter. Charter encourages employees in small and medium sized businesses to adopt active travel options (see K&C)
Delivery servicing and freight	15	ECO Stars /Fleet Operator Recognition Scheme (FORS) accreditation scheme.	London Borough of Richmond upon Thames - Transport Commissioning	£6K	3	Ongoing	- Number of operators registered - Number of operators achieving bronze, silver, gold accreditation.	Incentivise local HGV, coach, van and taxi operators to join ECOstars or FORS accreditation schemes.
Delivery servicing and freight	16	Evaluate Low Emissions Logistics project outcomes and participate in use of new logistics facilities, and/ or require council suppliers to use facilities.	London Borough of Richmond upon Thames - Transport Commissioning	£0	3	2017 -19	- Evaluate outcomes of project - Utilise consolidation centre if siting appropriate to Richmond freight traffic via procurement policy.	Low Emissions Logistics project between Lambeth, Southwark, Croydon, Richmond and Wandsworth councils (2016 – 2019). Objective to identify priority areas for cost effective establishment of consolidation centres and reduce emissions from delivery and servicing vehicles (MAQF project).
Delivery servicing and freight	17	Consideration of delivery re-timing trial pending outcomes of local freight study (action point 18)	London Borough of Richmond upon Thames - EH Dept., Traffic and Highways Dept.	£0	2 (Benefits potentially significant but not quantifiable)	Ongoing	- Evaluate outcome of trials in London - Possible trial to include deliveries within AQ Focus Areas as part of Clean Air Zone project. See measure 21	To evaluate AQ/ congestion improvements through introduction of delivery timing restrictions. Consider extending to London Borough of Richmond upon Thames AQ Focus Areas as part of Clean Air Zone project.
Delivery servicing and freight	18	Local freight study to develop Delivery	London Borough of	Unknown	2 (Benefits	2018	- Evaluate existing Delivery & Servicing	Undertake freight study to identify main operators and deter HGV use on

		& Servicing Plans	Richmond upon Thames		potentially significant but not quantifiable)		Plans e.g. Cowley Mill Road Freight Study, Hillingdon - Undertake freight study on routes with significant emissions from HGV traffic - Commission & implement Delivery & Servicing Plans - Evaluate reduction in emissions from freight/servicing vehicles	local roads and/ or review goods and servicing vehicle movements in specific areas and develop local Delivery & Servicing Plans.
Borough fleet actions	19	Review procurement contract for outsourced transport services.	London Borough of Richmond upon Thames - Transport Commissioning	£0	3	2018	- Review procurement policies from other boroughs to establish best practice - Adopt revised procurement policy incorporating low emission vehicle standards - Evaluate reduction in emissions from vehicles operating under new contract	Limited number of fleet vehicles operated by the London Borough of Richmond upon Thames. Procurement coordinated through Wandsworth as part of shared transport service. Review future contracts to include updated vehicle emission standards and include requirement to preferentially score bidders based on sustainability criteria.
Localised solutions	20	Detailed assessment of traffic management solutions for GLA Focus Areas and AQ 'hotspots'.	London Borough of Richmond upon Thames - Traffic & Highways Dept.	£20K per Focus Area	1	2018/19	- Review current LIP delivery plan to evaluate impact on air quality - Identify potential improvements to bus links/ stops/ timing specific to AQFAs	Undertake detailed traffic assessment with focus on AQ improvements. Identify potential junction improvements, re-routing options, improved signalling, and parking restrictions in GLA focus areas and in AQ 'hot-spots'. Identify appropriate traffic management

							- Liaise with local businesses within AQ Focus Areas to implement green travel plans/ delivery and servicing plans/ delivery re-timing/ improve vehicle emissions	scenarios based on source apportionment, traffic congestion patterns and local factors and undertake detailed AQ dispersion modelling to evaluate AQ impact of measures and local traffic modelling to assess impact on wider highway network. Assess impact of any new development on junctions/roads e.g. Stag Brewery and A316. Require specific traffic assessments to evaluate impact on AQ and potential mitigation. Link with LIP2 programme.
Localised solutions	21	London ULEZ and local clean air zones (CAZ)	London Borough of Richmond - EH Dept. TfL	Unknown	1	2018/19	An extended ULEZ or consideration of a local CAZ could potentially incorporate measures such as: - Restricting access to HGVs during peak traffic periods in AQFAs, link to delivery re-timing trial to minimise congestion caused by lorry loading/ unloading - GLA/ TfL to ensure that zero emission buses only access routes through AQFAs by 2020 - GLA/ TfL to ensure that ULEZ standards for taxis and Private	Mayor's ULEZ boundary not yet confirmed (outcome of public consultation due Autumn 2017). If scheme extends to South Circular many of the borough's town centres will remain outside the ULEZ and may be subject to displacement of higher emission vehicles. The ideal outcome for the London Borough of Richmond upon Thames would be the extension of the ULEZ to all London boroughs. The outcome of this will determine the necessity for designating AQ focus areas in Richmond as Clean Air Zones (CAZ). ULEZ is predicted to reduce NO_x by 51% in central London and by 10% in outer London. Introducing CAZ restrictions to AQFAs on a local scale would fulfil GLA's requirement for boroughs to target measures

							Hire vehicles apply to routes within AQFAs by 2020 - Restrict access to all non-compliant vehicles within AQFA defined on basis of emissions in line with ULEZ - Improve access/ infrastructure for zero emission vehicles within AQFAs by introducing rapid charge facilities for EV in suitable locations e.g. public car parks, supermarkets, fuel stations, taxi/ private hire ranks etc. - Consider introduction of street parking surcharge for polluting vehicles using on-street parking bays in AQFA/ CAZ. - Identify opportunities to install green walls/ hedges to disrupt dispersion of pollutants in AQFAs	effectively, would reduce emissions; incentivise uptake of low emission vehicles and encourage more active travel.
Localised solutions	22	Public Transport Liaison Group	- London Borough of Richmond upon Thames - TfL - South London		**2** (Benefits potentially significant but not quantifiable)	2017/2022	- Increase in number of bus journeys - Increased bus occupancy - Emission reductions from increase in ULEZ	Work with TfL, bus operators and adjoining boroughs to coordinate service provision and identify/ promote additional or enhanced bus services.

			sub-region				buses operating within borough	
Localised solutions	23	Zero Emissions Project (ZEN) AQ business liaison project.	London Borough of Richmond upon Thames	Unknown	2 (Benefits potentially significant but not quantifiable)	2017/22	- Identify and secure funding. - Number of business partners - Number of measures delivered - Air quality improvements/ emission reductions	Evaluate potential or principles of ZEN project on improving emissions from local business activities. Focus on specific business types or areas. (Evaluate Hackney, Islington, and Tower Hamlets ZEN project. Measures include courier electric bike schemes, free electric vehicle trials, reduced fares for zero emission taxis, grants for walking/ cycling facilities, eco audits etc.).
Localised Solutions	24	Consider further local restrictions on bonfires.	- London Borough of Richmond upon Thames - - EH Dept.	£6K	2 (Benefits potentially significant but not quantifiable)	2018	- Apply for external funding as a cluster group. - Carry out scoping report. - Cost benefit analysis - Adoption options for local powers	Consider multi borough scoping and local legislative changes. Link to nuisance agenda and further restrictions on construction sites. Review of policy for all allotments within the borough.
Localised solutions	25	School AQ 'Audit'	- London Borough of Richmond upon Thames - EH Dept. - GLA	£1.5K per school	3 Impact low but reputational impact high	2017	- Apply for GLA funding for audit - Undertake AQ monitoring using diffusion tubes or personal exposure monitoring system - Review feasibility of options to reduce emissions and/ or reduce exposure - Implement improvements	Undertake audit of Richmond schools/ nursery classes to identify potential measures to reduce school children's exposure to pollution in areas with poor air quality. Health evidence indicates that the health of very young and the elderly can be significantly compromised by exposure to poor air quality. Children attending school located close to busy or congested roads are vulnerable, with school traffic also increasing emissions at peak times. Consider options such as:

							- Repeat/ maintain monitoring to gauge impact on pollution concentrations.	- Moving school entrances/ play areas - Enforce no engine idling schemes around schools - Impose changes to local roads to restrict polluting vehicles around schools - Pedestrianisation of roads near school entrances - Introduce green infrastructure around schools to absorb/ disrupt pollutant dispersion - Formalise walking buses for large numbers of children, by funding a paid walking bus 'conductor' similar to the school crossing supervisor.
Localised solutions	26	Green Infrastructure	London Borough of Richmond upon Thames - Parks Dept.	Determined by allocation	**2** (Benefits potentially significant but not quantifiable	2017/18	- Pursue grant funding to support planting schemes to combat high concentrations of pollutants - Evaluate existing studies - Identify suitable locations/ planting schemes for entire borough, especially near schools and in AQFAs - Monitor impact of planting on air quality - Quantify exposure reduction	Parks Dept. to undertake study to ascertain the efficacy of species in terms of mitigating the effects of pollutants and dusts and to identify appropriate locations for beneficial tree and hedge planting to trap particulates and reduce NOx. The Parks Dept. will evaluate air quality benefits of 'green walls' including West London Alliance green infrastructure study and Green Walls Project (Barking & Dagenham and Kensington & Chelsea).
Localised solutions	27	Evaluate air quality monitoring strategy	- London Borough of	£0	**3** Impact low	Ongoing	- Number of monitoring sites maintained	Evaluate effectiveness of current AQ monitoring network. Ascertain how

			Richmond upon Thames - EH Dept.		but reputational impact high		- Number of monitoring sites in AQ focus areas/ 'hot-spots' - Data capture rates	closely local data correlates with London AQ model. Evaluate benefit of expanding/ revising network to include AQ Focus areas and local AQ 'hotspots'. Monitoring important to validate AQ model and to gauge impact of AQAP measures. Consider $PM_{2.5}$ monitoring provision to support Health & Wellbeing objectives.
Localised solutions	28	Polluting Vehicles	- London Borough of Richmond upon Thames - EH Dept., Licensing	£0	**3** Impact low but reputational impact high	2018	- Consider Licensing policy change to tackle emissions from mobile food outlets including ice-cream vans	Review Richmond's Licensing Policy to see if restrictions can be placed on polluting vehicles or require alternative powered locations
Cleaner transport	29	Formalise anti-idling enforcement	London Borough of Richmond upon Thames - EH Dept., Parking Services	£12K	**2** (Benefits potentially significant but not quantifiable	2017/18	- Identify key areas for enforcement of anti-idling areas - Number of penalty notices issued - Reduction in number of vehicles idling	Focus enforcement on schools, taxi-ranks, level crossings, AQ focus areas and hot-spots. Use parking enforcement officers to enforce anti-idling regulations. Conduct publicity campaign using Love Clean Air website, notices, school projects etc.
Cleaner transport	30	Continue commitment to the increased provision of EV charge infrastructure and extend throughout the borough through planning agenda	- London Borough of Richmond upon Thames - EH Dept., Transport Planning Dept. - Car Club providers - TfL - OLEV	Determined by allocation	**2**	2017/22	- Allocate match-funding to 'release' OLEV funding to implement EV Charging Strategy infrastructure improvements. - Increase in number of ultra-low emission car club vehicles - Number of car club members giving up car ownership - Change in emissions	- Electric Vehicle Charging Strategy adopted in November 2016, setting out proposals to add >200 new charge points across 80 locations within the borough by 2025/26. - Trialling streetlight mounted charge points to facilitate overnight charging in residential areas with no off-road parking. - Additional options for incentivising the uptake of electric vehicles include: - Increase percentage of electric vehicles in car club schemes.

							from car club vehicles. - Increase in provision of on-street charge points - Increase in utilisation of EVCP across borough - Increase in EVs registered in Richmond - Increase in number of electric taxis/ private hire vehicles licenced/ operated within borough.	- Review car club parking provision to align with current charge points or agree provision of new infrastructure with car club operators. - Increase provision of on-street EV charging facilities in residential areas where community make request for specific streets/ neighbourhoods. - Incorporate EV charging into new development schemes via planning SPD. - Evaluate opportunities for electric vehicle charge points (EVCP) at taxi ranks/ operating bases in Richmond to encourage use of EV taxis/ private hire vehicles outside ULEZ. - Evaluate Go Ultra Low City Scheme (Hackney/Islington/ Tower Hamlets) to provide 'electric streets' including conversion of parking bays to electric only as part of mini-ULEZ/ CAZ project.
Cleaner transport	31	Promote Car Club provision and use.	– London Borough of Richmond upon Thames	£0	3	Ongoing	- Number of Car Club members - Utilisation rates for CC vehicles - Number of ULEV/ zero-emission vehicles	Review current utilisation, car club siting and current emission standards of existing vehicles. Scope new locations and encourage substitution of existing fleet with a range of zero/ low emission vehicles vans/ cars/ motorbikes/ bicycles. Shared network across boroughs enables variable drop-off/ collection points and wider choice of vehicles.

Cleaner transport	32	Review emission standards for free parking in CPZs to encourage more zero emission cars.	– London Borough of Richmond upon Thames	Unknown	3		- Continue to review cost implications - Survey public opinion	Richmond electric vehicle owners are eligible for a (currently free) Band A residents permit, allowing them to park in CPZs. Additionally, if they are using a Richmond Card, they can park for free in Richmond parking bays. Emission standards for eligibility for free parking to be reviewed to encourage more zero emission vehicles.
Cleaner transport	33	Provision of infrastructure to support walking and cycling across the borough	– London Borough of Richmond upon Thames - TfL	Unknown and dependent upon allocation	2	Ongoing	- Increase in percentage cycling mode share. Currently Richmond = 7% journeys made by bicycle (TfL data 2014), which is the highest share compared with neighbouring and south London boroughs. Target to achieve 15% by 2026 – Number of kilometres of cycle network completed. - Delivery of Richmond cycle network including Quietways routes as identified in Cycling Strategy - Number of individuals completing 'Bikeability' training.	- Council Cycling Strategy (2016-2026) incorporating 3 objectives; making cycling journeys safer and easier, developing cycling locally as an everyday option, promote cycling as a safe, fun and healthy way to get around. Actions identified to deliver objectives. - Richmond helped launch Walkit.com - New Richmond walking maps being developed in 2017. - Cycling and Business engagement project (2016). The London Borough of Richmond upon Thames worked closely with businesses and developed pollution free cycling maps - New cycle hub installed at Teddington station - Council support given to Quietways 21 from Richmond Park to Bushy Park via Ham and Teddington - Ongoing evaluation of legal position to utilise tow-paths within borough to provide additional safe walking/cycling routes. - 3 cycle hangars installed in borough

								in 2016 with 6 more planned for 2017. - School walking initiatives: ongoing traffic management and safety projects coordinated by London Borough of Richmond upon Thames including International Walk to School month, Walk Once a Week (WoW), Richmond Safe Walking training.
Cleaner transport	34	Lobby for Cleaner buses in areas of poor air quality	– London Borough of Richmond upon Thames	£6K	1	2017-22	- Reduction of certain polluting vehicles from Focus Areas - Increase in hybrid and all electric vehicles within the borough	Review bus routes in the focus areas with a view to lobbying TFL for cleaner vehicles. Rationalise certain bus routes where possible.
Climate Change/ Sustainability	35	Complete refresh of the Sustainability Agenda within Richmond and link this to the Air Quality Action Plan	– London Borough of Richmond upon Thames - EH Dept.	Unknown	2		- Produce a new and relevant sustainability plan for the borough, linked and complimenting the AQAP Remove conflicts with the local air quality agenda	Complete review of the sustainability agenda within Richmond Council. To make this agenda workable and realistic and compliment actions within this Air Quality Action Plan.

Appendix A: Response to Consultation

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

Consultee	Category	Response
LB Richmond upon Thames	*Local Authority Departments*	*Broadly supportive of identified measures. Securing adequate resources identified as a key component for ensuring successful implementation and completion of measures.* *Opportunity for increased collaborative working between AQ team, Planning and Transport identified. Sharing existing information to ensure that AQ impacts are effectively assessed and mitigated/reduced in planning and traffic management schemes.* *Ongoing initiatives which are effective at reducing AQ emissions from transport and buildings/development incorporated into updated AQAP.*

Appendix B: Reasons for Not Pursuing Action Plan Measures

Table B.1 Action Plan Measures Not Pursued and the Reasons for that Decision (to be updated following consultation)

Action category	Action description	Reason action is not being pursued (including Stakeholder views)
Emissions from developments and buildings	• 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.	London Borough of Richmond upon Thames has no housing stock. Guidance provided for new developments via Supplementary Planning Guidance/Local Plan/Building Control Regulations.
Public health and awareness raising	No air quality actions within this theme discounted.	
Delivery servicing and freight	No air quality actions within this theme discounted.	
Borough fleet actions	• Join the Fleet Operator Recognition Scheme (FORS) for the borough's own fleet. • Increase number of alternatively fuelled vehicles in boroughs fleet. • Accelerate uptake of Euro VI vehicles in boroughs fleet. • Smarter driving training for boroughs fleet drivers.	Not being pursued as services involving vehicle fleet have been contracted out. Focus instead on future procurement policies.
Localised solutions	▪ Speed control measures e.g. lowering the legal speed limit to 20mph in built up residential areas	A number of 20mph speed limits and 20mph zones have been introduced in Richmond. Air quality benefits have not been assessed or established. No plans to extend scheme.
Cleaner transport	▪ Very Important Pedestrian Days (e.g. no vehicles on certain roads on a Sunday) and similar initiatives. ▪ Emissions based parking levy for residential and business parking permits in Richmond.	Measure discounted by Scrutiny Committee. Measure discounted by Scrutiny Committee on grounds that the borough may be potentially impacted by other restrictions as part of the Mayors AQ policy.

Appendix C: Successful projects delivered through action plan 2004 -2017:

- Adoption of London Borough of Richmond upon Thames Cycling Strategy (2017) providing framework for additional infrastructure and expansion of cycle routes, provision of cycle training and promotional events. (Action No.4)

- Public transport improvements integrated into the Local Plan including station and interchange improvements at a number of key locations. (Action No.8)

- Business Travel Plans promoted through campaigns including Go Green at Work and Greening Richmond Business Programme to support companies who want to improve their environmental performance. The Smarter Travel Richmond (EU funded) 2009 - 2011 increased the number of companies with travel plans from 52 to 124. (Action No 10)

- The London Borough of Richmond upon Thames hosted the launch of West London Walkit.com walking strategy to promote walking as a sustainable transport mode and to help guide walkers to use less polluted routes. (Action No 18)

- Promoted School Travel Plans, implemented Safer Routes to School/ Walk on Wednesday scheme via School Travel Plans and adoption of TfL STARS school travel plan accreditation scheme. (Action No 12)

- Participated in CleanerAir4Schools – joint project between Croydon, Merton, Richmond and Wandsworth including 'walk once a week campaign', School Travel Plan champions training events held in three schools in each borough. (Mayor's AQ Fund project 2015 - 2017)

- Integrated air quality into LIP2. Schemes identified need to manage traffic to reduce congestion, reduce need to travel and encourage less polluting means of transport. (Action No.22)

- Adoption of Electric Vehicle Charging Strategy (2016) for provision of electric vehicle charging infrastructure including 200 new charge points installed across 80 locations across the borough by 2025/26. (Action No.5)

- In partnership with LB Merton lead NRMM programme to address pollution from development sites.

- Support for development of Car Clubs within borough. In 2016 there were 71 car club bays in operation. (Action No.28)

- Campaign to raise awareness of impacts of biomass burning and bonfires, correct fuels to use in smoke control area (Actions 24 & 25)

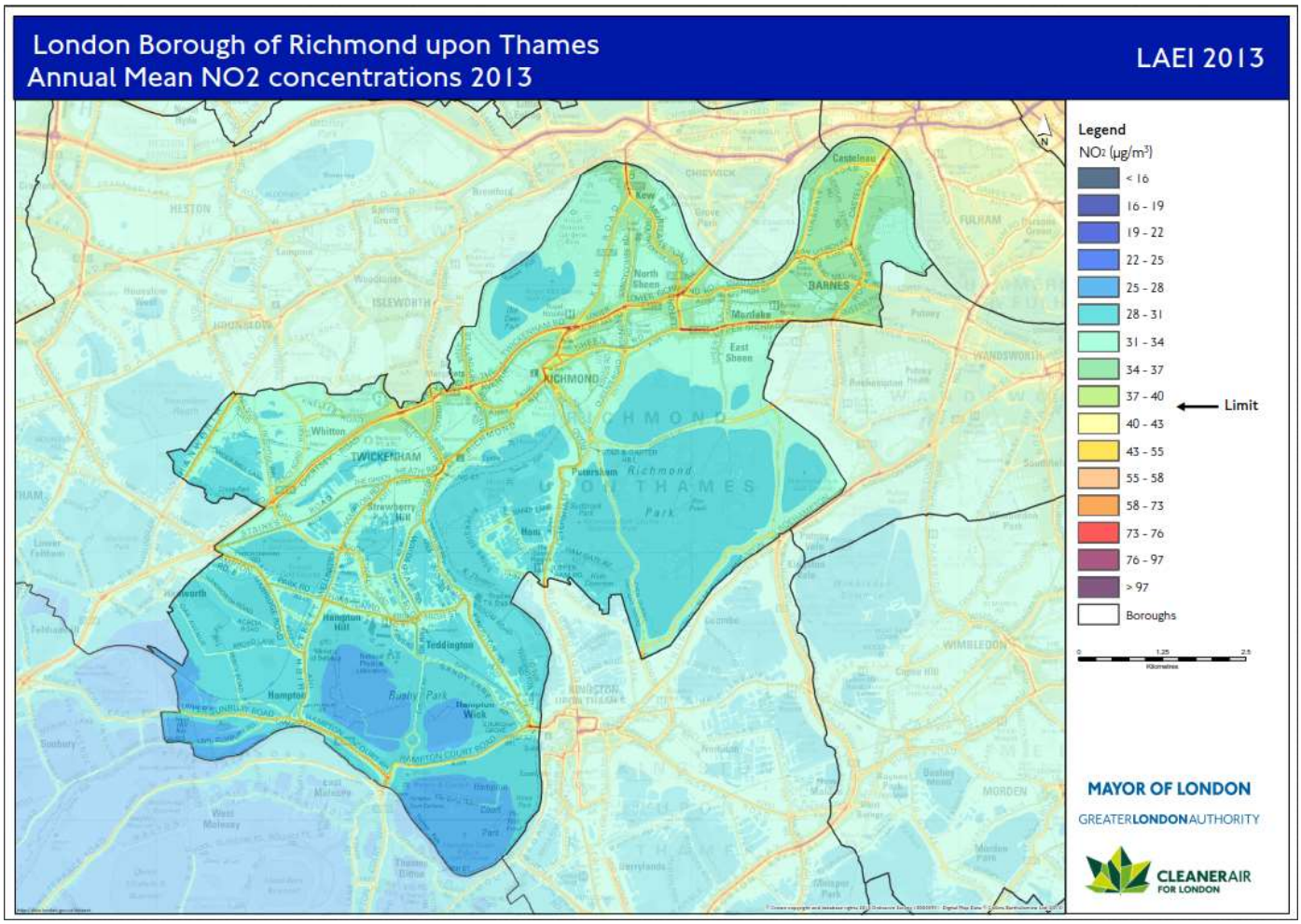
- Anti-idling advice provided via ad-hoc officer intervention at key locations (Actions 31 & 33).

Appendix D: Summary of current air quality in London Borough of Richmond upon Thames

The UK Air Quality Strategy (AQS), released 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.

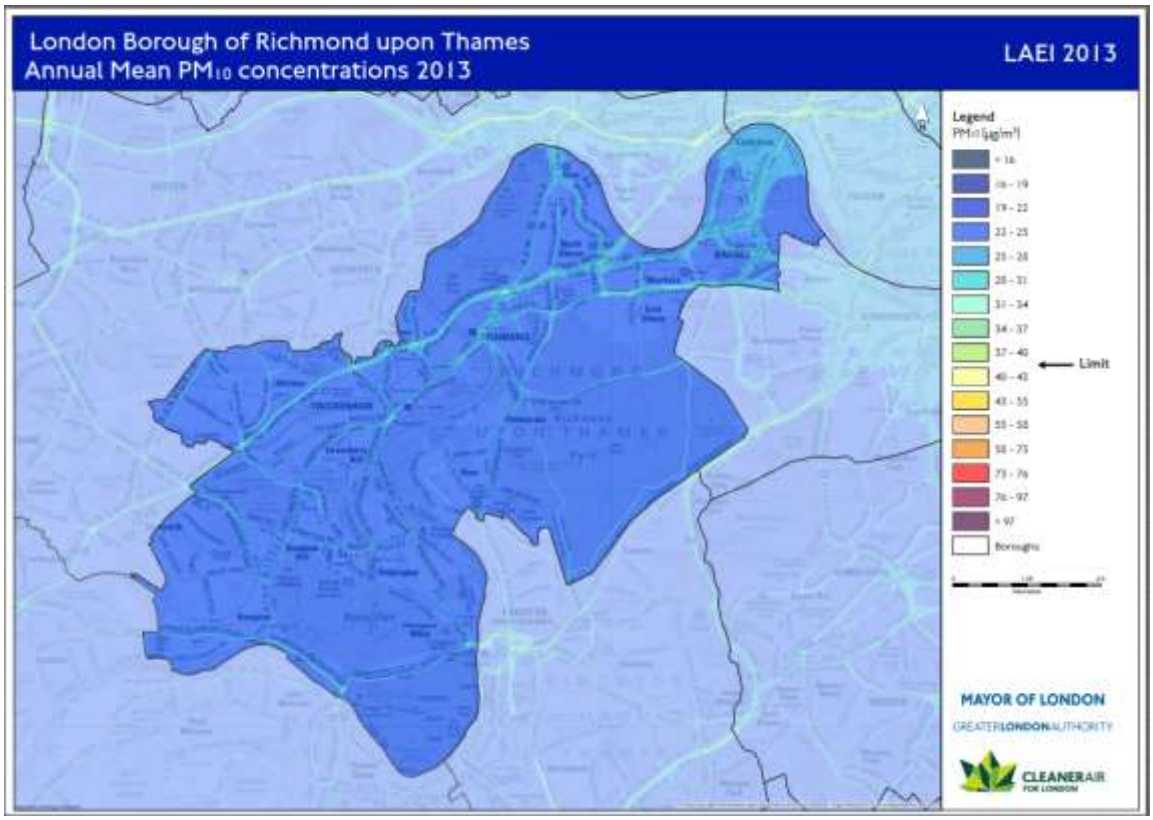
The London Borough of Richmond upon Thames is meeting the national AQS objectives for all pollutants other than for Nitrogen Dioxide (NO_2) and Particulate Matter (PM). Limited monitoring data for Particulate Matter (PM_{10} and $PM_{2.5}$) indicates compliance with the objectives, however pollutant dispersion modelling indicates that levels of PM_{10} are likely to be exceeding the annual mean objective at specific locations. As both PM_{10} and $PM_{2.5}$ are potentially damaging to health at any level, this remains a pollutant of concern.

Figure 1: Modelled map of annual mean NO_2 concentrations (from the LAEI *2013*)



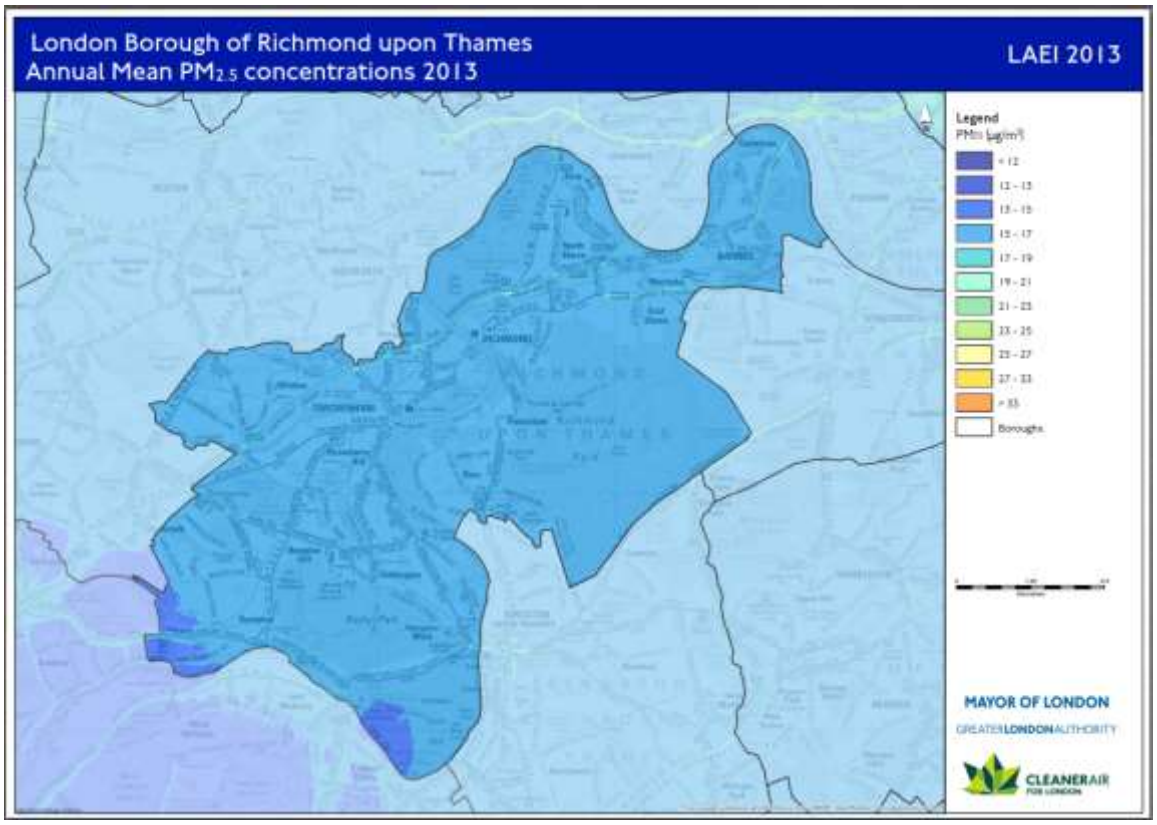
The modelled NO_2 concentrations clearly identify the contribution of road traffic emissions with exceedance of the NO_2 annual mean objective closely correlated with the main transit routes and busy junctions within the borough.

Figure 2: Modelled map of annual mean PM_{10} (from the LAEI *2013)*



Exceedance of the PM_{10} annual mean objective also extends along the main transport links. The main areas of concern are the A316 where it passes through Richmond town centre and North Sheen, King Street, Twickenham, Hampton Wick near Kingston Bridge, and A306 at Castelnau.

Figure 3: Modelled map of annual mean $PM_{2.5}$ (from the LAEI *2013)*



$PM_{2.5}$ concentrations are not currently monitored in Richmond but the dispersion model identifies elevated concentrations along the main transit routes and in the town centres within the borough, as would be expected. There is no regulatory standard applicable to English local authorities in respect of $PM_{2.5,}$ however, the EU Ambient Air Quality Directive (2008/50/EC) does set out air quality standards including an exposure reduction obligation, a target value and a limit value (25µg/m^3 by 2020). The GLA has introduced a '$PM_{2.5}$ borough role' for air quality teams to consider how existing and new priority actions can help reduce $PM_{2.5}$ levels in their area, and to work collaboratively to align any new measures with the objectives of the borough Public Health team.

Public Health Outcomes Framework

The current Public Health Outcomes Framework (PHOF), produced by Public Health England, provides an indication of differences in life expectancy and healthy life expectancy between communities. The fraction of mortality attributable to particulate air pollution (Indicator 3.01) for Richmond upon Thames is as follows:

Region/community	Particulate air pollution (Indicator 3.01)(Feb 2017)
London Borough of Richmond upon Thames	5.1
London Region	5.6
England	4.7

Source: Public Health Outcomes Framework – Public Health England (website accessed May 2017)

The PHOF data indicates that the fraction of mortality attributable to particulate air pollution is slightly below the average value for the London region but is higher than the average for England.

Estimate of Population Exceeding UK Annual Mean Objective for NO_2

Data from the London Atmospheric Emissions Inventory also provides an estimate of proportion of the total population of Richmond that are subject to NO_2 concentrations in excess of the annual mean UK AQ objective of 40µg/m^3. Based on modelled data for 2013 this was slightly in excess of 13%. The table below provides a comparison of this statistic against other boroughs in the South London Sub-Region and indicates that Richmond has the second highest population exposed to NO_2 in excess of the objective.

Borough	% Population in borough > 40µg/m^3 (LAEI 2013)
Wandsworth	20.12
Richmond upon Thames	13.06
Kingston	7.48
Bromley	5.80
Croydon	3.83
Sutton	3.77
Merton	0.55

Nitrogen Dioxide (NO_2) concentrations remain in excess of the UK Air Quality Objectives at a significant number of locations across the borough. Monitoring during 2016 indicated that the annual mean NO2 objective of 40µg/m^3 was exceeded at 48 of the 64 sites where monitoring was carried out with the highest concentrations measured at sites in Richmond, Twickenham, Barnes, Chalkers Corner, Hampton, East Sheen, Hampton Hill, Kew, Teddington, Whitton, Hampton Wick and St. Margaret's. Additionally at five of these monitoring sites measured NO_2 concentrations were in excess of 60µg/m^3, which is considered indicative of an exceedance of the 1-hour UK AQ objective. These sites were George Street, Hill Street, The Quadrant and Red Lion Street in Richmond; and York Street in Twickenham. Exceedance of this short term objective indicates that there is a risk to individuals spending as little as an hour in the area of exceedance and is therefore significant not just for people living in that area but also for those working or visiting the area.

Monitoring trends for the period 2010 to 2016 indicate very little change in NO_2 levels across the borough over the past 7 years. Given the consistently high concentrations measured and the extent of the borough failing to meet the UK AQ objectives it is clear that more robust action on a national, regional and local scale is needed to protect the health of those living within the borough.

Calculation of Required Reduction in Emissions

Local authorities are recommended to identify the reduction in pollutant emissions required to attain the objectives within their AQMAs to determine the scale of effort likely to be required. The London Local Air Quality Management Technical Guidance document (LLAQM.TG16) recommends that this is expressed as the required percentage reduction of local emissions in terms of NOx due to local road traffic. This is because the primary emission is of NOx and there is a non-linear relationship between NOx concentrations and NO_2 concentrations. The calculation was carried out according to Box 4.5 of LLAQM.TG16 and was based on the monitoring site recording the highest measures NO_2 concentration (George Street, Richmond at 96µg/m^3) as this represents the worst case location. The calculation is summarised in the table below.

Site	Measured NO2	Dist corr.	Total Nox	Background concs		Road Nox_current
				NO2	NOx	
Richmond Circus	96	80.8	164.39	25.6	39.8	124.59
Road NOx to give 40ug/m3			33.03			
Road NOx reduction	91.56					
%reduction	**73%**					

AQMAs and Focus Areas

In Richmond an Air Quality Management Area (AQMA) has been declared for the whole borough.

The AQMA has been declared for the following pollutant/s:

- Nitrogen Dioxide - we are failing to meet the EU annual average limit for this pollutant at some of our monitoring stations and modelling indicates it is being breached at a number of other locations. We may also be breaching the UK 1-hour AQ Objective based on measured concentration for NO_2 being in excess of 60µg/m^3 at some locations within the borough.

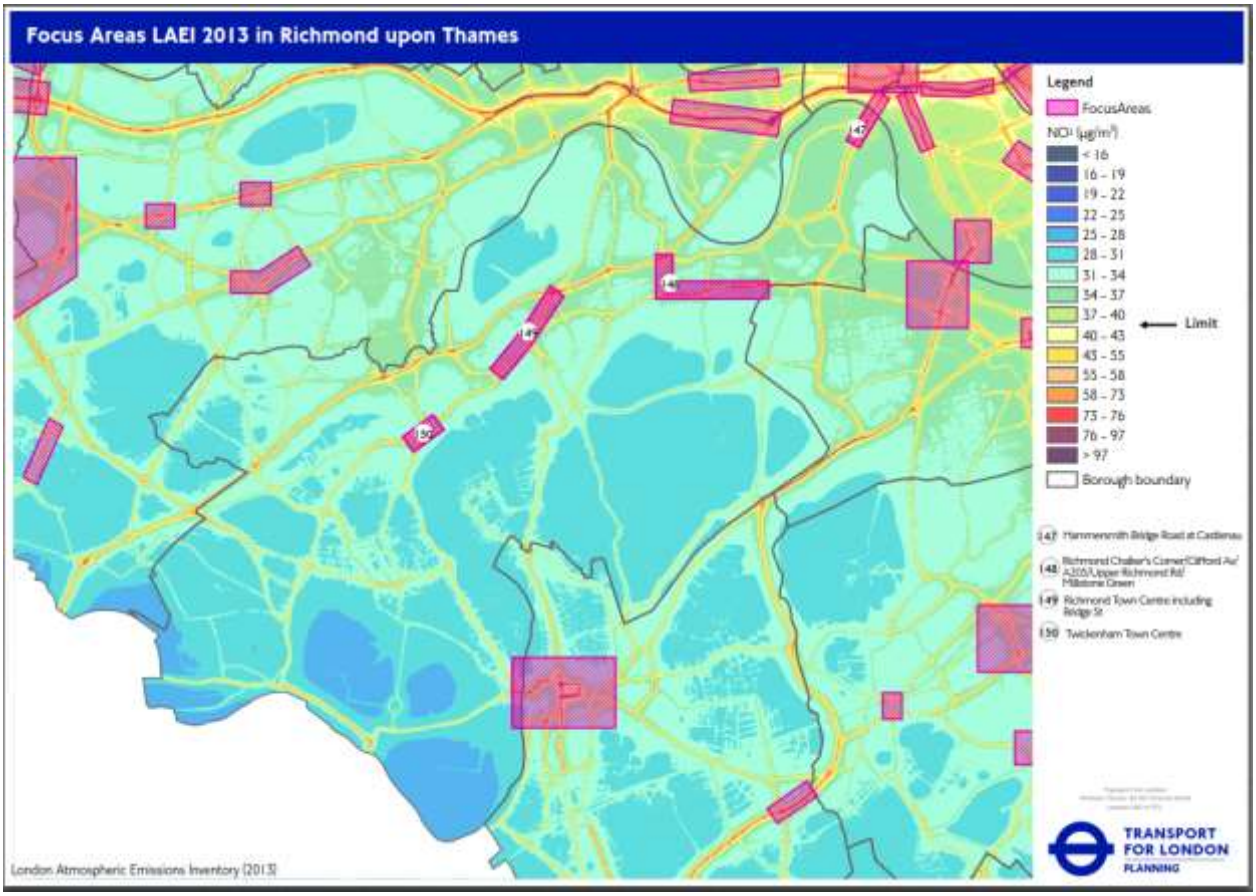
- Particulate Matter (PM_{10}) – whilst monitoring data from the automatic monitoring stations at Castelnau Library (Roadside site), and Wetlands Centre (Background site) in Barnes indicate we are complying with the UK Objectives and EU Limits, the wider modelling data indicates that we are likely to be breaching the 24-hour and annual mean PM_{10} Objectives at a number of locations across the borough. We are also exceeding World Health Organisation air quality guideline for this pollutant, and we have a formal responsibility to work towards reductions of $PM_{2.5}$.

An air quality Focus Area is a location that has been identified as having high levels of pollution and human exposure. There are four focus areas in the borough. These are on the main transport links along Hammersmith Bridge Road at Castelnau; the road between Richmond Circus and Richmond Bridge up to Sheen Road; Chalkers Corner, King Street, Twickenham.

Figure 4: London Borough of Richmond upon Thames GLA Focus Areas (2013)

Focus Area Ref.	Location
Focus Area 159	Hammersmith Bridge Road at Castelnau
Focus Area 160	Richmond Circus to Richmond Bridge and Sheen Road A305
Focus Area 161	Richmond – Chalker's Corner/Clifford Avenue/A205/Upper Richmond Road/Millstone Green.
Focus Area 162	Twickenham – King Street

Figure 5: Map of London Borough of Richmond upon Thames - Air Quality Focus Areas (GLA 2013)



Appendix E: Sources of Pollution in London Borough of Richmond upon Thames

Pollution in the London Borough of Richmond upon Thames 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 comes from outside London and beyond the UK.

In order to evaluate the impact of the pollution sources within the borough, the charts reproduced in Figure 6 below provide source apportionment data for each of the borough's four Air Quality Focus Areas. The data originates from TfL's London Atmospheric Emissions Inventory (LAEI) and is based on modelled data for the year 2020. The charts provide a comparison of the percentage contribution to NO_x concentrations across each AQFA, as an average concentration value, and compare it with the percentage NO_x concentration within 20 metres of the major roads within each AQFA. As would be expected this highlights the impact of road transport at receptor locations close to the roadside.

For each AQFA the charts also provide a breakdown of NO_x emissions from each vehicle type within the road transport fraction. This information is helpful for highlighting the variation in traffic emissions between the different AQFAs and for targeting measures which will have the most benefit in terms of reducing emissions from the various transport sources.

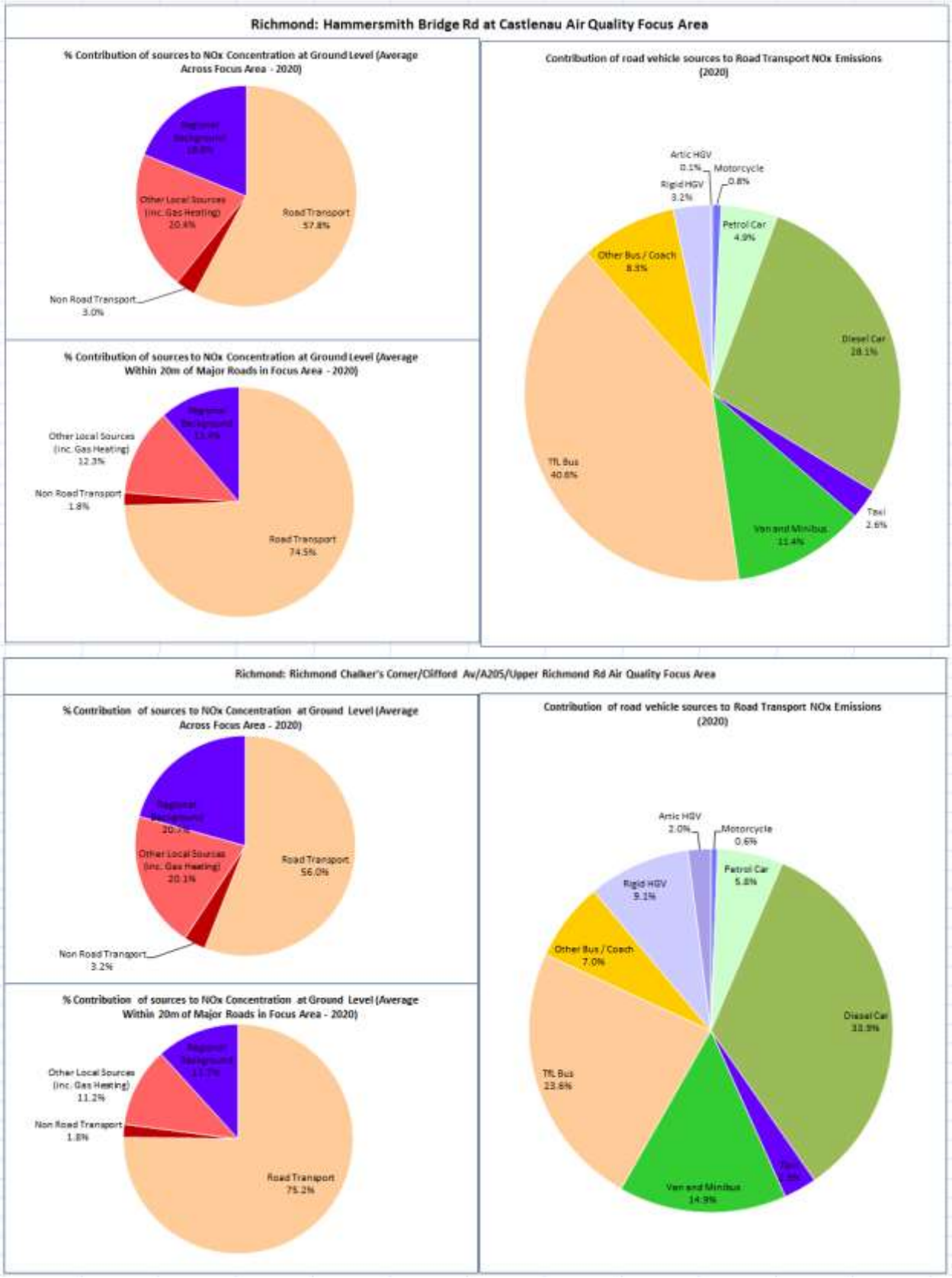
Based on the average percentage contribution of sources to NOx concentrations across the four AQFAs; transport contributes an average of 55% (range 50.0% to 57.8%), other local sources including gas heating an average of 21.2% (range 20.1% to 23.5%), non-road transport an average of 3.4% (range 3.0% to 3.9%), with regional background sources contributing an average of 20.2% (range 18.8% to 21.8%).

In respect of the transport sources in particular, the LAEI source apportionment **emissions** data for each AQFA indicates that diesel vehicles contribute approximately 90% of the total road transport NO_x emissions (based on 2020 modelled data). This is the combined NOx emission contribution from diesel vehicles across all vehicle types. Comparison of the modelled emissions data between each AQFA indicates some interesting variations in the relative contribution of NOx from diesel cars and TfL buses which are the two largest individual road transport emission sources.

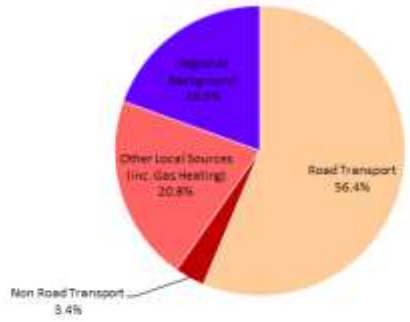
The highest NOx emissions from buses are within the Richmond Town Centre AQFA at 50.5% compared with the lowest contribution at Chalkers Corner/Clifford Avenue AQFA at 23.6%. For emissions from diesel cars the highest percentage contribution is within the Twickenham Town Centre AQFA at 37.2% and the lowest within the Richmond Town Centre AQFA at 24.7%. The data is based on the predicted number of each of the vehicle types within the AQFAs in 2020 as well as other assumptions such as predicted average vehicle speed and emission standards for the specific vehicle fleet at that point in time.

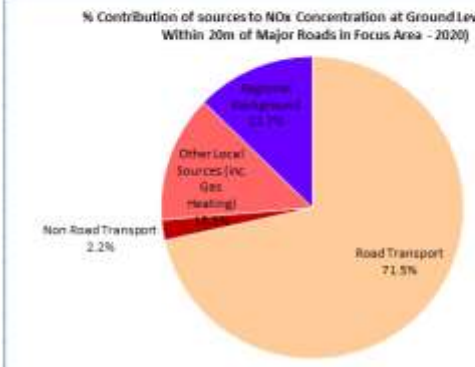
Numerically buses and other heavy duty vehicles represent a smaller proportion of the fleet but generate higher emissions per vehicle when compared to cars and other light duty vehicles. The council currently has limited direct control over the TfL bus and taxi fleets operating within the borough but it is clear that the AQAP measures need to address emissions from all vehicle types but particularly those which are diesel powered. This includes general measures which aim to reduce traffic volume and improve traffic flow but also more specific measures to increase the proportion of low emission vehicles in the general fleet such as increasing number of electric cars and vans; ensuring that the borough benefits from improved TfL emission standards for local bus and taxi fleets and reviewing freight and delivery practices to minimise emissions in areas with poorest AQ.

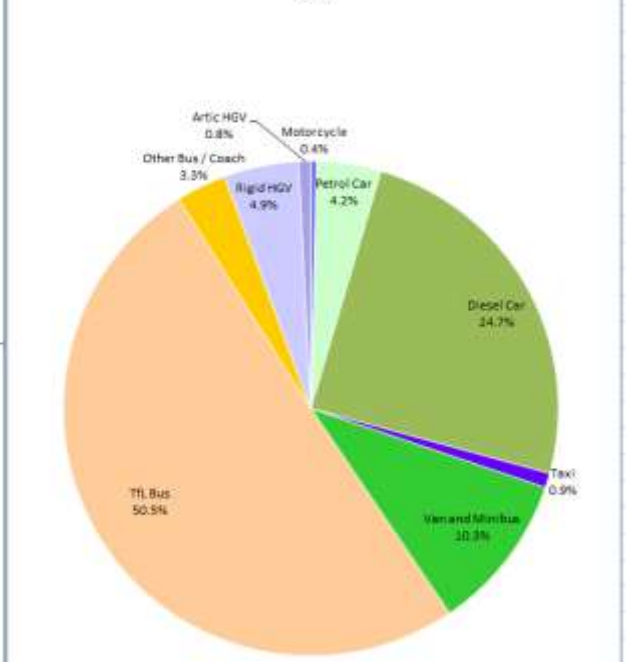
Figure 6: NOx emissions by source and vehicle type for the London Borough of Richmond upon Thames Air Quality Focus Areas. (Modelled data for 2020)



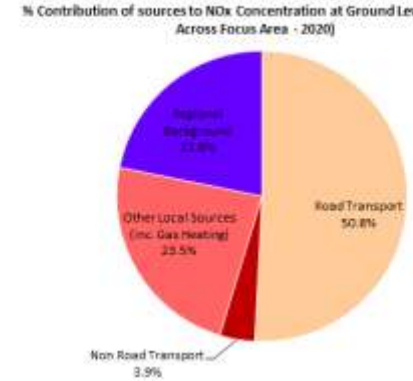
Richmond: Richmond Town Centre including Bridge St Air Quality Focus Area

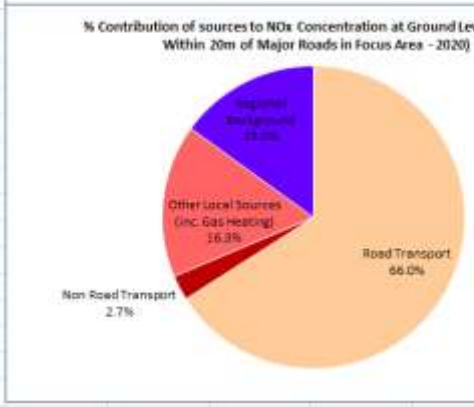


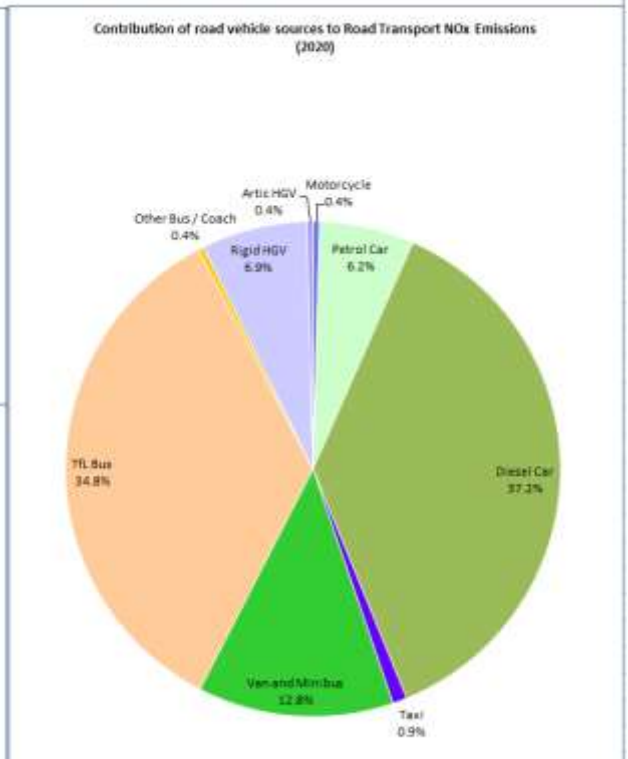




Richmond: Twickenham Town Centre Air Quality Focus Area







Other local sources of NO_x emissions include commercial and domestic gas heating sources and non-road mobile machinery. The London Borough of Richmond upon Thames is limited in terms of reducing domestic gas NO_x emissions from existing housing stock as the council no longer has any housing stock, however the AQ Supplementary Planning Guidance document and GLA AQ Neutral policy for London boroughs provide some controls on heating appliances for new and redeveloped properties and businesses.

For non-road mobile machinery (NRMM), the borough has jointly commissioned an NRMM emissions study to identify compliant machinery and develop a checklist for contractors which will be used to improve emissions from machinery and equipment operated on development sites.

Similarly for particulate matter, the dominant source of emissions is transport and within that sector diesel powered vehicles collectively contribute more than 70% of PM_{10} emissions. Measures to address transport sources generally and those which reduce reliance on diesel fuels will have a positive impact on PM_{10} and $PM_{2.5}$ emissions. One additional source of particulate matter is the re-suspension of dust from roads and commercial and development sites. For development sites re-suspension of particulate matter is controlled to some extent by use of the Sustainable Design and Construction and Control of Dust and Emissions Supplementary Planning Guidance and for highways sources, existing street cleansing regimes will have some benefit.

Appendix F: Development and Implementation of the London Borough of Richmond upon Thames' AQAP

Consultation and Stakeholder Engagement

In 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. In addition we have undertaken the following stakeholder engagement:

- *web site*
- *Articles in local newspaper*
- *Direct engagement with partner groups*

The response to our consultation stakeholder engagement is given in Appendix A.

Table A3: Consultation undertaken

Yes/No	Consultee
	the Secretary of State
	the Environment Agency
	Transport for London and the Mayor of London (who will provide a joint response)
	all neighbouring local authorities
	other public authorities as appropriate
	bodies representing local business interests and other organisations as appropriate

Steering Group

An AQAP steering group was convened and a meeting to review the first draft of the updated AQAP held on 5th September 2017. Representatives from the following Departments were invited; those highlighted were able to attend the first meeting:

- Head of Engineering
- Parking Policy Manager
- Transport Strategy Team Manage
- Transport Planning Principal
- Cycling Officer
- Road Safety Manager
- Public Health Lead
- Public Health Lead
- School Travel Planning Co-ordinator
- Head of Development Management(Richmond)
- Strategic Applications Manager
- Area Team Manager South
- Area Team Manager North
- Arboricultural Manager
- Senior Environmental Health Pollution Practitioner (Air Quality)
- Environmental Health Pollution Manager
- Consultant - TRL

A review of the draft AQAP was undertaken with suggested amendments incorporated into a revised document.
The steering group were broadly supportive of the identified measures. Securing adequate resources was identified as a key requirement for ensuring successful implementation and completion of measures.
Opportunities for increased collaborative working between AQ team, Planning, Transport and Sustainability team were identified and the format for effective liaison discussed. The need to share information effectively was identified in order to ensure that AQ impacts are assessed and mitigated/reduced where possible. Information on existing and planned projects was shared and the AQAP revised to reflect those areas of work.

Appendix G: Abbreviations

AQAP	Air Quality Action Plan
AQFA	Air Quality Focus Area
AQMA	Air Quality Management Area
AQO	Air Quality Objective
BEB	Buildings Emission Benchmark
CAB	Cleaner Air Borough
CAZ	Central Activity Zone
EV	Electric Vehicle
GLA	Greater London Authority
LAEI	London Atmospheric Emissions Inventory
LAQM	Local Air Quality Management
LLAQM	London Local Air Quality Management
NRMM	Non-Road Mobile Machinery
PM_{10}	Particulate matter less than 10 micron in diameter
$PM_{2.5}$	Particulate matter less than 2.5 micron in diameter
TEB	Transport Emissions Benchmark
TfL	Transport for London

Responsibilities and Commitments

This AQAP was prepared by Transport Research Laboratory Ltd in conjunction with the Environmental Health Department of Richmond upon Thames Council and with the support and agreement of the following officers and departments:

- Jason Andrews Pollution Team Manager
- Max Lawson Graduate, Pollution Team
- Carol Lee Senior Practitioner Pollution Team

This AQAP has been approved by:

Cabinet Member for Environment, Business, and Community – Pamela Fleming

This AQAP will be subject to an annual review, appraisal of progress each year will be reported in the Annual Status Reports produced by Richmond Council, as part of our statutory London Local Air Quality Management duties.

If you have any comments on this AQAP please send them to Jason Andrews at:

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SM4 5DX

Jason.Andrews@merton.gov.uk
020 8545 3859