

# **Air Quality Action Plan 2014**



**In fulfillment of Part IV of the Environment Act 1995**

**Local Air Quality Management**

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## Introduction

A big part of our job at South Oxfordshire District Council (SODC) is making sure the district is a place where people want to come to live, work and enjoy. For some issues, like air quality, we're unable to tackle them on our own and have to work with local communities and other organisations before we can make a difference. Action plans like this one help us to do this.

Generally, air quality in the district is very good, but we have three areas where, due to traffic issues, air pollution exceeds the levels set by European and UK regulations (see appendix one for the NO<sub>2</sub> air quality standards).

When that happens, and we've established there's a risk of the public being significantly exposed to the pollution, we have to create what's known as an Air Quality Management Area (AQMA). We then have to come up with an action plan that sets out how we will work with others, who have the power to make the necessary changes to tackle the air quality problems in these areas. Appendix five sets out the legislation on air quality.

Our three Air Quality Management Areas are Henley-on-Thames, Wallingford and Watlington. This draft plan covers all three areas.

## Air pollution and health

The health effects of air pollution have been widely publicised and it is recognised by the government as a serious health threat to the population. Appendix one (table two) lists the sources of pollutants and their health effects.

South Oxfordshire District Council has declared three air quality management areas due to elevated levels of a pollutant called nitrogen dioxide (NO<sub>2</sub>). The main cause of this in South Oxfordshire is road traffic emissions. For the most part, road traffic actually emits nitric oxide (NO), but some of this becomes NO<sub>2</sub> over time. Together NO and NO<sub>2</sub> are referred to as NO<sub>x</sub>.

So the best way of reducing NO<sub>2</sub> is to try and reduce total nitrogen oxide (NO<sub>x</sub>) emissions in the first place.

The health risks of NO<sub>2</sub> because it's an irritant gas are that it can cause inflammation of the eyes, nose, throat and respiratory tract especially amongst those with existing respiratory problems. It can have both short-term 'acute' effects and long-term 'chronic' effects. The acute effects are caused by exposure to high levels of NO<sub>2</sub> in a short timeframe, but this is not a problem in South Oxfordshire<sup>1</sup>. Chronic effects are caused by exposure to lower levels of NO<sub>2</sub> over a long period of time. In the three areas we have declared as AQMAs NO<sub>2</sub> exceeds the standard of 40 micrograms per cubic metre of air (µg/m<sup>3</sup>) and over a long period of time this could lead to chronic health effects, hence the need for this plan.

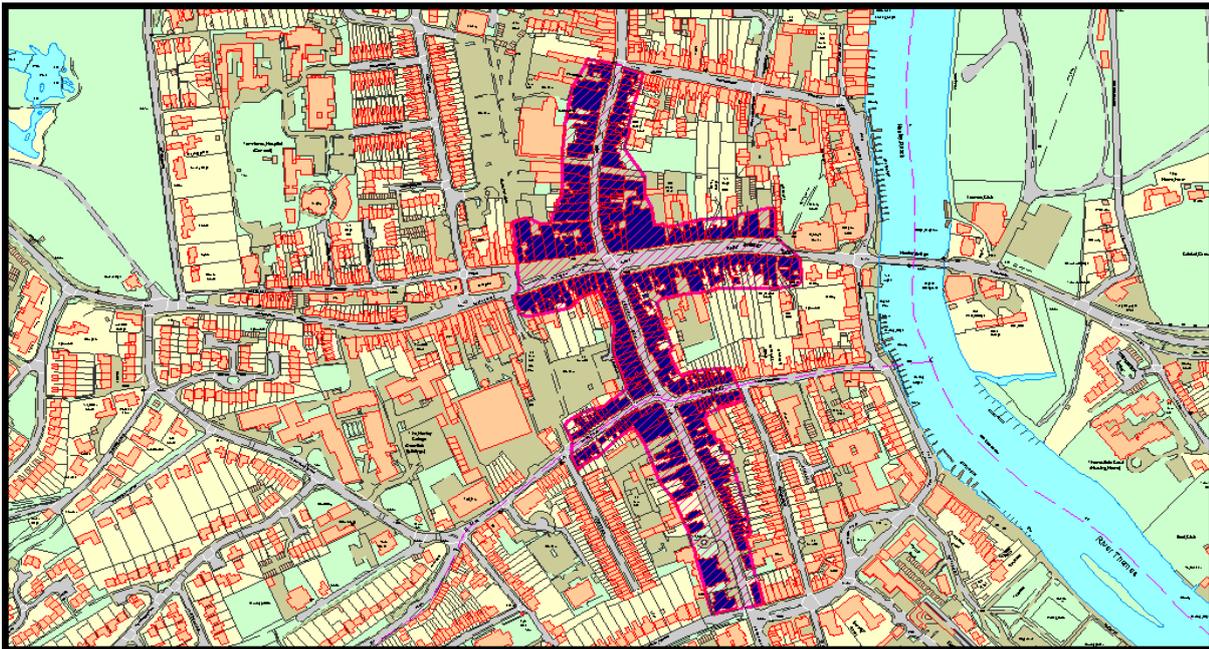
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<sup>1</sup> The short-term air quality standard for nitrogen dioxide is 200µg/m<sup>3</sup> as an hourly average. This short term objective is not currently being exceeded within any of the AQMAs within the district.

## Our AQMAs

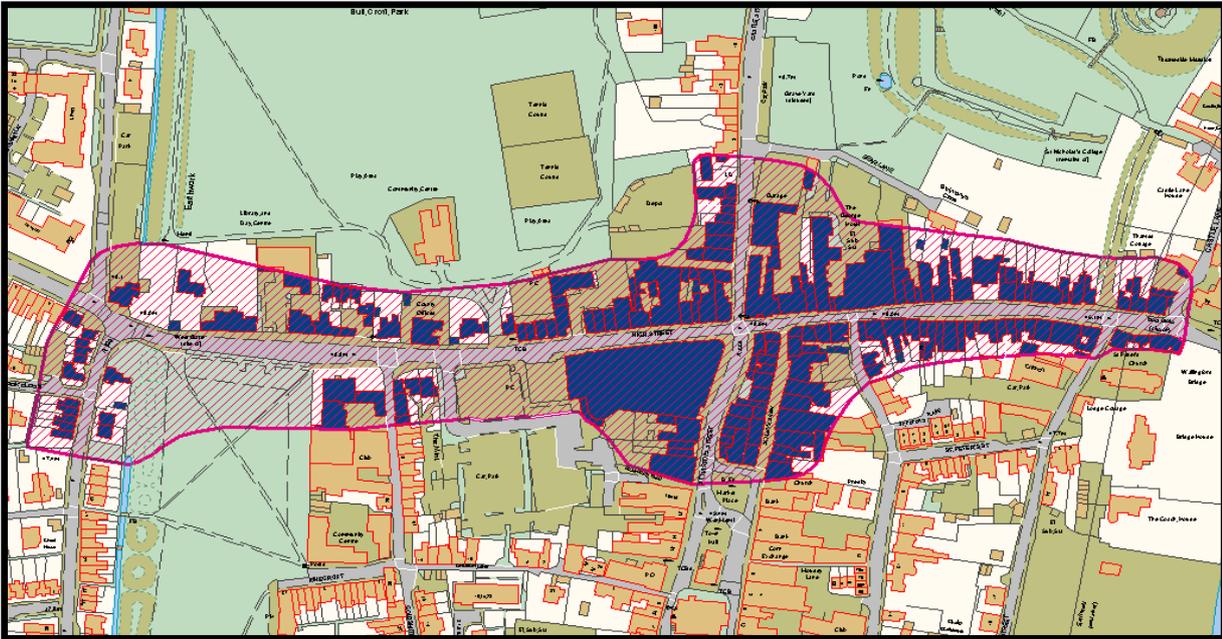
### HENLEY

We declared Henley as an AQMA (illustrated below) in 2002. It includes Duke Street, Bell Street and sections of Station Road, Hart Street, Greys Road, Friday Street and Market Place.



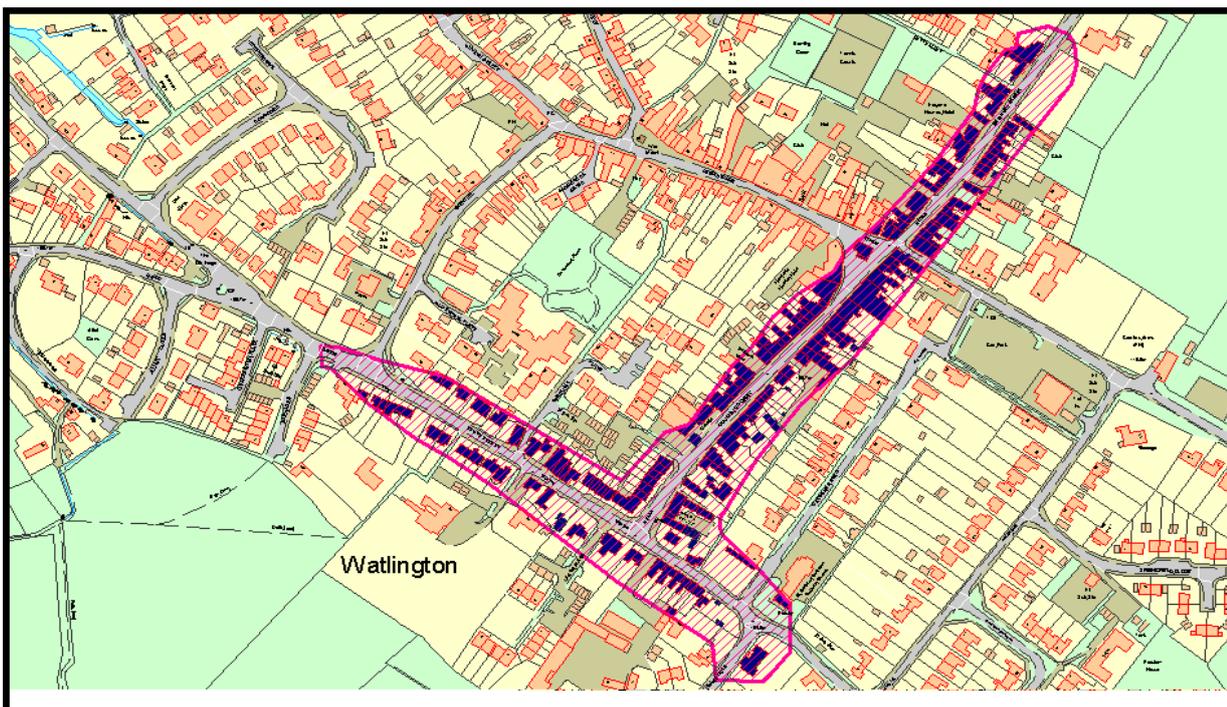
## WALLINGFORD

We declared Wallingford as an AQMA (illustrated below) in 2005. It includes sections of the High Street, Castle Street and St Mary's Street.



## WATLINGTON

We declared Watlington as an AQMA (illustrated below) in 2009. It includes Couching Street and sections of Shirburn Street and Brook Street.



## **What's been done so far**

### **HENLEY**

We produced an action plan for Henley in 2007.

One of the major actions in the plan was the introduction of an Intelligent Traffic System. This was an Oxfordshire County Council (OCC) initiative designed to smooth the traffic flow within Henley and reduce queuing times. OCC predicted this would have a positive effect on air quality; however the NO<sub>2</sub> concentrations continued to rise.

Consultants recently carried out modelling works to assess the effectiveness of different traffic scenarios in the town and to advise on the level of intervention needed to meet the air quality standards. Part of this work looked at the possibility of introducing a low emission zone (LEZ) where vehicles can only enter if they meet required standards. We've used the results of this work to inform the actions within this action plan which will replace the one produced in 2007.

### **WALLINGFORD**

We postponed the action plan so OCC could carry out a feasibility study into co-ordinating the traffic lights along the High Street to create a smooth flow of traffic through the town, known as a gating system. Our monitoring of NO<sub>2</sub> has not highlighted any clear improvements as a result of this trial. OCC also introduced traffic calming speed bumps in Crowmarsh to deter through traffic.

As in Henley consultants carried out modelling works to assess the effectiveness of different traffic scenarios in the town including the possibility of low emission zones and we've used the results of this work to inform the proposals within this action plan.

### **WATLINGTON**

We've included actions for Watlington in this draft action plan because it has not had one previously.

## Moving forward

The main aims of this action plan are to:

- improve air quality levels throughout the district and specifically within the AQMAs, to meet current air quality standards
- encourage a move towards more sustainable development within the district through the planning process
- encourage and enable greener transport throughout the district
- reduce air pollution and contribute to the development of more sustainable communities in order to help improve the health and well being of our residents.

To inform appropriate actions to meet these aims and to measure success in the future we needed to establish baseline data particularly for the three AQMAs. We established this through measuring and monitoring pollution and traffic and the results can be found in the area specific sections of this plan.

## The action plan approach

As we have three AQMAs in different locations throughout South Oxfordshire we've decided to take a district wide approach to producing an air quality action plan, so that the whole of the district benefits from the improvements in air quality. This is particularly important given that air pollutants cannot be contained and can spread as a result of changing weather patterns.

Therefore we've produced one over-arching plan which includes district wide actions as well as actions specifically for the AQMAs.

Whilst targeted at emissions of NO<sub>x</sub>, the actions in this plan are focused on moving towards more sustainable communities, which will lead to reductions in other pollutants such as carbon dioxide (CO<sub>2</sub>) and particulate matter (PM) as well. PM is a mixture of solid particles and liquid droplets found in the air made up of acids (such as nitrates and sulfates), organic chemicals, metals, and soil or dust particles.

We aim to achieve this through a collaborative approach between ourselves, OCC and the Oxfordshire Clinical Commissioning Group, Thames Valley Police alongside other key stakeholders and the public.

Some individual actions may have relatively little impact in isolation, but cumulatively could be significant in improving air quality.

## COST BENEFIT

We've categorised the effects and predicted costs for individual air quality actions as follows:

	<b>LOW</b>	<b>MEDIUM</b>	<b>HIGH</b>
<b>Air quality impact</b>	0-1 µg/m <sup>3</sup>	1-2 µg/m <sup>3</sup>	>2 µg/m <sup>3</sup>
<b>Cost (£)</b>	<100K	100-500K	>500K

# District wide actions

## GENERAL ACTIONS

### 1) Creation of a 'low emission strategy' and 'low emission zone' feasibility studies

<b>Action</b>	<p>A low emission strategy is a strategy that focuses on the reduction of transport emissions through an integrated package of measures looking at planning, procurement and transport policies. It includes the introduction of low emission technologies to reduce air pollution and climate change related emissions.</p> <p>A low emission zone is an area with particular traffic management measures in place to restrict vehicles not meeting specific emissions criteria.</p>		
<b>Justification</b>	<p>There are currently no low emission zone strategies for rural areas that we could apply to South Oxfordshire to identify appropriate LEZ actions, so we need to commission our own.</p> <p>It has been shown that the current uptake of such technologies and strategies have been low in rural areas so the need to identify ways of facilitating and implementing these is a priority.</p>		
<b>Benefits &amp; air quality impacts</b>	<ul style="list-style-type: none"> <li>the study could identify further actions to reduce NO<sub>x</sub>, CO<sub>2</sub> and PM emissions</li> </ul>		
<b>Costs/ barriers</b>	<ul style="list-style-type: none"> <li>the study may recommend actions that are not supported by businesses or that adversely affect the local economy</li> <li>the actions will have cost implications which the council and others will need to consider.</li> </ul>		
<b>Target completion date</b>	<b>Cost</b>	<b>Responsible agency</b>	<b>Measurable impact</b>
2016 (project underway)	LOW (~ £50,000) DEFRA grant funding secured	SODC OCC	Potential AQ impact: HIGH  Study identifies further cost effective actions that the council and others can take to address air quality.

## 2) Installation of electric vehicle recharging points

<b>Action</b>	<p>Provide electric vehicle recharging points in council car parks.</p> <p>Require electric vehicle recharging points in new developments and private car parks through planning conditions.</p>		
<b>Justification</b>	<p>Electric vehicles create no exhaust emissions and therefore help to improve air quality. However there are limited electric vehicle recharging points in the district and studies have shown this to be a barrier to their use.</p> <p>If predictions are right the next few years will see a revolution in the motoring industry as tens of thousands of electric vehicles hit the road.</p> <p>Increased provision of electric charging points along with their promotion should support the increase of electric vehicle uptake.</p>		
<b>Benefits &amp; air quality impacts</b>	<ul style="list-style-type: none"> <li>• reduced NOx and PM emissions</li> <li>• increased uptake of low emission vehicles</li> <li>• reduced CO<sub>2</sub> emissions (according to the Department for Transport electric vehicles could reduce CO<sub>2</sub> emissions by up to 40 per cent compared to the average car).</li> </ul>		
<b>Costs / barriers</b>	<ul style="list-style-type: none"> <li>• charging points not currently considered a selling point for developers</li> <li>• loss of annual revenue from council car parking of approximately £200 per space used to install a charging point</li> <li>• quicker charging points are more costly and more suited for short stays.</li> </ul>		
<b>Target completion date</b>	<b>Cost</b>	<b>Responsible agency</b>	<b>Measurable impact</b>
Dependent on funding and planning policies	LOW <£100 for domestic £6,000 for public £20,000 for quicker charging points	SODC, (planning) developers	Potential AQ impact: LOW-HIGH (dependent on uptake)  Number of charging points installed

### 3) Parking permit and pricing incentives for green vehicles

<b>Action</b>	<p>Offer free parking permits for residents with electric vehicles.</p> <p>Offer cut price parking permits for residents with low emission vehicles.</p> <p>Allow free parking for visitors in council car parks for electric vehicles.</p>		
<b>Justification</b>	<p>Electric vehicles create no exhaust emissions and therefore help to improve air quality.</p> <p>Offering incentives for using electric vehicles should increase their use.</p>		
<b>Benefits &amp; air quality impacts</b>	<ul style="list-style-type: none"> <li>• increased uptake of low emission vehicles</li> <li>• reduced NO<sub>x</sub>, PM and CO<sub>2</sub> emissions.</li> </ul>		
<b>Costs / barriers</b>	<ul style="list-style-type: none"> <li>• the actions will have cost implications which the council will need to consider.</li> </ul>		
<b>Target completion date</b>	<b>Cost</b>	<b>Responsible agency</b>	<b>Measurable impact</b>
Dependent on policy changes	LOW	SODC (facilities)	<p>Potential AQ impact: LOW</p> <p>Number of permits issued</p>

#### 4) Feasibility study for freight transport consolidation centre / freight quality partnership

<b>Action</b>	<p>In partnership with Oxfordshire authorities, commission a study to investigate the potential for an out of town freight consolidation centre (FCC). This would be a centre, close to the strategic road network, where HGVs would deliver goods, for onwards dispatch in smaller, greener vehicles.</p> <p>Part of this study will look into creating partnerships with freight companies to agree actions to improve air quality like using greener fleets and setting up route agreements.</p>		
<b>Justification</b>	<p>HGVs contribute approximately 30 per cent of road NOx within our AQMA and FCCs and freight partnerships have proven to reduce pollution and congestion.</p>		
<b>Benefits &amp; air quality impacts</b>	<ul style="list-style-type: none"> <li>• study could identify actions freight companies could take to reduce NOx, CO<sub>2</sub>, PM emissions, congestion and road noise</li> </ul>		
<b>Costs / barriers</b>	<ul style="list-style-type: none"> <li>• the other councils do not agree to a joint study</li> <li>• the study may recommend actions that are not supported by businesses or that adversely affect the local economy</li> <li>• the study may suggest actions that are not cost effective or affordable</li> <li>• we might not secure funding for this project.</li> </ul>		
<b>Target completion date</b>	<b>Cost</b>	<b>Responsible agency</b>	<b>Measurable impact</b>
2015 apply for funding Study completed 2016	LOW for study but HIGH for implementation	OCC Oxfordshire authorities	Potential AQ impact: HIGH (if pursued) Study identifies further cost effective actions to improve air quality

## 5) Taxi licensing incentives for green vehicles

<b>Action</b>	<p>Consider introducing a sliding scale where licence fees are linked to emissions.</p> <p>Consider introducing a limit on the age of vehicles when our licensing policy is next reviewed.</p>		
<b>Justification</b>	<p>There are over 800 taxis operating in South Oxfordshire and by encouraging taxi companies to use greener vehicles we can reduce their impact on air quality.</p> <p>Older vehicles create more pollution and therefore by limiting the age of a vehicle we can reduce emissions further.</p>		
<b>Benefits &amp; air quality impacts</b>	<ul style="list-style-type: none"> <li>• reduced NOx emissions</li> <li>• reduced CO<sub>2</sub> and PM emissions</li> <li>• taxi drivers may choose to purchase lower emissions vehicles if this policy is implemented.</li> </ul>		
<b>Costs / barriers</b>	<ul style="list-style-type: none"> <li>• taxi companies may not support the change in policy to limit the age in vehicles due to the cost implications of buying new ones.</li> </ul>		
<b>Target completion date</b>	<b>Cost</b>	<b>Responsible agency</b>	<b>Measurable impact</b>
2016	Officer time	SODC	<p>Potential AQ impact: LOW</p> <p>Changes to our licensing policy</p>

## 6) Improved use and enforcement of traffic regulation orders

<b>Action</b>	<p>Work with OCC to ensure current traffic orders, such as weight limits are being adhered to.</p> <p>Research the feasibility of issuing fixed penalty notices for engine idling or ignoring traffic orders.</p> <p>Research the potential effects of changing the existing weight restriction zone boundaries, or the impact of introducing further weight restriction zones.</p> <p>Enter into voluntary agreements with bus operators to prevent unnecessary idling.</p>		
<b>Justification</b>	<p>An idling engine releases twice as many fumes as a vehicle in motion. In South Oxfordshire this accounts for up to 45 per cent of total NOx emissions in our hotspots and councils have the power to reduce this through issuing fixed penalties to those drivers who refuse to turn their engines off.</p> <p>Reducing the number of engines running unnecessarily will also reduce congestion and associated pollution.</p>		
<b>Benefits &amp; air quality impacts</b>	<ul style="list-style-type: none"> <li>• reduced NOx emissions</li> <li>• reduced CO<sub>2</sub> and PM emissions</li> <li>• economic benefits to car owners in fuel savings.</li> </ul>		
<b>Costs / barriers</b>	<ul style="list-style-type: none"> <li>• police and OCC have limited budgets so enforcement costs may fall to local parish councils or communities</li> <li>• likely to prove very unpopular with motorists.</li> </ul>		
<b>Target completion date</b>	<b>Cost</b>	<b>Responsible agency</b>	<b>Measurable impact</b>
Research completed 2015	LOW	OCC Police SODC	Potential AQ impact: LOW Number of fixed penalty notices issued

## 7) Review of the council and contractors fleet

<b>Action</b>	<p>Explore the potential for 'green' (bio diesel) refuse collection vehicles.</p> <p>Explore the possibility of electric pool cars for council business use as in Oxford City Council and OCC.</p> <p>Consider updating our procurement policy to put greater emphasis on using greener vehicles for council contracts.</p>		
<b>Justification</b>	<p>HGVs contribute up to 30 per cent of road NOx emissions within our AQMAs. Each refuse vehicle does approximately 25,000 miles through the district each year.</p> <p>If we introduce greener vehicles not only would we make a modest contribution to reducing these emissions we would also lead by example.</p>		
<b>Benefits &amp; air quality impacts</b>	<ul style="list-style-type: none"> <li>• reduced NOx emissions</li> <li>• reduced CO<sub>2</sub> and PM emissions</li> <li>• economic benefits to fleet operators.</li> </ul>		
<b>Costs / barriers</b>	<ul style="list-style-type: none"> <li>• if we insist on green vehicles in contracts we would face higher costs</li> <li>• cost to council of procuring pool cars would be high but the savings we would make over time in petrol and business mileage payments could offset this.</li> </ul>		
<b>Target completion date</b>	<b>Cost</b>	<b>Responsible agency</b>	<b>Measurable impact</b>
<p>Research completed 2016</p> <p>Actions are funding dependant</p>	<p>MEDIUM (subject to outcome of procurement of vehicles)</p> <p>(~ £40,000 pool car option)</p>	<p>SODC OCC Contractor</p>	<p>Potential AQ impact: LOW-MEDIUM</p> <p>Change in policy to promote uptake of greener vehicles</p> <p>Greener vehicles in operation</p>

<b>8) Eco driver training</b>			
<b>Action</b>	To trial an eco driver scheme with council staff and if successful promote this to other transport operators.		
<b>Justification</b>	Trials of eco driver training have proved to reduce fuel use (up to 15 per cent) and emissions and we could achieve similar success if we piloted a scheme.		
<b>Benefits &amp; air quality impacts</b>	<ul style="list-style-type: none"> <li>• reduced NOx emissions</li> <li>• reduced CO<sub>2</sub> and PM emissions</li> <li>• economic benefits to transport operators if they adopt the scheme</li> <li>• increased safety on roads.</li> </ul>		
<b>Cost / Barriers</b>	<ul style="list-style-type: none"> <li>• it could be difficult to get people to buy into the scheme unless you make the training compulsory</li> <li>• benefits might be short term and refresher courses might be needed.</li> </ul>		
<b>Target completion date</b>	<b>Cost</b>	<b>Responsible agency</b>	<b>Measurable impact</b>
2016 trial completed  Further schemes are funding dependant	LOW ( £20 each = £8,000 for current staffing levels)	SODC	Potential AQ impact: LOW-MEDIUM Reduction in fuel use Number of drivers trained

## PLANNING INITIATIVES

### 9) Air quality planning guidance

<b>Action</b>	<p>Include air quality requirements in development policies.</p> <p>Include information on carrying out air quality assessments (see appendix 4) in planning guidance.</p>		
<b>Justification</b>	<p>This council currently only gives advice on planning applications that relate to an AQMA and therefore we miss opportunities to control emissions from developments outside of these areas.</p> <p>Planning applications are often delayed because air quality information isn't provided when they are first submitted.</p>		
<b>Benefits &amp; air quality impacts</b>	<ul style="list-style-type: none"> <li>• reduced emissions of NO<sub>x</sub>, CO<sub>2</sub> and PM from buildings</li> <li>• quicker processing of planning applications</li> <li>• create more sustainable homes and communities.</li> </ul>		
<b>Costs / barriers</b>	<ul style="list-style-type: none"> <li>• agents and developers building outside of the AQMAs may incur additional costs through carrying out air quality assessments and therefore they may not support this proposal.</li> </ul>		
<b>Target completion date</b>	<b>Cost</b>	<b>Responsible agency</b>	<b>Measurable impact</b>
2014	Officer time	SODC	<p>Potential AQ impact: LOW-HIGH</p> <p>Number of planning applications with air quality assessments</p> <p>Increase in Community infrastructure Levy funding received, to offset air pollution caused by developments</p> <p>Reduction in time taken to process planning applications for developments in AQMAs</p>

## PROMOTION AND AWARENESS

### 10) Awareness, behavioural change and community projects

<b>Action</b>	<p>Work with and support local groups on air quality projects.</p> <p>To encourage and support the introduction of air quality friendly renewable energy projects.</p> <p>Raise awareness of air quality issues to promote behavioural change, such as:</p> <ul style="list-style-type: none"> <li>• involvement in national campaigns e.g. ‘walk to school week’ and ‘national cycling week’</li> <li>• work with schools and business to promote alternative transport choices and education on air quality issues</li> <li>• provision of travel packs to businesses and residents</li> <li>• promoting car sharing schemes, pool car schemes as well as the uptake of alternative fuels and vehicles</li> <li>• encouraging walking and cycling as alternatives to the car</li> <li>• provision of new air quality website with real-time air quality data and other useful materials</li> </ul> <p>Encourage and support the introduction of green walls, roofs and other green space on existing developments.</p> <p>Work with other Oxfordshire authorities and public health bodies on future county wide initiatives to improve air quality.</p>		
<b>Justification</b>	<p>We cannot improve air quality on our own because it involves people changing their behaviours and some of the causes are outside of our control. Therefore we need to encourage others to take action with us to improve air quality.</p>		
<b>Benefits &amp; air quality impacts</b>	<ul style="list-style-type: none"> <li>• working collaboratively with communities and partners is more likely to attract additional funding into the district and deliver more projects to improve air quality</li> <li>• increased awareness of air quality to drive behavioural change</li> <li>• reduced emissions of NO<sub>x</sub>, CO<sub>2</sub> and PM.</li> </ul>		
<b>Costs / barriers</b>	<ul style="list-style-type: none"> <li>• it can be difficult to get people to buy in to partnership working.</li> </ul>		
<b>Target completion date</b>	<b>Cost</b>	<b>Responsible agency</b>	<b>Measurable impact</b>
ongoing	Unknown based on grant funding	SODC, Parishes Oxfordshire authorities Health bodies Community groups	Potential AQ impact: LOW-MEDIUM  Number of projects  Public awareness

# Henley specific actions

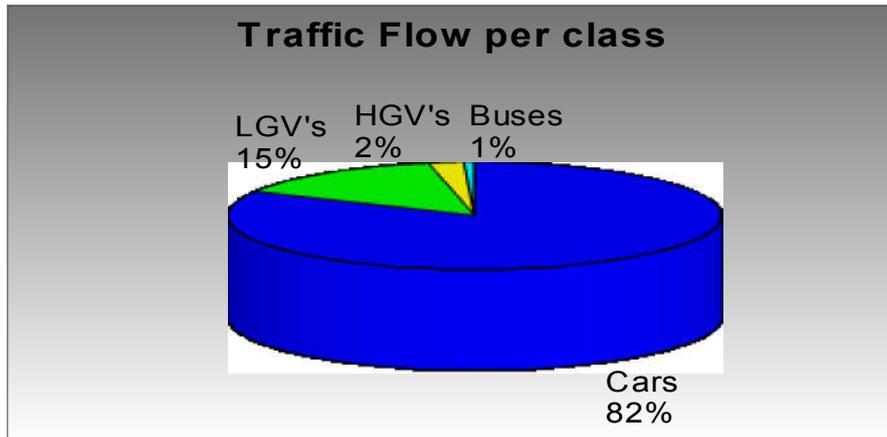
## BREAKDOWN OF EMISSIONS AND TARGETS FOR REDUCTION

**IN 2010 air quality levels exceeded air quality standards by 56 per cent (reaching  $62.4\mu\text{g}/\text{m}^3$  against the standard of  $40\mu\text{g}/\text{m}^3$ )**

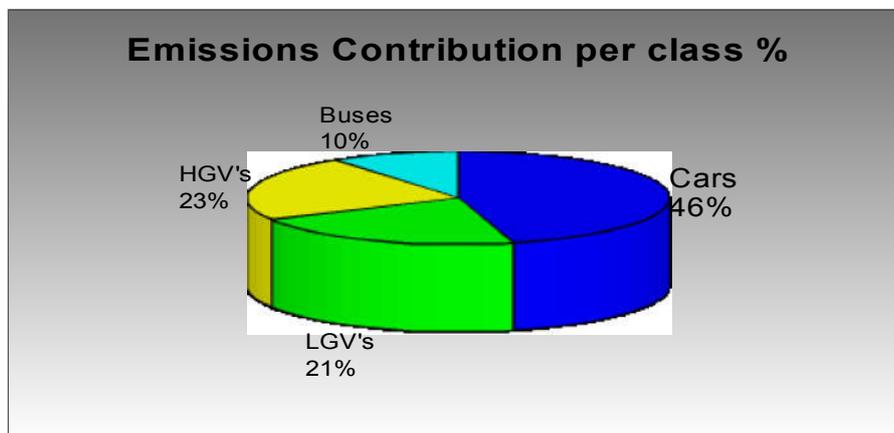
The charts below show that the majority of the traffic in Henley is cars but they only contribute 46 per cent of the road NO<sub>x</sub> levels. Conversely, HGVs and buses make up just three per cent of the traffic but contribute 33 per cent of the total emissions.

Therefore we need to focus on all vehicle types in order to achieve the improvements needed in air quality.

Through traffic is often perceived to be the primary cause of poor air quality in Henley but according to traffic counts this is only 30 per cent of the traffic in the town. The draft actions take this into account.



To meet the air quality standards for Henley we need to reduce NO<sub>2</sub> by  $22.4\mu\text{g}/\text{m}^3$ . In order to achieve this we need to reduce road NO<sub>x</sub> emissions by 36 per cent or total NO<sub>x</sub> emissions by 28 per cent.



## PROPOSED ACTIONS

<b>A1) Low emission zone feasibility study</b>			
<b>Action</b>	Commission a low emission feasibility study to identify further actions to improve air quality in Henley with a particular focus on HGVs and buses. Part of this study will look at the potential for a low emission zone that would mean vehicles could only enter the area if they meet required standards.		
<b>Justification</b>	Within the AQMA 33 per cent of road NOx emissions are attributable to HGVs and buses. The feasibility study would recommend actions to address this.		
<b>Benefits &amp; air quality impacts</b>	<ul style="list-style-type: none"> <li>the study should identify further actions to reduce NOx, CO<sub>2</sub> and PM emissions</li> </ul>		
<b>Costs / barriers</b>	<ul style="list-style-type: none"> <li>the study may recommend actions that are not supported by businesses or that adversely affect the local economy</li> <li>the actions will have cost implications which the council and others will need to consider.</li> </ul>		
<b>Target completion date</b>	<b>Cost</b>	<b>Responsible agency</b>	<b>Measurable impact</b>
2016 (project underway)	DEFRA grant funding received	SODC	<p>Potential AQ impact: HIGH (if pursued)</p> <p>Study identifies further cost effective actions that the council and others can take to address air quality</p>

## A2) Park and stride campaign

<b>Action</b>	Introduce a park and stride campaign to encourage people to park out of town, where it is either free or considerably cheaper than town centre car parks.		
<b>Justification</b>	46 per cent of NOx emissions within the AQMA are attributable to car emissions. This campaign along with the other actions recommended for Henley, could help improve air quality.		
<b>Benefits &amp; air quality impacts</b>	<ul style="list-style-type: none"> <li>• reduced NOx emissions</li> <li>• reduced CO<sub>2</sub> and PM emissions</li> <li>• reduced congestion</li> <li>• health benefits.</li> </ul>		
<b>Costs / barriers</b>	<ul style="list-style-type: none"> <li>• we may not find a suitable car park to join the scheme</li> <li>• the campaign may not encourage people to park and stride.</li> </ul>		
<b>Target completion date</b>	<b>Cost</b>	<b>Responsible agency</b>	<b>Measurable impact</b>
2017 funding dependant	LOW (estimated £5000 + officer time)	SODC OCC Town/Parish councils	Potential AQ impact: LOW Car park use shifts from town centres to out of town car parks

### A3) Cut your Engine Campaign

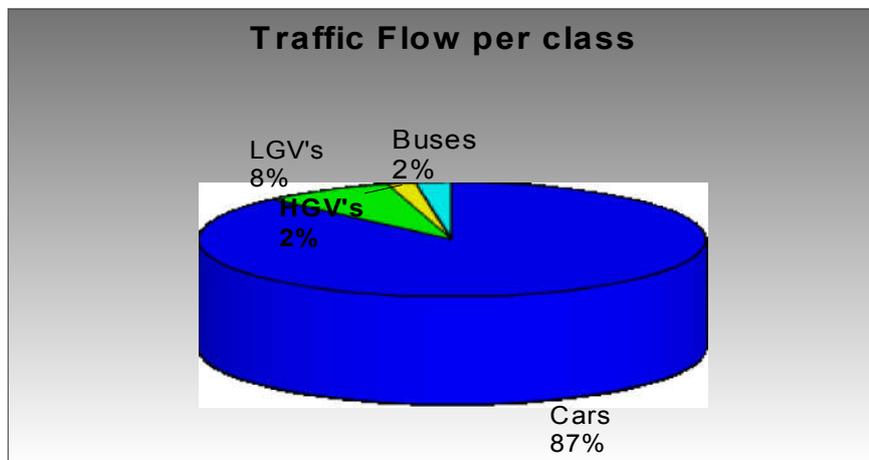
<b>Action</b>	Launch a new campaign to encourage drivers to switch their engines off when queuing at traffic lights.		
<b>Justification</b>	<p>77 per cent of NOx emissions within the AQMA are attributable to vehicle emissions. Raising awareness of the benefits of turning off engines while stationary, in terms of fuel consumption and air quality, should reduce emissions in Henley given there is a lot of queuing traffic there.</p> <p>We could also raise awareness of the fact that there are cars that cut out automatically when stationary.</p>		
<b>Benefits &amp; air quality impacts</b>	<ul style="list-style-type: none"> <li>• reduced NOx emissions</li> <li>• reduced CO<sub>2</sub> and PM emissions</li> <li>• increased public awareness.</li> </ul>		
<b>Costs / barriers</b>	<ul style="list-style-type: none"> <li>• this action is about behaviour change which is difficult to achieve and sustain</li> <li>• we may not secure funding for this project</li> <li>• the success of the campaign will depend on community buy in.</li> </ul>		
<b>Target completion date</b>	<b>Cost</b>	<b>Responsible agency</b>	<b>Measurable impact</b>
2017 funding dependant	LOW	SODC OCC	<p>Potential AQ impact: LOW</p> <p>Spot surveys to quantify the number of people switching off their engines against baseline data</p>

## WALLINGFORD SPECIFIC ACTIONS

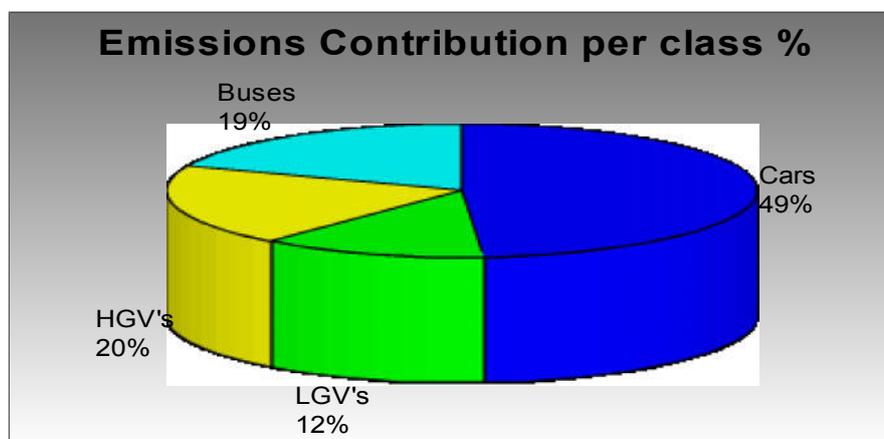
### BREAKDOWN OF EMISSIONS AND TARGETS FOR REDUCTION

In 2010 air quality levels exceeded air quality standards by 30 per cent (reaching  $52\mu\text{g}/\text{m}^3$  against the standard of  $40\mu\text{g}/\text{m}^3$ )

The charts below show that 87 per cent of the traffic in Wallingford is cars which create 49 per cent of the road NO<sub>x</sub> levels. Conversely, HGVs and buses make up just four per cent of the traffic but create 39 per cent of the total emissions. This illustrates that per vehicle HGVs and buses create more NO<sub>2</sub> emissions than cars. This is why our proposed actions focus on all vehicle types.



To meet the air quality standards for Wallingford we have to reduce NO<sub>2</sub> by  $12\mu\text{g}/\text{m}^3$ , this means we need to reduce road NO<sub>x</sub> emissions by 23 per cent or total NO<sub>x</sub> emissions by 18 per cent.



## PROPOSED ACTIONS

<b>B1) Low emission zone feasibility study</b>			
<b>Action</b>	Commission a low emission feasibility study to identify further actions to improve air quality in Wallingford with a particular focus on HGVs and buses. Part of this study will look at the potential for a low emission zone that would mean vehicles could only enter the area if they meet required standards.		
<b>Justification</b>	Within the AQMA 39 per cent of road NOx emissions are attributable to HGVs and buses. The feasibility study would recommend actions to address this.		
<b>Benefits &amp; air quality impacts</b>	<ul style="list-style-type: none"> <li>the study should identify further actions to reduce NOx, CO<sub>2</sub> and PM emissions.</li> </ul>		
<b>Costs / barriers</b>	<ul style="list-style-type: none"> <li>the study may recommend actions that are not supported by businesses or that adversely affect the local economy</li> <li>the actions will have cost implications which the council and others will need to consider.</li> </ul>		
<b>Target completion date</b>	<b>Cost</b>	<b>Responsible agency</b>	<b>Measurable impact</b>
2016 (project underway)	DEFRA grant funding received	SODC	<p>Potential AQ impact: HIGH (if pursued)</p> <p>Study identifies further cost effective actions that the council and others can take to address air quality</p>

<b>B2) Increased use of the ring road</b>			
<b>Action</b>	Develop a campaign to encourage use of the ring road and explore whether satellite navigation companies can help by re-programming their systems to do this.		
<b>Justification</b>	According to OCC data the ring road route whilst 2km longer can be up to 4 minutes 20 seconds quicker. By encouraging people to use this quicker route we can improve air quality in the town.		
<b>Benefits &amp; air quality impacts</b>	<ul style="list-style-type: none"> <li>• reduced NOx emissions</li> <li>• reduced CO<sub>2</sub> and PM emissions</li> <li>• reduced congestion in the town.</li> </ul>		
<b>Costs / barriers</b>	<ul style="list-style-type: none"> <li>• it may not be possible for satellite companies to re-programme their systems</li> <li>• changing driver behaviour will be difficult.</li> </ul>		
<b>Target completion date</b>	<b>Cost</b>	<b>Responsible agency</b>	<b>Measurable impact</b>
2017 Funding dependant	LOW estimated £5,000 and officer time	SODC OCC	Potential AQ impact: LOW  Traffic counts show increased use of the ring road and reduced traffic through the town centre

<b>B3) Park and stride campaign</b>			
<b>Action</b>	Introduce a park and stride campaign to encourage people to park out of town, where it is either free or considerably cheaper than town centre car parks.		
<b>Justification</b>	49 per cent of NOx emissions within the AQMA are attributable to car emissions. This campaign along with the other actions recommended for Wallingford, could help improve air quality.		
<b>Benefits &amp; air quality impacts</b>	<ul style="list-style-type: none"> <li>• reduced NOx emissions</li> <li>• reduced CO<sub>2</sub> and PM emissions</li> <li>• reduced congestion</li> <li>• health benefits.</li> </ul>		
<b>Costs / barriers</b>	<ul style="list-style-type: none"> <li>• the campaign may not encourage people to park and stride</li> </ul>		
<b>Target completion date</b>	<b>Cost</b>	<b>Responsible agency</b>	<b>Measurable impact</b>
2017 Funding dependant	LOW (estimated £5000 + officer time)	SODC OCC Town/Parish councils	Potential AQ impact: LOW Car park use shifts from town centres to out of town car parks

<b>B4) Cut your engine campaign</b>			
<b>Action</b>	Launch a new campaign to encourage drivers to switch their engines off when queuing at traffic lights.		
<b>Justification</b>	<p>83 per cent of NOx emissions within the AQMA are attributable to vehicle emissions. Raising awareness of the benefits of turning off engines while stationary, in terms of fuel consumption and air quality, should reduce emissions in Wallingford given there is a lot of queuing traffic there.</p> <p>We could also raise awareness of the fact that there are cars that cut out automatically when stationary.</p>		
<b>Benefits &amp; air quality impacts</b>	<ul style="list-style-type: none"> <li>• reduced NOx emissions</li> <li>• reduced CO<sub>2</sub> and PM emissions</li> <li>• increased public awareness.</li> </ul>		
<b>Costs / Barriers</b>	<ul style="list-style-type: none"> <li>• this action is about behaviour change which is difficult to achieve and sustain</li> <li>• we may not secure funding for this project</li> <li>• the success of the campaign will depend on community buy in.</li> </ul>		
<b>Target completion date</b>	<b>Cost</b>	<b>Responsible agency</b>	<b>Measurable impact</b>
2017 funding dependant	LOW	SODC OCC	<p>Potential AQ impact: LOW</p> <p>Spot surveys to quantify the number of people switching off their engines against baseline data</p>

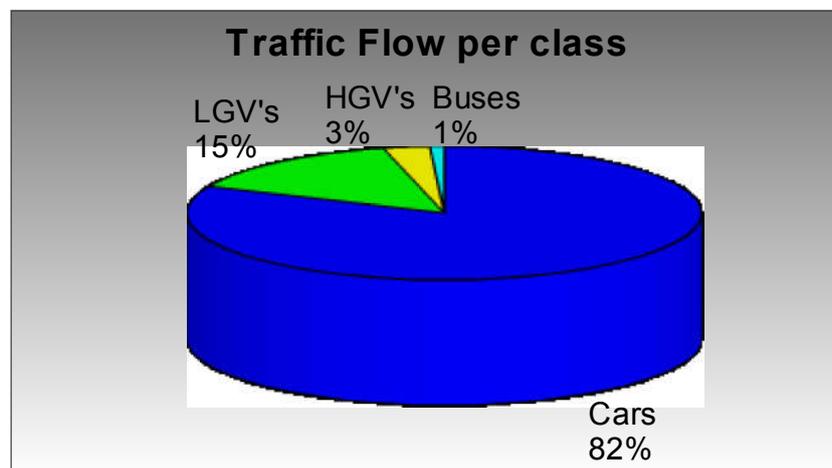
## WATLINGTON SPECIFIC ACTIONS

### BREAKDOWN OF EMISSIONS AND TARGETS FOR REDUCTION

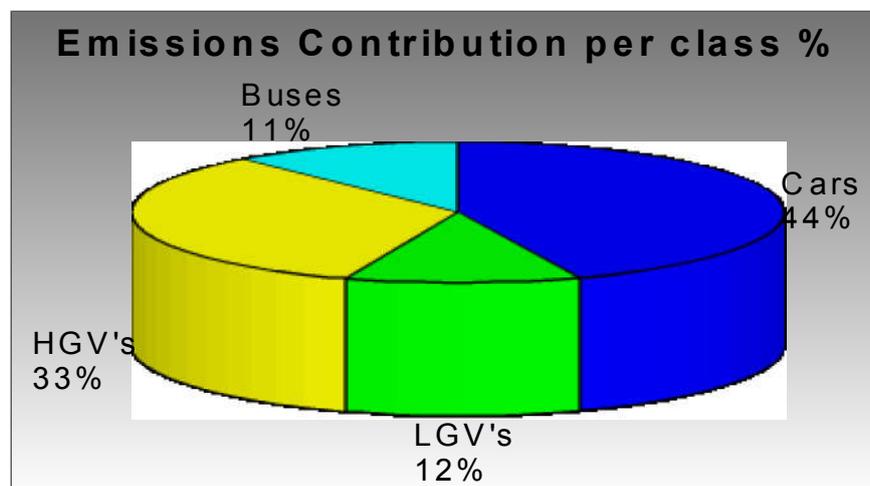
In 2010 air quality levels exceeded air quality standards by 28 per cent (reaching  $51\mu\text{g}/\text{m}^3$  against the standard of  $40\mu\text{g}/\text{m}^3$ )

The chart below shows that 82 per cent of the traffic in Watlington is cars which create 44 per cent of the road NO<sub>x</sub> levels. Conversely, HGVs and buses make up just four per cent but also create 44 per cent of the total emissions.

HGVs and buses create more emissions than cars, per vehicle which is why the proposed actions focus on all vehicle types. The main traffic issue in Watlington is the pinch point at the central crossroads; the proposed actions seek to address this issue.



To meet the air quality standards for Watlington we have to reduce NO<sub>2</sub> by  $11\mu\text{g}/\text{m}^3$ , this means we need to reduce road NO<sub>x</sub> emissions by 22 per cent or total NO<sub>x</sub> emissions by 17 per cent.



## PROPOSED ACTIONS

<b>C1) Low emission zone feasibility study</b>			
<b>Action</b>	Commission a low emission feasibility study to identify further actions to improve air quality in Watlington with a particular focus on HGVs and buses. Part of this study will look at the potential for a low emission zone that would mean vehicles could only enter the area if they meet required standards.		
<b>Justification</b>	Within the AQMA 44 per cent of road NOx emissions are attributable to HGVs and buses. The feasibility study would recommend actions to address this.		
<b>Benefits &amp; air quality impacts</b>	<ul style="list-style-type: none"> <li>it will identify actions to reduce NOx, CO<sub>2</sub> and PM emissions.</li> </ul>		
<b>Costs / barriers</b>	<ul style="list-style-type: none"> <li>the study may recommend actions that are not supported by businesses or that adversely affect the local economy</li> <li>the actions will have cost implications which the council and others will need to consider.</li> </ul>		
<b>Target completion date</b>	<b>Cost</b>	<b>Responsible agency</b>	<b>Measurable impact</b>
2016 Project underway	DEFRA grant funding received	SODC	<p>Potential AQ impact: HIGH (if pursued)</p> <p>Study identifies further cost effective actions that the council and others can take to address air quality</p>

## C2) Increased enforcement and review of the weight restriction zone (WRZ)

<b>Action</b>	<p>Enforce the WRZ more rigorously.</p> <p>Review and, if necessary, improve signage at the entrance to the WRZ.</p> <p>Investigate the effects on air quality, of a reduction in the geographical area of the WRZ.</p> <p>Investigate the effects on air quality and congestion, of a reduction in the weight limit on the WRZ.</p>		
<b>Justification</b>	<p>HGV traffic in Watlington is not just an air quality issue but also a safety issue because HGVs mount the pavement. Their movement is controlled by a WRZ barring the entry of vehicles &gt;7.5 tonnes unless they have business in the area. The current WRZ is very large (see appendix two) meaning a large number do have business within the area. The current WRZ is sporadically enforced. An increase in enforcement activity would act as a deterrent to those breaching the zone. It could also provide more information on the type, size, duration and nature of the current HGV movements through Watlington, which may better inform actions to reduce these movements.</p> <p>There is anecdotal evidence of HGV drivers breaching the WRZ suggesting the signage at junction six is not clearly visible.</p>		
<b>Benefits &amp; air quality impacts</b>	<ul style="list-style-type: none"> <li>• reduced NOx, CO<sub>2</sub> and PM emissions</li> <li>• environmental benefits</li> <li>• reduced congestion.</li> </ul>		
<b>Costs / barriers</b>	<ul style="list-style-type: none"> <li>• potential of signage clutter at junction six</li> <li>• there are cost implications for OCC</li> <li>• there is only a small team to deal with all of Oxfordshire's WRZs, and therefore they may not have the resources to provide more regular enforcement however the community could get involved and make a contribution.</li> </ul>		
<b>Target completion date</b>	<b>Cost</b>	<b>Responsible agency</b>	<b>Measurable impact</b>
Research completed 2015	LOW	OCC Police SODC	Potential AQ impact: LOW-MEDIUM Vehicle counts

### C3) Smoothing traffic flow

<b>Action</b>	<p>Investigate the potential impact of:</p> <p>The removal of on-street parking along Couching Street and part of Shirburn Street.</p> <p>Introducing measures based on the Dorset villages model, such as lowering speed limits, changing road markings and using different road surfaces.</p>		
<b>Justification</b>	<p>Smoothing the traffic flow would reduce emission levels. It would reduce idling and lower acceleration levels, allowing the gating system to work more efficiently and reduce congestion levels within the town.</p> <p>Currently parked cars along Couching Street and Shirburn Street cause congestion and increased idling followed by increased acceleration and braking. However traffic parking acts as a speed reduction tool in Watlington.</p> <p>The Dorset model has been successfully applied in a number of locations. It calms traffic by introducing a village like feel to an area, defining areas with features such as cobbles and coloured tarmac rather than road signs and lines. These features cause drivers to behave with more caution. There is evidence that by removing the white lines from the centre of the road reduces speeding by giving a narrowing feel to the road.</p>		
<b>Benefits &amp; air quality impacts</b>	<ul style="list-style-type: none"> <li>• reduced NOx CO<sub>2</sub> and PM emissions along with other environmental benefits</li> <li>• reduced congestion</li> <li>• increased road safety</li> <li>• creating a village feel in the town.</li> </ul>		
<b>Costs / barriers</b>	<ul style="list-style-type: none"> <li>• not currently part of OCC's transport programme and funding would need to be identified</li> <li>• on street parking restrictions may not be popular.</li> </ul>		
<b>Target completion date</b>	<b>Cost</b>	<b>Responsible agency</b>	<b>Measurable impact</b>
Research complete 2016 (actions depend on OCC support and funding)	LOW	OCC SODC	Potential AQ impact: MEDIUM On street parking removed Other calming measures introduced

## Implementation

In order to deliver some of the more expensive actions in this plan, this council will need to secure external funding to supplement money that we allocate from our general funds. We will apply to grant giving organisations and seek contributions from developers through section 106 agreements, where appropriate. We will consider using funding gained through the Community Infrastructure Levy once this is in place. We will support OCC in applications for funding towards its transport actions.

The success of the action plan depends on all of the partners delivering their specific actions and contributing to joint ones. We have involved partners in drafting these actions to ensure their buy in. OCC has been heavily involved in this draft plan as by law they must put forward transport related actions they can implement, to work towards meeting the air quality standards.

## **Evaluation and monitoring**

The government accepts that it is not always possible to achieve air quality standards but expects councils to demonstrate that they are working towards them. By delivering the actions in this plan we are showing our commitment to achieving them and improving air quality.

We will continue to monitor air quality across the district to assess the impact of the actions contained in this plan and will publish the results annually on our website.

Every five years we will review our plan to assess improvements in air quality and progress on delivering the actions. We will consult on any changes to actions in the plan as a result of the findings of the reviews.

# Appendix 1

## AIR POLLUTION OBJECTIVES: TABLE ONE

We have to do an annual review of all of the objectives set out in the Air Quality Regulations 2003. This review is sent to DEFRA for approval. The latest review has shown NO<sub>2</sub> is the only pollutant that is above the objective in South Oxfordshire. The other pollutants are well within the objectives and so no action is required. These are listed below:

- Benzene
- 1,3 Butadiene
- Carbon monoxide
- Lead
- Particles (PM<sub>10</sub>)
- Sulphur dioxide.

The objective for NO<sub>2</sub> is as follows

Pollutant	Air Quality Objective		Date to be achieved by
	Concentration	Measured as	
Nitrogen dioxide	200 µg/m <sup>3</sup> not to be exceeded more than 18 times a year	1 hour mean	31.12.2005 - achieved
	40 µg/m <sup>3</sup>	annual mean	31.12.2005 – not achieved

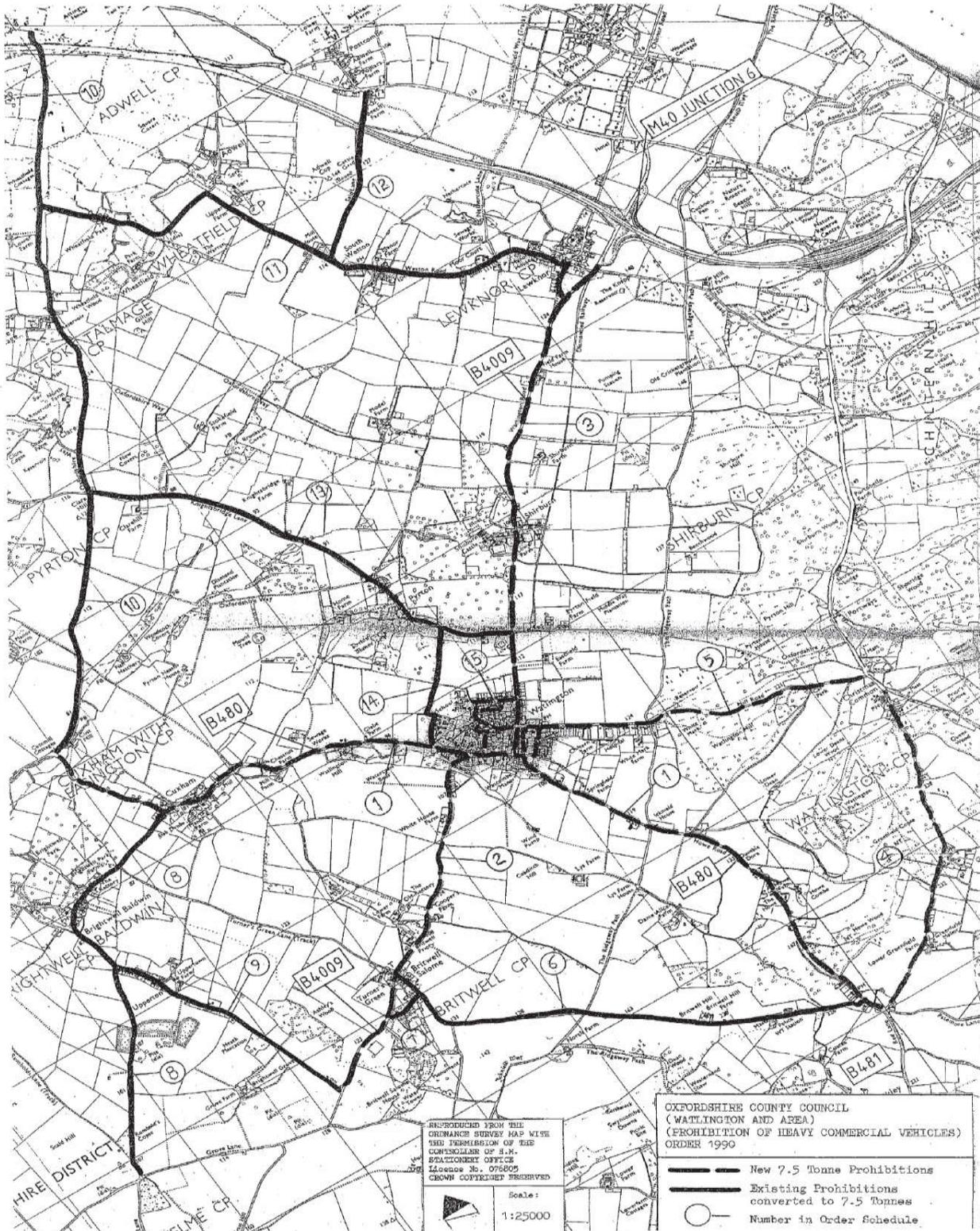
## HEALTH EFFECTS OF AIR QUALITY: TABLE TWO

Sources of pollutants and health effects		
Pollutant	Sources	Health Effects
<b>Nitrogen Dioxide</b>	Nitric oxide (NO) is mainly derived from road transport emissions and other combustion processes such as the electricity supply industry. Nitric oxide is not considered to be harmful to health. However, once released to the atmosphere, NO is mostly very rapidly oxidized, mainly by ozone (O <sub>3</sub> ), to nitrogen dioxide (NO <sub>2</sub> ), which can be harmful to health. NO <sub>2</sub> and NO together are referred to as nitrogen oxides (NO <sub>x</sub> ).	Nitrogen dioxide can irritate the lungs and lower resistance to respiratory infections such as influenza. Continued or frequent exposure to concentrations that are typically much higher than those normally found in the ambient air may cause increased incidence of acute respiratory illness in children.
<b>Fine Particles (PM<sub>10</sub>, PM<sub>2.5</sub> and PM<sub>3</sub>)</b>	Fine particles are a complex mixture of extremely small particles and liquid droplets made up of a number of components, including acids (such as nitrates and sulfates), organic chemicals, metals, and soil or dust particles.	Particles are measured according to their mean aerodynamic diameter. Most monitoring is currently focused on PM <sub>10</sub> , but monitoring of the finer fractions PM <sub>2.5</sub> and PM <sub>3</sub> is increasing due to their effects on health. Fine particles can be carried deep into the lungs where they can cause inflammation and aggravate existing heart and lung diseases. They may also carry surface-absorbed carcinogenic compounds into the lungs.
<b>Sulphur Dioxide</b>	Sulphur dioxide (SO <sub>2</sub> ) is produced when a material, or fuel, containing sulphur is burned. In the UK the predominant source is power stations burning fossil fuels, principally coal and heavy oils. Widespread domestic use of coal can also lead to high local concentrations of SO <sub>2</sub> .	Even moderate concentrations may result in reduced lung function in asthmatics. High levels can cause people to experience tightness in the chest and coughing, and in asthmatics reduce lung function to the extent they may require medical attention. Sulphur dioxide pollution is more harmful when particulate and other pollution concentrations are high.

<b>Benzene</b>	Benzene is a volatile organic compound which is found in small quantities in petrol. Motor vehicle exhaust is the single biggest source of this pollutant.	Possible chronic health effects include cancer, central nervous system disorder, liver and kidney damage, reproductive disorders, and birth defects.
<b>1,3-Butadiene</b>	1,3-butadiene, like benzene, is a volatile organic compound emitted into the atmosphere principally from fuel combustion of petrol and diesel vehicles.	Possible chronic health effects include cancer, central nervous system disorder, liver and kidney damage, reproductive disorders, and birth defects.
<b>Carbon Monoxide</b>	Carbon monoxide is a colourless, odourless, tasteless, poisonous gas produced by incomplete, or inefficient, combustion of fuel. It is predominantly produced by road transport, in particular petrol-engine vehicles.	This gas prevents the normal transport of oxygen by the blood. This can lead to a significant reduction in the supply of oxygen to the heart, particularly in people suffering from heart disease.
<b>Lead</b>	Since the introduction of unleaded petrol in the UK there has been a significant reduction in lead levels. Recently industries recycling metals without iron in them, have become the most significant contributors to emissions of lead.	<p>Lead poisoning builds up slowly over time from repeated exposure to small amounts of lead. Over time, even low levels of lead exposure can harm a child's mental development. The health problems get worse as the level of lead in the blood gets higher.</p> <p>Lead is more harmful to children than adults because it can affect children's developing nerves and brains. The younger the child, the more harmful lead can be. Unborn children are the most vulnerable.</p>

# Appendix 2

## WATLINGTON WEIGHT RESTRICTION ZONE



## **Appendix 3**

### **OPTIONS CONSIDERED BUT NOT VIABLE AT THIS TIME**

#### **ACTION PLAN LAUNCH DAY**

##### **Desired outcome**

To raise awareness of air quality issues and how residents can help through a family fun day.

To promote the actions organisations have committed to deliver to improve air quality.

##### **Reason for rejecting this option**

An air quality event is unlikely to attract many residents unless it offers activities that attract families which can be costly and need staff to support. Neither us or the county can provide these resources at this at time.

#### **HENLEY BY PASS OR NEW BRIDGE CROSSING**

##### **Desired outcome**

To encourage traffic to use the bypass or bridge instead of going through the town.

##### **Reason for rejecting this option**

OCC cannot commit to this as it is not identified in its Local Transport Plan which sets out how it will spend its transport budget over the next five years.

The action is unlikely to be included in the future as funding for transport schemes is now usually from section 106 agreements which would mean a significant number of new houses would have to be built in Henley in order to fund this measure.

#### **ONE WAY SYSTEM IN WALLINGFORD OR NO THROUGH ROAD**

##### **Desired outcome**

To encourage traffic to use the bypass instead of going through the town.

##### **Reason for rejecting this option**

OCC cannot commit to this as it is not identified in its Local Transport Plan which sets out how it will spend its transport budget over the next five years.

The action is unlikely to be included in the future as funding for transport schemes is now usually from section 106 agreements which would mean a significant number of new houses would have to be built in Wallingford in order to fund this measure.

## **BYPASS FOR WATLINGTON**

### **Desired outcome**

To encourage traffic to use the bypass instead of going through the town.

### **Reason for rejecting this option**

OCC cannot commit to this as it is not identified in its Local Transport Plan which sets out how it will spend its transport budget over the next five years.

The action is unlikely to be included in the future as funding for transport schemes is now usually from section 106 agreements which would mean a significant number of new houses would have to be built in Watlington in order to fund this measure.

## **PROVISION OF TURNING AREA FOR HGVs NEAR WATLINGTON**

### **Desired outcome**

To enable HGVs that have exited the motorway at the wrong junction or that would exceed the weight restriction, to turn around and avoid the AQMA.

### **Reason for rejecting this option**

OCC cannot commit to this as it is not identified in its Local Transport Plan which sets out how it will spend its transport budget over the next five years.

## **PARK AND RIDE**

### **Desired outcome**

Reduce the number of cars within the AQMAs.

### **Reason for rejecting this option**

None of the towns within the district are large enough to create the demand needed for a park and ride system to be successful.

## **CAR CLUB/BIKE HIRE SCHEME**

### **Desired outcome**

To encourage people to use greener transport.

### **Reason for rejecting this option**

For a scheme to be successful there has to be sufficient demand and take-up to justify the considerable cost of setting one up. Based on preliminary research by OCC the AQMAs are unlikely to generate sufficient demand given their small populations or sufficient take-up due to the short travel distances within the areas. The AQMAs are also considered too small to establish the infrastructure needed such as cycle stores and distribution points. For these reasons we rejected this option as not being viable at the present time.

## **GREEN BUS**

### **Desired outcome**

To reduce emissions throughout the AQMAs and surrounding areas.

### **Reason for rejecting this option**

OCC which oversees bus contracts does not think this is viable as private companies would not fund them. However part of the feasibility study set out in action one of this plan will look at what improvements can be made to bus fleets to reduce emissions.

## Appendix 4

### DEVELOPER GUIDANCE ON AIR QUALITY

The full guidance is available on our website [www.southoxon.gov.uk/airquality](http://www.southoxon.gov.uk/airquality). It is designed to help developers understand what is expected of them in terms of meeting the air quality objectives required in relation to development applications.

The guidance covers:

- the circumstances in which an air quality assessment is required
- the level of assessment required
- the requirements of an air quality assessment
- tools for assessing emissions
- the requirements for assessing and controlling emissions from construction phase
- assessing the significance of developments
- options for redesigning developments to address air quality issues
- options for mitigating and offsetting potential air quality issues.

## Appendix 5

### LEGISLATION

Concern over the effects of modern day pollution, mainly from industrial and road transport sources, led to the introduction of the EU Directive on air quality.

The UK adopted this in the form of the Environment Act 1995. Part IV of this act sets out the requirements on local authorities to review and assess the air quality within their boundaries against national measures of air quality known as air quality objectives. These objectives are set out in the Air Quality (England) Regulations 2000.

When a local authority establishes, through its annual review and monitoring that an objective is not likely to be met it must declare an Air Quality Management Area (AQMA). It must then prepare and implement a remedial action plan to work towards achieving the air quality.

County councils must put forward transport related actions that could contribute to meeting the objectives.