



THE ROYAL BOROUGH OF  
**KINGSTON**  
UPON THAMES

Air Quality Action Plan  
For the  
*Royal Borough of Kingston upon Thames*

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

JULY 2016

## SUMMARY

This document revises the Council's current Air Quality Action Plan (AQAP) that was published in 2005 and outlines the actions we will take to prevent deterioration of, and ultimately improve, air quality in the Borough between January 2016 and December 2021.

Our medium term plan, 'Destination Kingston' sets out our aim of making Kingston fit for modern living - an attractive place to live and work. This plan supports a number of the Destination Kingston 2015-2019 themes and objectives, with clean air and a healthy environment being a fundamental requirement for our communities to live, work and grow.

The AQAP also supports a key element of the Our Kingston Programme, established in July 2015 and setting out how the Council will deliver the vision set out in Destination Kingston. Actions to improve Air Quality sit well within Community Outcome 7 established within the programme, which seeks a *'sustainable borough with a diverse transport network and quality environment for all to enjoy'*.

Air quality assessments undertaken by the Royal Borough of Kingston upon Thames identified that the Government's air quality objective for annual mean nitrogen dioxide and daily mean particulates (PM<sub>10</sub>) were not being met within the Borough (as with most of London) by the target dates. As a consequence, the Council designated an Air Quality Management Area (AQMA) across the whole of the Borough and produced an Air Quality Action Plan in recognition of the legal requirement on the Council to work towards air quality objectives; as required under Part IV of the Environment Act 1995 and the relevant air quality regulations.

Most of the air pollution in the AQMA is caused by road traffic, although boilers (both domestic and industrial) and other more minor sources also contribute. The Action Plan reflects the primary source of pollutants by including measures to reduce the pollution emitted from vehicles on the roads, promoting alternative more sustainable sources of transport. As the Borough enters a phase where residential development is likely to be significant, the Plan ensures developers and employers consider these aspects.

The AQAP outlines 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 and so we will continue to work with and lobby regional and central government on policies and issues beyond our influence.

Our priorities are to do what we can to reduce emissions from road traffic sources, but ultimately we aim to prevent, wherever possible, a deterioration in the levels of pollution experienced in the Borough, and particularly our town centres as we go through a period of significant development, population expansion and infrastructure improvements.

## RESPONSIBILITIES AND COMMITMENT

You will see in this report that we have engaged with stakeholders and communities that can make a difference to air quality in the borough. We would like to thank all those who have worked with us in formulating this Plan.

This AQAP was prepared by the Environmental Health Department with support from the Planning Authority, the Highways Authority, Public Health and our Sustainable Transport and Climate Control team.

This AQAP has been approved by the Adults and Children's Committee following a period of consultation with statutory and non-statutory bodies, agencies and interested parties.

This AQAP will be subject to regular review and appraisal of progress, reporting to the Adults and Children's Committee (or other relevant committee / body).

Progress each year will be reported in Annual Progress Reports produced as part of our statutory Air Quality Management duties.

If you have any comments on this AQAP please contact:

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## **1.0 Introduction**

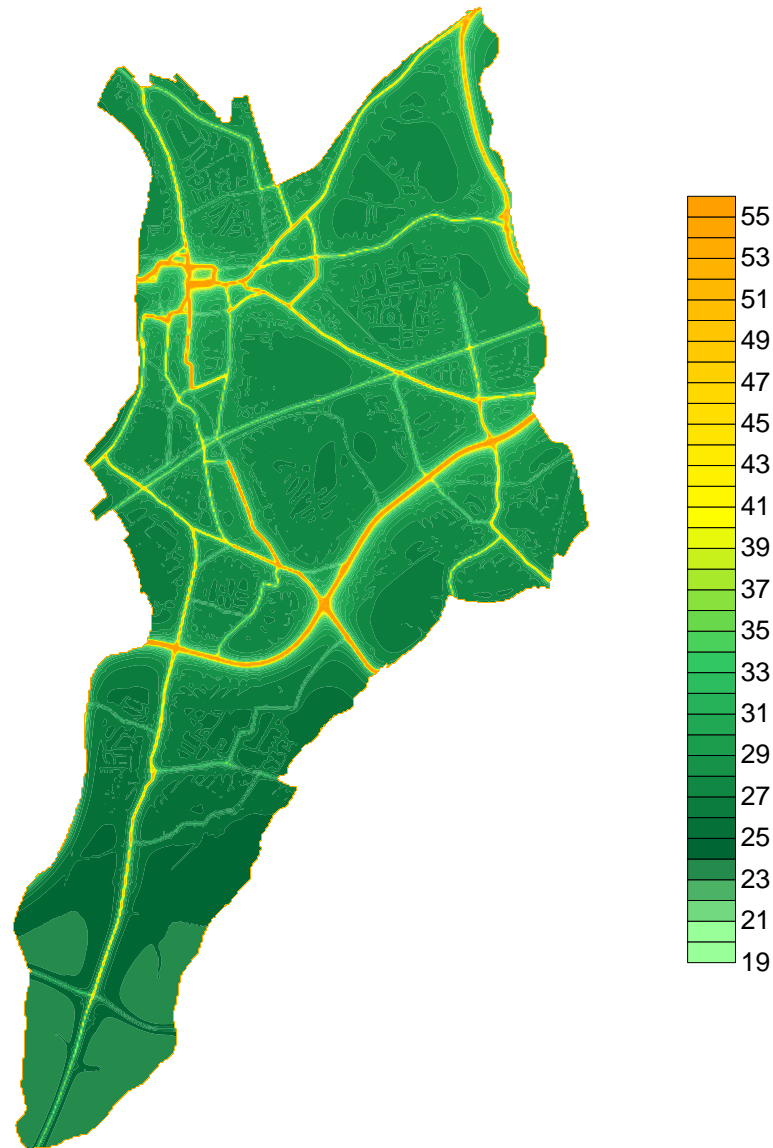
- 1.1 This Air Quality Action Plan outlines the actions that the Royal Borough of Kingston upon Thames will undertake between April 2016 and December 2021 in order to reduce concentrations of and exposure to pollution; thereby positively impacting on the health and quality of life of residents and visitors to the borough.
- 1.2 The Action Plan 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 legislation.
- 1.3 The Council has assessed and screened: benzene, 1,3 butadiene, carbon monoxide, lead and sulphur dioxide and has found that these pollutants were not likely to exceed the air quality objectives.
- 1.4 However, for Nitrogen Dioxide (NO<sub>2</sub>) and particulate matter (PM<sub>10</sub>) the Council previously undertook a Detailed Assessment which showed that the annual mean objective of 40 µg m<sup>-3</sup> for NO<sub>2</sub> and daily mean objective of 50 µg m<sup>-3</sup> (not to be exceeded more than 35 days in one year) for PM<sub>10</sub> were exceeded in parts of the Borough. Subsequent Updating and Screening Assessments have highlighted that this designation should be maintained.

## **2.0 Current air quality in the Borough**

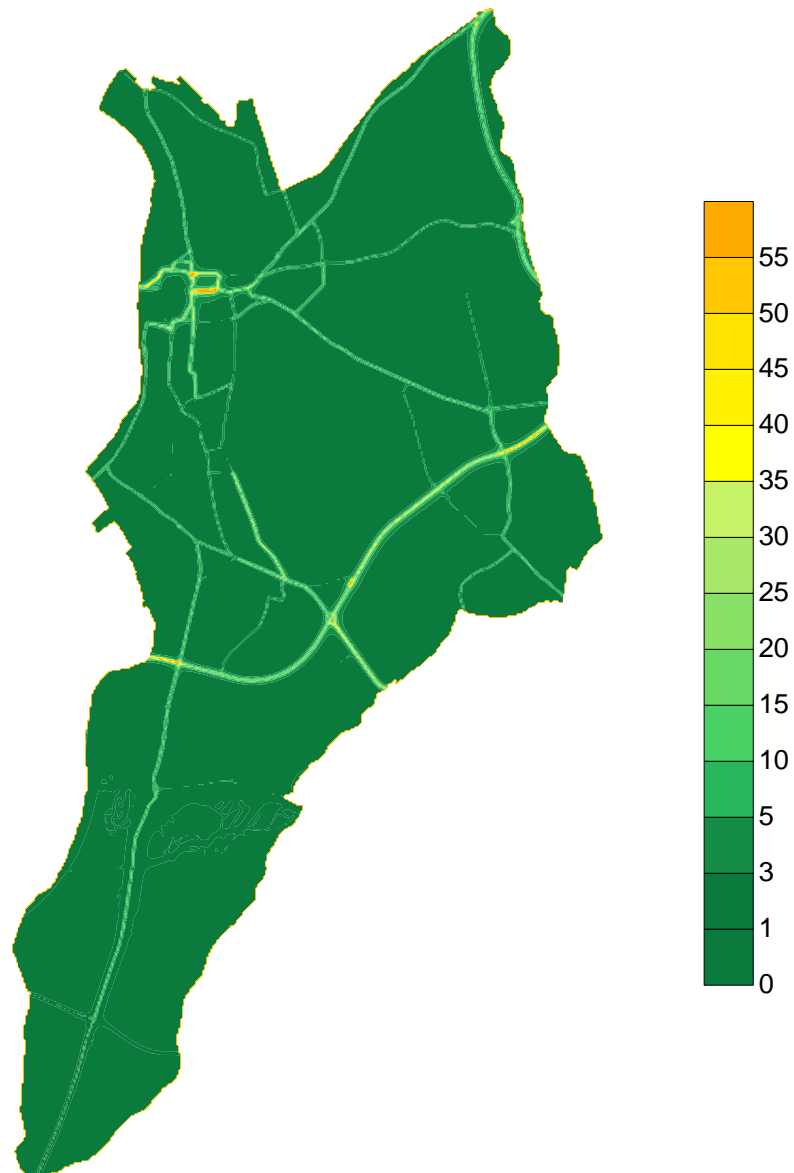
- 2.1 The UK Air Quality Strategy (AQS), released in July 2007, provides the overarching strategic framework for air quality management in the UK and contains national air quality standards and objectives established by the Government to protect human health. The AQS objectives [National Objectives] take into account EU Directives that set limit values which member states are legally required to achieve by their target dates.
- 2.2 The following figures indicate the most recent predictions of the NO<sub>2</sub> and PM<sub>10</sub> objectives across the Borough based on the LAEI 2013 (produced for the Greater London Authority).
- 2.3 *Figure 1* shows that concentrations of NO<sub>2</sub> in the Borough are predicted to exceed the air quality standard for this objective in 2015. Those areas with highest predicted concentrations are towards the north of the Borough in the Kingston Town neighbourhood and along the A3, which runs south west to north east through the Borough and crosses the other three neighbourhoods of Malden's and Coombe, South of the Borough and Surbiton.
- 2.4 Not surprisingly, it is mainly those areas closest to busy and congested roads that are predicted to exceed the objective, as is typical for similar Boroughs outside of central London. Those roads predicted to exceed the objectives include main trunk and other main roads across the Borough, including the A3, the A240 and A2043. Other roads that exceed the objective include the A243 and A308.

2.5 Similarly, the prediction of days exceeding the daily mean air quality standard for PM<sub>10</sub> are also related closely to roads across the Borough. *Figure 2* shows the number of days that are predicted exceed the 50µg m<sup>-3</sup> standard. Those areas coloured yellow exceed the objective of more than 35 days where levels are above the air quality standard. The area exceeding the objective is closely located on the A3 and in Kingston Town only.

*Figure 1: Predicted 2015 annual mean NO<sub>2</sub> concentrations in Royal Borough of Kingston upon Thames (from the LAEI 2013)*



*Figure 2: Predicted 2015 daily mean PM10 concentrations in Royal Borough of Kingston upon Thames (from the LAEI 2013)*



### **3.0 Air Quality Management Area**

3.1 An Air Quality Management Area (AQMA) has been declared for the whole of the borough area for the following pollutants:

3.1.1 **Nitrogen Dioxide** (NO<sub>2</sub>) because we are failing to meet the National Objective for this pollutant at some of our monitoring stations, and modelling indicates it is being breached at a number of other locations, and

3.1.2 **Particulate Matter** (PM<sub>10</sub>) because in some areas, close to busy roads, the daily mean objective limits are predicted to be exceeded.

3.2 In addition to considering the concentrations of pollutants, the system of Local Air Quality Management also requires people's exposure to the pollutants to be considered. As levels of nitrogen dioxide decrease rapidly with distance from the source, the proximity of receptors is a key consideration. The Air Quality Management Area designation, therefore, helps to ensure that adequate controls are in place to prevent future receptors from being located in areas where the air pollution levels exceed the health-based objectives.

#### **4.0 Air Quality Priorities**

- 4.1 This Action Plan has been drafted at a time of significant population increase across London as a whole that requires a substantial increase in the provision of housing and employment opportunities. The growing population means that by 2021 the Borough will need an additional 4,500 new homes and by 2026 4,000 additional jobs. Growth will not stop there, and linked to future major infrastructure investments such as Crossrail 2 there will be further need to identify opportunities to increase housing and employment provision. In response to this challenge the Council's Kingston Futures strategy seeks to harness the new development to deliver improvements in the attractiveness of the Borough. The focus of the growth agenda will be on the Borough's town centres, and on Kingston town centre in particular where monitoring and modelling shows that pollution levels are highest.
- 4.2 A key element of Kingston Futures role is to maintain the prosperity of the borough and the wellbeing of its residents during this time of great expansion. A vital strand of that work is the 'quality of place' and we must use every effort to maintain and, where possible, improve that.
- 4.3 However, we recognise that the predominant source of pollutants in the Borough is road transport and whilst a number of steps and initiatives are being proposed in this plan that are targeted at reducing dependence on, and the impact of, road transport there are limitations to the effect these can ultimately have given the levels of expansion proposed, the nature of our population and our geographical locations as a thoroughfare into Central London.
- 4.4 The plan sets out a number of actions and objectives utilising aspects of development control, transport planning and public health that will ensure not only promotion and choice of less polluting transport options but also exert control over the future development.

#### **5.0 Development and Implementation of the Air Quality Action Plan**

##### *Consultation and Stakeholder Engagement*

- 5.1 In updating the action plan we have worked with other local authorities, agencies, businesses and the local community to identify measures that can prevent deterioration or improve local air quality.



- 5.2 Following the requirements of Schedule 11 of the Environment Act 1995, we have consulted with the various local and national statutory bodies required of us, and have further extended consultation to include residents and local businesses.
- 5.3 Responses to the consultation were reported to the Adult and Children's Committee in March 2016, where changes to the Plan were agreed.

#### *Steering Group*

- 5.4 In developing this Plan, the Council established an Air Quality Working Group comprising officers from a number of departments with interests in or ability to influence air quality in the Borough. Membership included:
- Environmental Health
  - Traffic Management & Design
  - Strategic Policy (Development, Planning and Regeneration)
  - Assistant Director Public Health
  - Sustainable Travel & Climate Change
- 5.5 The working group will continue to meet in order to promote implementation of the plan and assess progress towards the objectives.

### **6.0 Air Quality Action Plan**

- 6.1 The table overleaf provides the detail of our Air Quality Action Plan.
- 6.2 It contains a number of initiatives both new and those that build on past actions, but does not include details of steps already being taken – as part of business as usual of the Council – such as:
- Integration of Air Quality Action Planning within the local development framework
  - Ensure relevant developments undertake air quality impact assessments
  - Undertake air quality monitoring in order to inform the status of air quality in the borough
  - Regulation of industrial emissions through the Environmental Permitting process
  - Enforcement of Clean Air Acts and Smoke Control Orders
  - Provide an extensive low emission vehicle charging infrastructure throughout the borough
  - Support basic cycle training in schools
  - Promote and support the use of car clubs by staff

## ROYAL BOROUGH OF KINGSTON UPON THAMES AIR QUALITY ACTION PLAN

	<b>Action</b>	<b>Responsibility</b>	<b>Timescale</b>	<b>Cost</b>	<b>AQ Impact</b>	<b>How will action be measured</b>	<b>Benefits</b>
	<b>Public Transport</b>						
1	The Council will review those bus routes for which it is responsible to identify opportunities to implement bus priority measures, with priority given to those routes that suffer from excessive delays.	Highway and Transport Service	Attendance at meetings with TfL to ensure RBK priorities are considered will continue from the onset of the Action Plan's adoption	Low	Medium	Average bus journey times and car journey times on routes where changes made	Shorter bus journeys , less idling leading to reduced localised pollution
2	The Council will work with partners including TfL and London Mayors Office to lobby for the introduction of low emission vehicles and fuel in hot spots of poorest air quality, including Cromwell Road.	Enforcement Services (Licensing and Environmental Compliance)  Asset Management  Sustainable Transport	Attendance at meetings with TfL to ensure RBK priorities are considered will continue from the onset of the Action Plan's adoption	Low	High	Outcomes from discussions with TfL that secure low emission vehicles on routes within the borough and the annual increase in low emission refuelling locations	Reduction in harmful emissions from vehicles performing a high number of journeys.

	<b>Action</b>	<b>Responsibility</b>	<b>Timescale</b>	<b>Cost</b>	<b>AQ Impact</b>	<b>How will action be measured</b>	<b>Benefits</b>
3	Work with TfL and other bus/rail operators to identify opportunities and secure improvements to bus/rail services	Highway and Transport  Transport for London	Attendance at meetings with TfL to ensure RBK priorities are considered will continue from the onset of the Action Plan's adoption	Low-Medium	Medium	Average bus / rail journey times on routes where improvements made; Using satisfaction rates with public transport collected by the council and the operating companies	Shorter journey times, increased use of sustainable transport can alleviate congestion on roads
	<b>Roads</b>						
4	Review the design of the one-way system around Kingston Town Centre and/or introduce a lower speed limit and retime the traffic signals	Highway and Transport	Long-term	High	Medium	Journey times through Kingston Town Centre, changes in transport modes used within the Town Centre,	Redesigning the one-way system may alleviate congestion which can reduce emissions from motor vehicles. However, the movement of all road users and pedestrians will need to be addressed in any redesign so as to encourage a modal shift away from motor vehicles.

	<b>Action</b>	<b>Responsibility</b>	<b>Timescale</b>	<b>Cost</b>	<b>AQ Impact</b>	<b>How will action be measured</b>	<b>Benefits</b>
5	Discuss with TFL the extension of the Low Emission Zone to cover more/all of Kingston	Environmental Compliance	Long Term	High	Medium	Attendance at regional meetings to put forward a case for the Borough	The Low Emission Zone would reduce emissions from larger vehicles and could have significant benefits over the wider area
6	<p>Investigate options to further reduce the impact of road works on traffic flow, including working with utilities companies to coordinate street works, use of variable message signs, advance notice, CCTV at road works to monitor the layout of works, traffic queues and signal timings.</p> <p>Introduce scheme to issue fixed penalty notices where roadworks over run timescales detailed in Permit to Work.</p>	<p>Highway and Transport Service</p> <p>Development Control</p> <p>Environmental Compliance</p>	Meet with relevant stakeholders to secure agreement by December 2016	Medium	Medium	<p>Number of sites where signs, messages and/or other interventions have been used to reduce congestion</p> <p>No of FPN's issued.</p>	Limit short term increases in emissions from congestion resulting from road works

	<b>Action</b>	<b>Responsibility</b>	<b>Timescale</b>	<b>Cost</b>	<b>AQ Impact</b>	<b>How will action be measured</b>	<b>Benefits</b>
7	Ensure that relevant Council policies such as vehicle hire, parking and planning give consideration to air quality and that appropriate measures are included	Enforcement Services Waste Management Highway and Transport Parking Commissioning Development Control Democratic Services	Short term with policies being reviewed when they come up for renewal.	Low	Low	Inclusion of policies that can benefit air quality in Council policies.  Inclusion of air quality implications in all committee reports	Although the review of Council policies in itself will not have a direct benefit on air quality, the implementation of the policies can have a significant impact
	<b>Cars</b>						
8	Promote the benefits of low emission vehicles to residents and businesses; increase awareness of available infrastructure, in particular existing EV charging infrastructure.	Enforcement Services (Licensing and Environmental Compliance) Communications	Details of charging points and links to relevant information included on Council website within 6 months.	Low	Low	Changes to number of users of charging network registered in the borough.  Work with TFL and other council departments to identify funding opportunities to promote LEV.	Helps promote use of sustainable transport options and reduce emissions from journeys into district centres.

	<b>Action</b>	<b>Responsibility</b>	<b>Timescale</b>	<b>Cost</b>	<b>AQ Impact</b>	<b>How will action be measured</b>	<b>Benefits</b>
			Opportunities for additional promotion and advertising to be identified within 12 months.				
9	Deter engine idling while waiting with initial focus on signage at schools and stations.	Enforcement Services (Licensing and Environmental Compliance)  Communications  Achieving for Children	2016	Low	Low	Number of no idling signs erected, number of campaigns to deter idling carried out.	The benefits are likely to be low and localised. However, raising awareness of the issue can result in wider behavioural change
10	Promote Car Clubs	Development Control  Enforcement (Licensing and Environmental Compliance)  Parking Services	Immediate	Low	Low	Number of developments where planning conditions attached requiring Car Club spaces to be provided. Determined by guidance in the London Plan. Number of members of Car Clubs in the borough.	Car Clubs can help to reduce the need for ownership of motor vehicles thus reducing the number of unnecessary journeys

	<b>Action</b>	<b>Responsibility</b>	<b>Timescale</b>	<b>Cost</b>	<b>AQ Impact</b>	<b>How will action be measured</b>	<b>Benefits</b>
	<b>Freight</b>						
11	<p>Improve freight access, loading, and servicing arrangements at key locations in the borough by</p> <p>(i) Road space allocation to reduce congestion during vehicles loading / unloading</p> <p>(ii) Promotion of Delivery and Servicing Plans to businesses</p> <p>(iii) Develop a signage strategy to improve navigation in areas of the borough</p>	<p>Highway and Transport Service</p> <p>Parking Services</p> <p>Planning Enforcement</p> <p>Environmental compliance</p>	April 2018	Medium	High	Number of locations where changes have been introduced to time allocations and/or spaces for freight deliveries; Number of Delivery and Servicing Plans submitted by commercial businesses in the borough.	Congestion reduction and promotion of sustainable delivery mechanisms.

	<b>Action</b>	<b>Responsibility</b>	<b>Timescale</b>	<b>Cost</b>	<b>AQ Impact</b>	<b>How will action be measured</b>	<b>Benefits</b>
	<b>Cycling and Go Cycling</b>						
12	<p>Improve cycle parking provision throughout the Borough:</p> <p>(i) By working with train and bus operators to provide fully secure and sheltered cycle parking at major public transport hubs</p> <p>(ii) Provide cycle parking at all Council operated buildings</p> <p>(iii) Encourage and support other public organisations to provide secure cycle parking, including schools, Kingston University, Kingston College and Kingston Hospital.</p>	Highway and Transport Service	Immediate and continuing throughout the life of the plan	<p>Low</p> <p>Low</p> <p>Low</p>	<p>Low</p> <p>Low</p> <p>Low</p>	<p>Number of additional parking facilities installed; percentage of installed cycle parking that is secure;</p> <p>1 transport hub per year</p> <p>No of council buildings where cycle parking provided.</p> <p>Engage with service providers. Number of organisations providing facilities</p>	Helps promote sustainable development, increase uptake of sustainable transport options and improve physical wellbeing



	<b>Action</b>	<b>Responsibility</b>	<b>Timescale</b>	<b>Cost</b>	<b>AQ Impact</b>	<b>How will action be measured</b>	<b>Benefits</b>
	<p>(iv) Encourage and support workplace, residential, leisure, retail, and other sites to provide cycle parking facilities.</p> <p>(v) Ensure that the council's own policies require new developments in the Borough to provide secure cycle parking in accordance with minimum standards set out in the London Plan, e.g. student accommodation 1 space per 2 beds.</p>		<p>2017</p> <p>Business as usual ongoing through the life of the plan</p>	<p>Low</p> <p>Low</p>	<p>Low</p> <p>Low</p>	<p>Liaise with service providers</p> <p>No of developments required to provide facilities.</p>	
13	Implement other measures to support and encourage cycling; including led commuter rides, Dr Bike sessions, and bicycle maintenance courses.	Highway and Transport Service	Annual service work plan will specify delivery of number of events and courses per year depending on	Low	Low	Number of led commuter rides held, number of Dr Bike sessions held, number of bicycle maintenance courses held, number of attendees at either commuter ride, Dr Bike	increase uptake of sustainable transport options and improve physical wellbeing to reduce congestion

	<b>Action</b>	<b>Responsibility</b>	<b>Timescale</b>	<b>Cost</b>	<b>AQ Impact</b>	<b>How will action be measured</b>	<b>Benefits</b>
			availability of resources			session or bicycle maintenance course	
14	Review the cycle network to address obstacles to continued cycle movement and increase the number of cycle routes that are segregated from motor vehicles	Highway and Transport	Cycle network improvements will be reviewed when deciding on annual LIP objectives and will be adopted from the start of the Plan	Medium	Medium	Number of cycle routes where identified improvements have been carried out, number of segregated cycle lanes implemented in the borough, % change in journeys being made by bicycle along improved routes	Increases uptake of sustainable transport options, improves physical well-being and helps to reduce congestion on roads
15	Expand existing cycle-hire schemes	Highway and Transport	2017	High	Medium	Number of registered users, number of journeys made by hired cycles.	Increases uptake of sustainable transport options, improves physical well-being and helps to reduce congestion on roads
	<b>Walking pedestrians</b>						
16	The Council will prioritise improvements to the strategic walking network and will give high priority to improving pedestrian	Highway and Transport Service	A commitment to include consideration of walking route improvements when deciding	Medium	Low	Number of locations where physical interventions have been carried out to benefit pedestrians. This can include	Helps promote sustainable development, improve physical wellbeing and can help to reduce congestion.

	<b>Action</b>	<b>Responsibility</b>	<b>Timescale</b>	<b>Cost</b>	<b>AQ Impact</b>	<b>How will action be measured</b>	<b>Benefits</b>
	connectivity across barriers such as major junctions, busy roads, rivers, and rail lines.		on annual LIP objectives will be adopted from start of the Plan			lighting, signage, resurfacing, etc.	
	<b>Travel Plans</b>						
17	Work with schools to better implement their travel plans to promote road safety and sustainable travel, prioritising schools for support that have the most significant transport problems and the greatest potential for mode shift.	Highway and Transport Service  Achieving for Children	Identify the 10 schools with the most significant transport problems within 6 months and review their Transport Plan within 18 months.	Low	Medium	% of schools in borough with active Travel Plans in place; number of schools attaining Gold, Silver or Bronze status	Helps promote use of sustainable transport options, improve physical wellbeing, influence behaviours and can help to reduce congestion
18	Require businesses allocated parking permits to develop travel plans to encourage employees to use sustainable travel modes.	Parking Services,  Highway and Transport Service	2018	Low	Low	Number of Travel Plans submitted by businesses in the borough; changes in modal share within businesses that have Travel Plans	Helps promote use of sustainable transport options and reduce emissions from journeys.

	<b>Action</b>	<b>Responsibility</b>	<b>Timescale</b>	<b>Cost</b>	<b>AQ Impact</b>	<b>How will action be measured</b>	<b>Benefits</b>
	<b>Development Control</b>						
19	Conditions will be imposed on any major new development within the AQMA to mitigate the impact of poor air quality	Enforcement Services (Licensing and Environmental Compliance)  Development Control	Ongoing	Low	High	Number of Air Quality Assessments and/or Air Quality Neutral assessments submitted through the development control process. (Number determined by thresholds/guidance set out in the London Plan)	Wide ranging benefits including reducing emissions from construction traffic, promoting low emission heat and power plant, reducing congestion, promoting sustainable transport options
20	Increase planting of trees and plant species by roadsides to create green barriers.  Work with Planners to change policy to require green initiatives such as green roofs, walls, trees and pocket parks	Enforcement Services  Green Spaces  Highway and Transport  Development Control	2017    Immediate	Low    Low	Low    Low	Number of street trees planted, number of green barriers installed, recorded changes in air quality concentrations as a result of barrier.    Number of green initiatives required as part of planning process.	Studies have shown that trees and green infrastructure can help to trap air pollution, especially particulate matter. However, the benefits are likely to be fairly localised

	<b>Action</b>	<b>Responsibility</b>	<b>Timescale</b>	<b>Cost</b>	<b>AQ Impact</b>	<b>How will action be measured</b>	<b>Benefits</b>
21	Reduce emissions from buildings through implementation of improved energy efficiency and technological solutions during renovations	Enforcement Services  Development Control  Sustainability Team	Potential refurbishments and renovations which could benefit to be identified prior to April 2017 and each year thereafter	Medium	Low	Number of buildings that have been renovated to include low emission measures such as installation of ultra-low NOx boilers	The benefits will depend on the scale of the renovation but are likely to be localised.
	<b>Partnerships</b>						
22	Work jointly with Public Health on relevant campaigns	Enforcement Services (Licensing and Environmental Compliance)  Public Health	Ongoing and continuing throughout the life of the plan	Low	Low	Number of campaigns on which Environmental Health and Public Health have worked jointly.	Encouraging people to make journeys on foot or by bike can deliver air quality benefits and complements Public Health objectives. The opportunities also exist to reach those most at risk from exposure to air pollution
23	Work with neighbouring boroughs (Sutton, Richmond, Merton, Wandsworth, Croydon) to bid for funds and deliver	Enforcement Services (Licensing and Environmental Compliance)	Ongoing and continuing throughout the life of the plan	Low	Low	Number of projects delivered jointly with neighbouring boroughs	Although the joint working and bidding for funds in themselves will not have a direct benefit on air quality, the implementation of the

	<b>Action</b>	<b>Responsibility</b>	<b>Timescale</b>	<b>Cost</b>	<b>AQ Impact</b>	<b>How will action be measured</b>	<b>Benefits</b>
	coordinated schemes over a wider area						projects can have a significant impact
	<b>Monitoring</b>						
24	Monitor air quality and provide information to residents to raise awareness and alert them on days when air pollution is higher  Offer support to schools on air quality promotions	Enforcement Services (Licensing and Environmental Compliance)  Communications	Immediate and ongoing through the life of the plan	Low	Low	Number of air quality monitoring sites, number of users in the borough who have registered to receive alerts via AirText, No of campaigns to promote AirText.	The monitoring of air quality in itself does not improve air quality. However, having meaningful data helps to monitor effectiveness of measures, is used to raise awareness about air quality and helps to reduce exposure by alerting vulnerable members of the public

### Air Quality Objectives

Air Quality Management Area pollutants of concern:

Pollutant	Objective		Date (due) to have been achieved by
	Concentration	Measured as	
Nitrogen Dioxide (NO <sub>2</sub> )	200 µg m <sup>-3</sup> not to be exceeded more than 18 times a year	1 hour mean	31 Dec 2005
	40 µg m <sup>-3</sup>	Annual Mean	31 Dec 2005
Particles (PM <sub>10</sub> )	50 µg m <sup>-3</sup> not to be exceeded more than 35 times a year	24 hour mean	31 Dec 2004
	40 µg m <sup>-3</sup>	Annual Mean	31 Dec 2004

*(Air Quality Regulations 2000 as amended)*

### Health impacts

**Nitrogen dioxide** (NO<sub>2</sub>) and nitric oxide (NO) are both oxides of nitrogen, and are collectively referred to as nitrogen oxides (NO<sub>x</sub>). All combustion processes produce NO<sub>x</sub> emissions, largely in the form of nitric oxide, which is then converted to nitrogen dioxide, mainly as a result of reaction with ozone in the atmosphere. It is nitrogen dioxide that is associated with adverse effects upon human health. NO<sub>2</sub> can irritate the lungs and lower resistance to respiratory infections such as influenza. Continued or frequent exposure to concentrations, which are, typically much higher than those normally found in the ambient air, may cause increased incidence of acute respiratory illness in children.

**Particles / Particulates** are measured in a number of size fractions according to their mean aerodynamic diameter. Most monitoring is currently focused on PM<sub>10</sub>, but the finer fractions such as PM<sub>2.5</sub> and PM<sub>1</sub> are great importance in terms of health effects. In view of this importance, PM<sub>2.5</sub> is now reported as an indicator for public health. Fine particles can be carried deep into the lungs where they can cause inflammation and a worsening of the condition of people with heart and lung diseases. In addition, they may carry surface-absorbed carcinogenic compounds into the lungs.