Air Quality Action Plan Update

Introduction

Reading Borough Council is committed to taking action to improve air quality, identifying areas where levels of local air pollutants exceed air quality objectives and working with partners and the community to reduce pollutants and their impacts on health.

The Council has reviewed its existing Air Quality Action Plan which has been in place since 2009, as some of the actions have either been completed or superseded. The revised Air Quality Action Plan contains measures to improve air quality across Reading, specifically targeting action on the key pollutants of concern – Nitrogen Dioxide and Particulate Matter (PM_{10} and $PM_{2.5}$). Delivering actions to reduce levels and exposure of them will help to safeguard public health and improve quality of life for all.

Background

Legislation and the Air Quality Strategy for England 2007 place an obligation on all local authorities to regularly 'review and assess' air quality in their areas, and to determine whether or not air quality objectives are likely to be achieved. Where exceedances are considered likely, the local authority must then declare an Air Quality Management Area (AQMA) and prepare an Air Quality Action Plan setting out the measures it intends to put in place in pursuit of the objectives.

In September 2006, Reading Borough Council declared six Air Quality Management Areas (AQMAs). In September 2009, monitoring indicated additional areas where nitrogen dioxide levels were being exceeded. As a result the six AQMAs were revoked and replaced by a single management area which covers perceived and actual exceedances.

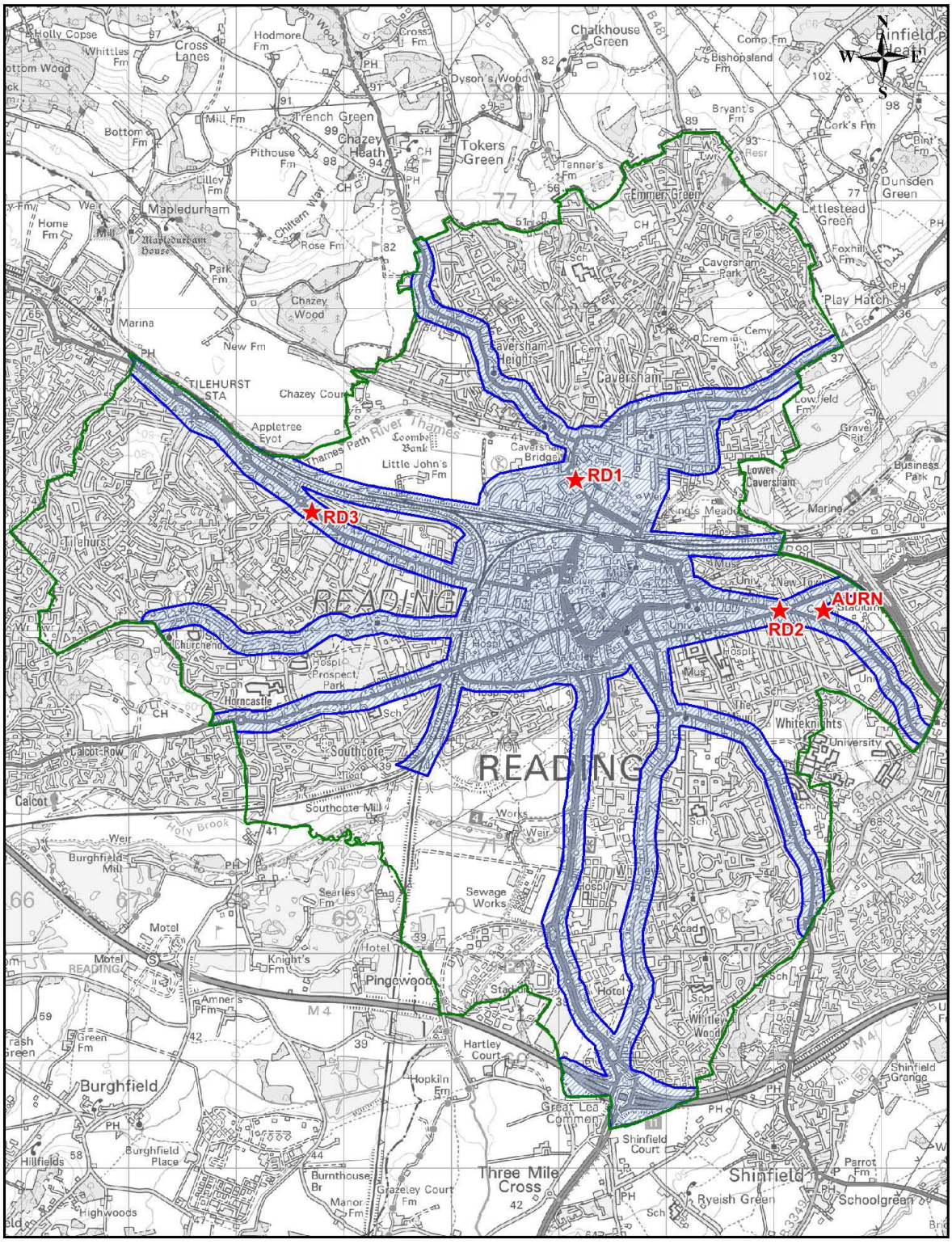
The current AQMA is detailed in Figure 1.

National Context

The UK is failing to meet EU limit values for nitrogen dioxide. This has led to the EU commencing infraction proceedings. If fined for failing to meet these targets, the fines can potentially be handed down to local authorities if they are unable to demonstrate that they have taken the appropriate action. The Localism Act contains reserve powers to enable the Government to passport EU fines to local authorities and public bodies.

On 29th April 2015 Client Earth won a legal battle against the UK government. The Supreme Court ruled that plans to cut illegal levels of air pollution in Britain are insufficient. The ruling means that the Government must start work on a comprehensive plan to meet pollution limits as soon as possible.

Figure 1: Map of AQMA and Automatic Monitoring Sites



Title: **Map of AQMA and Automatic Monitoring Sites**

Date: 30/06/2015 Scale at A4: 1:46,000
Produced by GIS & Mapping Services
Ref: G:\Mapinfo\Data\Client datasets\Environment\Environmental Services\Air Pollution

What are the issues locally?

Air quality in Reading is generally good. However, there are areas close to congested roads where levels of nitrogen dioxide exceed the air quality objectives and where levels of particulates are elevated. Particulates are classified by their mass (PM_{10} and $PM_{2.5}$), with the smaller particulates, $PM_{2.5}$ being more harmful due to their ability to travel further into the lung.

$PM_{2.5}$ is understood to have no safe limit for health, it is therefore beneficial to reduce levels at all locations, not just hotspots that break a set limit.

New targets in the UK Air Quality Strategy set a 25µg/m^3 'cap' for hotspots and a 15% reduction in $PM_{2.5}$ levels in all urban locations by 2020.

A report published by The Committee on the Medical Effects of Air Pollution (COMEAP) in 2010 estimated the number of deaths in the UK attributable to exposure to particulate air pollution to be 29,000.

Public Health England published a report in 2014 which used the COMEAP data from 2008 to estimate the percentage of deaths linked to particulate air pollution in local authority areas. In the report, the estimated percentage of deaths attributable to particulate air pollution in Reading is 5.9% of the population over 25, which equates to an estimated 62 deaths in 2008. The report does reflect that these figures are impacted by ambient particulate matter ($PM_{2.5)}$ and therefore the actual levels could range from one sixth to about double these figures.

Department of Health figures comparing the impact on life expectancy from reductions in fine particles ($PM_{2.5}$) against elimination of road traffic accidents and passive smoking show that there are significant benefits to tackling man made particulate pollution.

	Reduction in $PM_{2.5}$	Elimination of road traffic accidents	Elimination of passive smoking
Expected gain in life expectancy	7-8 months	1-3 months	2-3 months

The delivery of the Air Quality Action Plan helps to deliver the Corporate Plan Service Priority: Keeping the town clean, safe green and active. Within which it is a key action to narrow the gap to the national average of 5.3% deaths in over 25s linked to air pollution.

Links to Public Health

The AQAP links closely with the Public health agenda. The Joint Strategic Needs Assessment (JSNA) identifies particulates as being of particular relevance to public health due to the strong association with the prevalence of heart disease, respiratory disease and lung cancer. This is of particular relevance in Reading, where hospital admissions due to respiratory illness is higher than the national average (JSNA, 2012).

The vision for a healthier Reading in the Joint Health & Wellbeing Strategy is:

‘Communities and agencies working together to make the most efficient use of available resources to improve life expectancy, reduce health inequalities and improve health and wellbeing across the life course’

Although not specifically mentioned in the strategy, air quality could have an impact on Reading’s vision being realised. Exposure to air pollution can reduce life expectancy and this is reflected in the figures published by Public Health England.

As part of the environment in which we live, poor air quality has also been found to have a disproportionate effect on the disadvantaged. In 2010, a report based on the results of a Health Survey for England, showed a link between poor air quality and low income areas. The Marmot Review: Implications for Spatial Planning, found that poorer communities tend to experience a higher concentration of pollution, having a higher prevalence of cardio-respiratory and other diseases, and that sixty six per cent of carcinogenic chemicals emitted into the air are released in the 10 per cent most deprived wards.

Measures carried out to improve the health and wellbeing of the population for one Public health objective can have co-benefits for another. For example, vehicle emissions are responsible for a large proportion of air pollution. As well as reducing air pollution, measures that focus on encouraging people to use sustainable transport, such as walking and cycling can have the following co-benefits:

- Create an environment that is more pleasant to walk and cycle, therefore increasing physical activity levels;
- Reduce risks of injury and death from road traffic collisions;
- Reduce community severance, increase community cohesion and social interactions;
- Reduce noise pollution which also enables people to open windows to buildings, reducing the costs of air conditioning and
- Contribute to reducing the urban heat island effect.

Travel & Transport

There are a large range of transport related actions that help improve air quality across the borough and wider area.

Vehicle emissions are the main source of air pollution in Reading. Studies carried out in 2013 identified diesel cars as the largest contributors of nitrogen dioxide (an average of 40%), compared to petrol cars, which made up an average of 14%. Therefore actions targeting these sources, diesel cars in particular, are likely to see the biggest reduction in nitrogen dioxide levels.

It is not always possible to make a direct impact on the amount of emissions released from privately owned individual vehicles; however public transport is one area where

direct influence and improvements are possible. Considerable investment has been made at Reading Buses in new hybrid buses, and buses that run on Compressed Natural Gas (CNG). Additionally, the Council recently secured funding to carry out the conversion of 100 Reading Hackney Carriages to run on a Compressed Natural Gas (CNG) diesel blend in order to reduce their emissions.

Local Transport Plan 3 (LTP3) contains all objectives, policies and plans for improving transport in Reading over the period 2011- 2026. Reading's LTP objectives for this period are a reflection of the national and regional context and the local vision for Reading. The plans and programmes contained within the LTP are important to the delivery of all of the Government's shared priority areas, including that of better air quality.

Sustainability

Readings Climate Change Strategy has the target of reducing the carbon footprint of the borough by 34% as compared to levels in 2005.

The strategy sets out to encourage a low carbon economy and prepare for climate change. The strategic priorities encourage a reduction in emissions, energy saving, more careful use of resources and more generally, the adoption of the principles of sustainability across all sectors within the borough. These ideals have close links with the aims of the Air Quality Action Plan and most actions taken to reduce carbon emissions are likely to have co-benefits for air quality e.g. modal shift to public transport, cycling and walking.

It is however acknowledged that that the largest source of carbon dioxide (CO2) emissions are different to the dominant sources of other air pollution relevant to the Air Quality Action Plan (Nitrogen dioxide and Particulate Matter), in that transport only makes up 16% of CO2 emissions, while the main source of CO2 (51%) is from industrial, commercial and retail premises. Consequently there may be some conflicts between actions taken to reduce carbon emission and other air pollutants such as nitrogen dioxide and particulate matter (PM_{10}). Examples include the increase in use of biomass burners, fuel switch to gas from electric heating systems and the widespread switch from petrol to diesel cars.

The Council aim to take a "win/win" approach, where actions taken to address air quality will also benefit or have a neutral impact on climate change actions and vice versa. Preference will be given to air quality actions that also reduce emissions of greenhouse gas emissions. A balance will be struck where there is a conflict. For example a ground source heat pump might be favoured over a biomass burner in the Air Quality Management Area.

Planning

National Policy

The National Planning Policy Framework (NPPF) sets out the Government's planning policies for England and how they are expected to be applied. In relation to conserving and enhancing the natural environment, paragraph 109 states that:

"*The planning system should contribute to and enhance the natural and local environment by…. preventing both new and existing development from contributing to or being put at unacceptable risk from, or being adversely affected by unacceptable levels of soil, air, water or noise pollution or land instability.*"

Paragraph 124, also states that:

"Planning policies should sustain compliance with and contribute towards EU limit values or national objectives for pollutants, taking into account the presence of Air Quality Management Areas and the cumulative impacts on air quality from individual sites in local areas. Planning decisions should ensure that any new development in Air Quality Management Areas is consistent with the local air quality action plan."

Local Policy

Policy DM19 in Reading Borough Council's Sites and Detailed Policy Document requires that development have regard to the need to improve air quality and to reduce the effects of poor air quality:

"Development that would detrimentally affect air quality will not be permitted unless the effect is to be mitigated. The following criteria should be taken into account:

- Whether the proposal, including when combined with the cumulative effect of other developments already permitted, would significantly reduce air quality;
- Whether the development is within, or accessed via, an Air Quality Management Area; and
- Whether it can be demonstrated that a local reduction in air quality would be offset by an overall improvement in air quality, for instance through reduction in the need to travel.
- Where a development would introduce sensitive uses (such as residential, schools and nurseries, hospitals, care facilities) into, or intensify such uses within, an Air Quality Management Area, detrimental effects on that use will be mitigated. Mitigation measures should be detailed in any planning application."

The Council has adopted a Community Infrastructure Levy (CIL) which secures funds from new development to improve infrastructure and support growth and development. The Council publishes a list of infrastructure which would benefit from CIL which includes:

- Air quality - The infrastructure required to undertake Borough wide continuous monitoring of air quality.

S106 planning obligations may still be sought from development in relation to securing site specific mitigation for developments which could include measures that support the implementation of the actions listed in the AQAP.

How will this plan improve air quality?

The actions within the plan are split into the two key areas: Intervention and Education/Promotion. It is acknowledged that there will be a certain amount of cross over between some actions.

INTERVENTIONS

Action:	What difference will this make	Who Will do it	When will it be done by	How will we measure progress
Railway upgrade	Track and platform capacity will be increased to reduce this significant bottleneck on the national rail network.	Network Rail, Transport, Planning	2016	Progress Reports to Berkshire Local Transport Body
Green Park Station	Reducing congestion and improving sustainable travel options to major employment sites and future housing and employment sites.	Transport, Planning	2018	Progress Reports to Berkshire Local Transport Body
Southern Mass Rapid Transit (MRT)	Sustainable transport provision, improving accessibility of travel to and from Reading whilst minimising congestion and reducing emissions.	Transport, planning	2018	Progress Reports to Berkshire Local Transport Body
Eastern MRT	Sustainable transport provision, improving accessibility of travel to and from Reading whilst minimising congestion and reducing emissions.	Transport	2020	Progress Reports to Berkshire Local Transport Body
East (Thames Valley Park) Park & Ride	To reduce the mode share of trips by car to central Reading, thereby reducing congestion and emissions and improving accessibility.	Transport Wokingham BC	2020	Progress Reports to Berkshire Local Transport Body

Action:	What difference will this make	Who Will do it	When will it be done by	How will we measure progress
Winnersh Triangle Park & Ride	To reduce the mode share of trips by car to central Reading, thereby reducing congestion and emissions and improving accessibility.	Transport, Wokingham BC	2016	Progress Reports to Berkshire Local Transport Body. Monitoring of patronage
Southern (Mereoak) Park & Ride	To reduce the mode share of trips by car to central Reading, thereby reducing congestion and emissions and improving accessibility.	Transport, Wokingham BC	2015	Progress Reports to Berkshire Local Transport Body. Monitoring of patronage
Traffic signal upgrading	Managing congestion on the transport network	Transport	2016	Reports to transport management sub-committee
A33 Congestion Relief Pinchpoint scheme	Reducing the impact of congestion on the transport network, higher quality public realm, environmental benefits, healthier lifestyles and improved access to central Reading.	Transport	2015	Reporting to transport management sub-committee
A4 Congestion Relief Pinchpoint scheme	Reducing the impact of congestion on the transport network, higher quality public realm, environmental benefits, healthier lifestyles and improved access to central Reading.	Transport	2015	Reporting to transport management sub-committee

Action:	What difference will this make	Who Will do it	When will it be done by	How will we measure progress
Work towards the electrification of the vehicle fleet. • Introduction of charging points into carparks and as part of new developments • Replacement of Council fleet vehicles with electric vehicles where feasible.	The electrification of the vehicle fleet will reduce vehicle emissions and improve local air quality.	Transport, Sustainability, Environmental Protection	2020	Number of charging points installed. Electric vehicles in use.
Expansion of ReadyBike cycle hire scheme	Increase options for people travelling across Reading. Reduce congestion and impact on air quality.	Transport	2017	SEPT report
Cross boundary cycle routes continue the development of the national cycle network	Increase options for people travelling across Reading and beyond. Reduce congestion and impact on air quality.	Transport, Wokingham, Bracknell Forest, Windsor & Maidenhead	Ongoing	Cycle strategy implementation plan
Cycle route infrastructure improvements	Increase options for people travelling across Reading and beyond. Reduce congestion and impact on air quality.	Transport	Ongoing	Cycle strategy implementation plan
Thames pedestrian/cycle bridge	Direct access to Reading Station and leisure facilities through an area of future regeneration and development. Promoting cycling and walking, reducing congestion and impact on air quality.	Transport	2016	Bridge open for public use.

Action:	What difference will this make	Who Will do it	When will it be done by	How will we measure progress
Ensuring that industrial emissions to air are minimised through appropriate application and enforcement of the Environmental Permitting Regulations 2010. Identification of businesses that should be permitted.	Emissions to air from polluting premises will be controlled.	Environmental Protection	Ongoing	EP Annual subscriptions and applications. Annual search for unpermitted processes
Through Reading Climate Change partnership increase business participation in reducing emissions through, measures such as cycle to work schemes, reducing building energy use, low emission delivery vehicles.	Reducing the impact of business on air quality.	Sustainability, transport, Environmental Protection	2020	Reading climate change partnership
We will ensure through the planning process that future development does not result in any further deterioration of air quality and where possible, results in an improvement in overall environmental quality.	New development will not result in significant worsening air quality	Planning, Environmental Protection	Ongoing	Air quality assessments produced for new developments. Monitoring results.
We will ensure that measures to address local air quality do not conflict with climate change actions, by considering the interlinked causal factors, identifying conflicts and promoting mutually beneficial solutions. E.g. Careful	Minimising conflicting initiatives that undermine each other's targets.	Sustainability, Environmental Protection	Ongoing	Number of conflicting measures installed within the AQMA.

consideration of impact of biomass burners. Winter watch – where solid fuel is supplied use smokeless authorised fuel.				
Action:	**What difference will this make**	**Who Will do it**	**When will it be done by**	**How will we measure progress**
Continue Reading Buses investment programme to ensure the bus fleet has the lowest emissions it can.	Particulate and NO2 emissions from buses will be continually reduced. The impact of these reductions will be most noticeable on busy bus routes and bus stop interchanges.	Transport	Ongoing	Reporting to transport management sub-committee
Continue to explore and implement ways to improve emissions from Reading's taxi fleet.	Reduce NO2 and particulate emissions	Licensing, Environmental Protection, Transport	Ongoing	Changes in makeup of taxi fleet. e.g. Retrofitted taxis, EURO standard.
Reduce emissions from idling vehicles at hotspot locations within the AQMA.	Reduce NO2 and particulate emissions in idling hotspots within the AQMA.	Environmental Protection, Licensing, Transport	2017	Report to members regarding approach, implementation of campaign

Education/Promotion Actions

Action:	What difference will this make	Who Will do it	When will it be done by	How will we measure progress
Continue to offer Bikeability cycle training to all schools across Reading	Improve accessibility of cycling to children by improving road awareness, cycling skills and confidence.	Transport	2018	Uptake of scheme
Continued funding for a Cycle development officer to help promote cycling and deliver the Cycling Strategy.	Implementation of cycling strategy leading to increased participation in cycling	Transport	2017	Percentage of road users cycling according to cycle cordon readings.
Continue to inspire people to walk more via initiatives such as Beat the Street.	Increase numbers of people walking especially targeting children and those with long term conditions who are least active.	Public Health, Transport	2016	Number of people signed up to scheme
Continue to monitor air pollution at existing monitoring locations and make results available to view on RBC website.	Quantify current pollution levels. Allow contractors to use to inform air quality impact assessments for new development. Available for the use of interested residents	Environmental protection	Ongoing	Monitoring data available on RBC website. Achieve a good level of data capture.
Investigate the feasibility of introducing locally based alert system to inform residents of forecasted pollution episodes.	Reduce the impact of pollution episodes on the residents most vulnerable to air pollution.	Environmental Protection	2017	Complete an assessment of the feasibility of such a system.
Bonfires - Provide advice to residents and take enforcement	Reduce the emission to air of pollutants from bonfires. Reduce the amount of	Environmental Protection	Ongoing	Update guidance on website.

action where appropriate to discourage the use of bonfires when disposing of waste material.	nuisance caused to neighbours by smoke from bonfires.			Number of complaints recorded.
Action:	**What difference will this make**	**Who Will do it**	**When will it be done by**	**How will we measure progress**
Solid Fuel Burning - The Smoke Control Survey 2014; Showed there was a relative lack of knowledge of smoke control areas, it is now proposed to inform people of the existence of smoke control areas, how to find out if you live in one and what you should or shouldn't do if you live in one. This will be done through an awareness raising campaign to promote best practice for people heating their homes using wood, coal and other solid fuels.	Reduce the emission of pollutants from open fires and wood burners.	Environmental Protection	2015	Pamphlet to businesses selling appliances. Press release in run up to winter.
Provide advice, guidance and support to improve home energy efficiency through the private sector renewal scheme and winter watch.	reduce emissions from heating systems, additional benefits of Reducing fuel bills, thus reducing fuel poverty; Reduces likelihood of damp and mould occurring, which aggravate respiratory disease; Reduce the number of falls in the home (falls are more likely to occur in cold homes due to poor blood circulation)	Sustainability, Private Sector Housing	Ongoing	Home Energy Conservation Act report EPC rating of houses.
Generate a larger proportion of energy from renewable sources. 8% by 2020	Lower emissions from fossil fuels through business and household electricity usage and heating	Sustainability, Planning	2020	Government registration

We will seek funding to assist implementation of projects from the action plan and support additional projects that support the corporate plan target to narrow the gap in deaths due to air pollution to the national average.	Funding to help implement projects will help to speed up the pace that we are able to implement actions and make improvements to air quality	Environmental Protection, Transport, Sustainability, Public Health	Ongoing	Applications for grant funding
Action:	**What difference will this make**	**Who Will do it**	**When will it be done by**	**How will we measure progress**
Improve the local environment through planting greater numbers of trees and plants. Increase of 10% by 2030 as of numbers in 2010.	Increase numbers of trees and plants to help absorb pollution, improve mental health and improve resilience to climate change	Planning, Parks	Ongoing	Number of trees planted Periodic monitoring and review of Tree Strategy

References

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