

Additional Evidence for the Traffic, Environment & Community Safety Scrutiny Panel's review of Air Quality in Portsmouth - 26 March 2013.

Further updates on the measures set out in the Air Quality Action Plan:

10. Creation of Portsmouth City Council Transport Manager.

Action reported in the AQAP: In place January 2010 - ensuring all council vehicles are pooled to maximise sharing opportunities; all vehicle purchasing (including improving emissions) and leasing arrangements to be subject to a financial appraisal and involve consultation with the transport manager, rationalisation of the vehicle fleet with the elimination of spare capacity, evaluate the feasibility of social care utilising bus lanes.

Update from Michael Vickers, Transport Manager.

A Transport Manager was appointed in 2010. The initial focus of this role was to consolidate the existing PCC fleet in to fewer vehicles (a reduction from 107 vehicles to 100 vehicles has been achieved) and to ensure that a PCC wide procedure was established when services wished to replace existing or procure additional vehicles. Environmental impact is now a consideration of all new vehicle procurement, in addition the terms and conditions of all vehicle leases has now been standardised across PCC and vehicles with expired leases have now been replaced. The result of this activity has been a large vehicle renewal programme. Newer vehicles meet stricter emission standards and manufactures are engaged in a permanent quest to make vehicles more economical. Large vans are now Euro 4 or Euro 5 compliant and the average CO₂ emissions across the entire fleet is 149g/km* (see note below) as opposed to 250g/km in 2010.

A further project is being proposed to consolidate and rationalise other transport functions throughout PCC. If adopted this proposal aims to reduce the duplication of resources, and further eradicate inefficiencies in transport planning and procurement.

Note - internal combustion engines produce Carbon Dioxide (CO₂) emissions which are measured in grams per kilometre. A fleet or transport function has its CO₂ emissions measured annually by formula of grams of CO₂ per kilometre times the total number of kilometres travelled. PCC has base line data for 2010/11 which shows our own fleet activities accounted for 316,000 tonnes of CO₂ produced, in 2011/12 that figure had reduced to 301,000 tonnes, it's an expectation that 2012/13 will produce further reductions.

Post Script to that note - The vast majority of the council's fleet has diesel engines. Diesel engines are more thermally efficient than petrol engines and therefore you tend to get more useful engine output (power) from a diesel than from petrol (up to 30%) which in practical terms means you get to travel more kilometres per litre of fuel used. Diesel engines size for size also produce fewer CO₂ emissions than petrol engines however in terms of local air quality diesels produce far more Nitrous Oxide (NO₂) and Particulate Matter (PM) than petrol.

Therefore the vehicle fleet operator is faced with a choice - choose diesel and use less of a diminishing resource which contributes less to the 'greenhouse' gases or

choose petrol which is more beneficial to local air quality but contributes more to the greenhouse effect. The waters are further muddied by the fact that petrol is currently significantly cheaper to buy than diesel. Petrol engines are making more inroads in to Light Commercial Vehicle engines but diesel remains the fuel of choice for most Fleet Managers. I could argue further about the ecological impact of extracting raw materials that goes in to effort to reduce vehicles CO₂ figures (precious metals in catalytic convertors and the impact of producing synthetic chemicals designed to reduce CO₂) but that's a whole new debate.

3. Domestic Heating Emissions.

Action reported in the AQAP: Control of replacement gas fired boilers and central heating systems through building control and private sector housing teams. Providing advice to consumers and landlords on investments in condensing gas fired boilers where possible. Implement sustainable development strategies - careful consideration of combined heat and power.

Update from Clare Harden, Deputy Private Sector Housing Manager.

SAP Rating.

We carry out an energy efficiency survey of properties when we inspect a property to identify repair or improvement works that are required, this gives us an energy efficiency rating for the property. The energy efficiency rating is a measure of the overall efficiency of a home. The higher the rating the more energy efficient the home is the lower the associated carbon emissions are and the lower the fuel bills will be. This energy efficiency is divided into 7 bands to rate how efficient it is on a scale, and is measured using the SAP rating.

A	92-100 SAP points (Most efficient)
B	81-91 SAP points
C	69-80 SAP points
D	55-68 SAP points
E	39-54 SAP points
F	21-38 SAP points
G	1-20 SAP points (Least efficient)

Properties that have a SAP rating of below 55 fall into bands E, F or G (as demonstrated above) and are considered significantly inefficient. These properties would generally be least economical to heat and would produce the highest fuel bills. As well as providing home owners with a SAP rating of their property, a recommendation report is included listing cost effective and other measures (such as low and zero carbon generating systems) to improve the energy rating of the building, along with the potential SAP rating that could be achieved after these measures are installed. This is given in the form of Energy Performance Certificates which are required whenever a building is constructed or for existing buildings, before it is marketed for sale or rent.

Portsmouth City Council will also be engaging in the upcoming Green Deal, due to be implemented in April 2013. This is a new Government scheme aimed at encouraging home owners, tenants and landlords to carryout energy saving measures to their properties, such as more efficient boilers and heating systems,

windows, or insulation. The principle of the Green Deal is that the customer will have no upfront cost for installing the energy efficient measures, instead a provider will effectively lend this money, and the customer will pay this back through the savings in their energy bills. Where the efficiency measure would reduce their energy bills, the customer will continue to pay the same bills as before, and the extra money will be used to pay back the loan. This means that the customer not only has no upfront cost, they also do not have to find any additional money above their current outgoings to pay for the measures. Portsmouth City Council will act as advisors in the process, conducting surveys of properties to identify suitable measures that can be carried out, and helping customers to find suitable providers for the finance.

Housing Health and Safety Rating System - Category 1 Hazard

When complaints are received from tenants regarding heating, we investigate using the Housing Health and Safety Rating System (HHSRS). The HHSRS is a risk-based evaluation tool to help local authorities identify and protect against potential risks and hazards to health and safety from any deficiencies identified in dwellings. It was introduced under the Housing Act 2004 and applies to residential properties in England and Wales. The HHSRS assesses 29 categories of housing hazard, such as excess cold, damp and mould, and electrical hazards. Each hazard is given a score according to how serious it is, based on how likely someone could come to harm, as well as how serious this harm could be. (For example how likely someone could come to harm from excessive cold in the home, and if they did; would they suffer mild illness, or be hospitalized etc.) This score is then divided into one of two groups according to severity, category 1 hazards are those that have a high score and are considered serious hazards. Category 2 hazards have a lower risk score, but still represent a risk to occupants of the property, although this risk of harm is less severe than a category 1 hazard. The local authority aim to address all hazards found in a property, but have a mandatory duty to address Category 1 hazards.

The Local Air Quality Management Objectives - targets for maximum concentrations of each pollutant.

Pollutant	Air Quality Objective Measured as Concentration		To be achieved by
Benzene			
All authorities	16.25 $\mu\text{g m}^{-3}$	Running annual mean	31 December 2003
England and Wales Only	5.00 $\mu\text{g m}^{-3}$	Annual mean	31 December 2010
Scotland and N. Ireland	3.25 $\mu\text{g m}^{-3}$	Running annual mean	31 December 2010
1,3-Butadiene	2.25 $\mu\text{g m}^{-3}$	Running annual mean	31 December 2003
Carbon Monoxide			
England, Wales and N. Ireland	10.0 mg m^{-3}	Maximum daily running 8-hour mean	31 December 2003
Scotland Only	10.0 mg m^{-3}	Running 8-hour mean	31 December 2003
Lead	0.5 $\mu\text{g m}^{-3}$	Annual mean	31 December 2004
	0.25 $\mu\text{g m}^{-3}$	Annual mean	31 December 2008
Nitrogen Dioxide	200 $\mu\text{g m}^{-3}$ not to be exceeded more than 18 times a year	1-hour mean	31 December 2005
	40 $\mu\text{g m}^{-3}$	Annual mean	31 December 2005
Sulphur dioxide	350 $\mu\text{g m}^{-3}$, not to be exceeded more than 24 times a year	1-hour mean	31 December 2004
	125 $\mu\text{g m}^{-3}$, not to be exceeded more than 3 times a year	24-hour mean	31 December 2004
	266 $\mu\text{g m}^{-3}$, not to be exceeded more than 35 times a year.	15-minute mean	31 December 2005

Pollutant	Air Quality Objective Concentration	Measured as	To be achieved by
Particles (PM₁₀) (gravimetric)			
All authorities	50 µg m ⁻³ , not to be exceeded more than 35 times a year	Daily mean	31 December 2004
	40 µg m ⁻³	Annual mean	31 December 2004
Scotland Only	50 µg m ⁻³ , not to be exceeded more than 7 times a year	Daily mean	31 December 2010
	18 µg m ⁻³	Annual mean	31 December 2010
Particles (PM_{2.5}) (gravimetric) *	25 µg m ⁻³ (target)	Annual mean	2020
All authorities	20% cut in urban background exposure	Annual mean	2010 - 2020
Scotland Only	12 µg m ⁻³ (limit)	Annual mean	2020
PAH *	0.25 ng m ⁻³	Annual mean	31 December 2010
Ozone *	100 µg m ⁻³ not to be exceeded more than 10 times a year	8 hourly running or hourly mean*	31 December 2005

*** Not included in regulations at present**

England: The Air Quality (England) Regulations 2000 (SI 928), The Air Quality (England) (Amendment) Regulations 2002 (SI 3043),

Scotland: The Air Quality (Scotland) Regulations 2000 (Scottish SI 2000 No 97), The Air Quality (Scotland) (Amendment) Regulations 2002 (Scottish SI 2002 No 297),

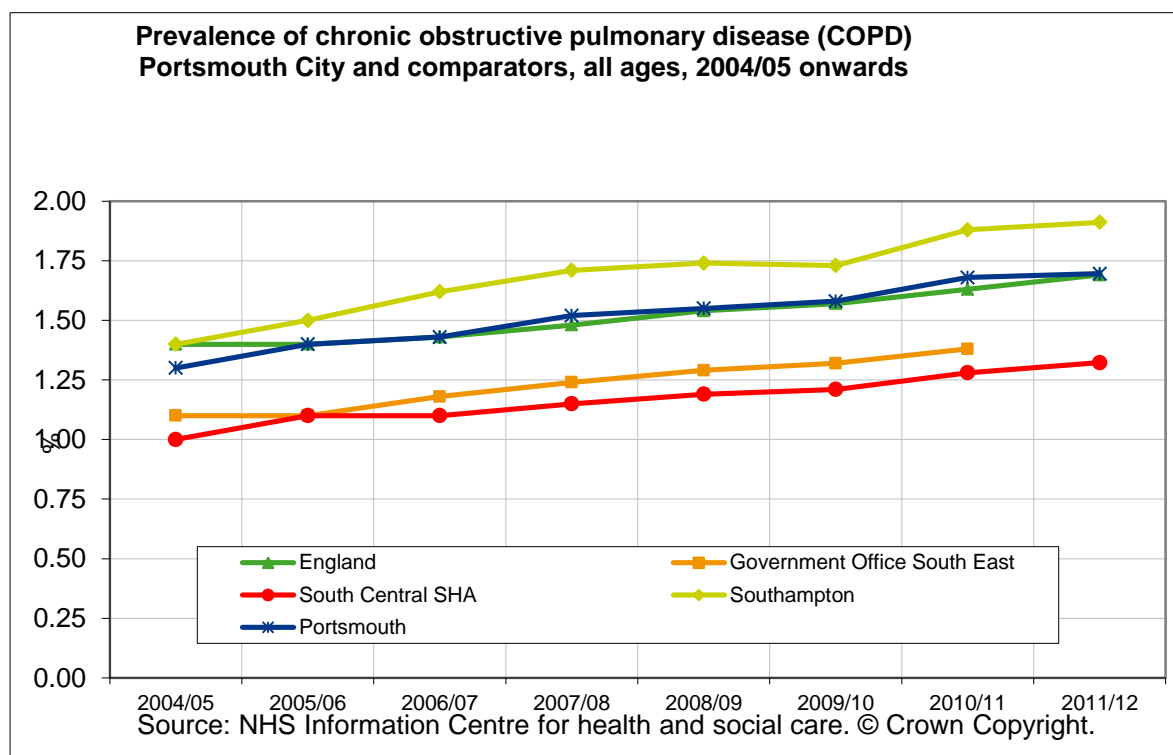
Wales: Air Quality (Wales) Regulations 2000, No 1940 (Wales 138), Air Quality (Amendment) (Wales) Regulations 2002, No 3182 (Wales 298),

Northern Ireland: Air Quality Regulations (Northern Ireland) 2003, Statutory Rules of Northern Ireland 2003, no. 342.

<http://aqma.defra.gov.uk/objectives.php>

The Joint Strategic Needs Assessment reports that: *In 2011/12, there were 13,626 registered patients of all ages (6.4% of all registered patients) on GP Practice asthma registers. (NB National comparator data not yet available). In 2010/11, local prevalence was 6.3% of GP registered patients of all ages – significantly higher than national prevalence of 5.9%.*

Prevalence of chronic obstructive pulmonary disease 2004 - 2012¹



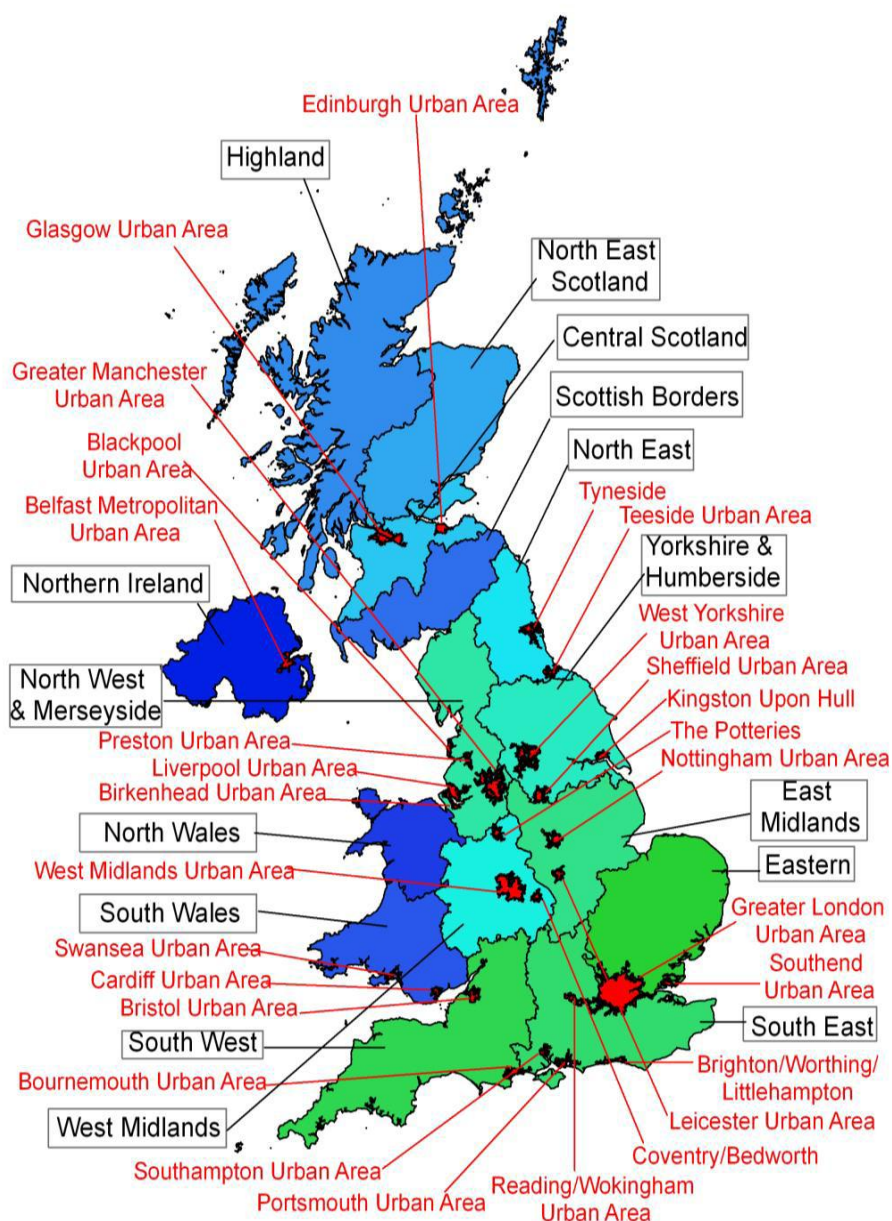
The Committee on the Medical Effects of Air Pollutants (COMEAP)'s report published in 2006 entitled Cardiovascular Disease and Air Pollution concluded that 'there is increasing and persuasive evidence that air pollution is associated with CHD [coronary heart disease], even at the generally low concentrations found today in the UK.

http://portsmouth.gov.uk/media/API_STR_JSNA_BURD_RESP_COPDPrev6.xls

The Committee's 2009 report on Long Term Exposure to Air Pollution: Effect on Mortality concluded that 'we are left with little doubt that long-term exposure to air pollutants has an effect on mortality and thus decreases life expectancy

www.dh.gov.uk/prod_consum_dh/groups/dh_digitalassets/@dh/@ab/documents/digitalasset/dh_096815.pdf

UK zones and agglomerations for Air Quality reporting - 2011.



Air Pollution in the UK 2011 - Compliance Assessment Summary .
 "UK zones and agglomerations for ambient air quality reporting 2011

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Agglomeration zones are shown in red and non-agglomeration zones in blue/green.

The UK is divided into 43 zones for air quality assessment. There are 28 agglomeration zones (large urban areas) and 15 non-agglomeration zones. The majority of zones and agglomerations in the UK had locations with measured or modelled annual mean nitrogen dioxide concentrations higher than the annual mean limit value (40 $\mu\text{g m}^{-3}$). This was the case in 40 out of the 43 zones. The following three zones met the annual mean limit value in 2011:

- Blackpool Urban Area (UK0022)
- Highland (UK0039)
- Scottish Borders (UK0040)

The UK has been granted a time extension for compliance with the nitrogen dioxide annual limit value in the following zones and 9 agglomerations:

- Nottingham Urban Area,
- Leicester Urban Area,
- Portsmouth Urban Area,
- Reading/Wokingham Urban Area,
- Southend Urban Area,
- Edinburgh Urban Area,
- Cardiff Urban Area,
- Central Scotland zone, and
- North Wales zone.

15. Junction improvements

Actions reported in the AQAP: Possible improvements of all traffic controlled junctions throughout AQMA 6 (all three sections). Co-ordination of signal operation through Microprocessor Optimised Vehicle Actuation (MOVA) (or similar) with particular attention paid to:

- a) London Road/ Stubbington Road through roundabout.
- b) London Road/ Kingston Crescent.
- c) Kingston Road/ New Road
- d) Fratton Road/ Arundel Street
- e) Roundabout at Fratton Road – Victoria Road North – Goldsmith Avenue
- f) Review all junctions city-wide, starting with AQMAs, to increase effectiveness and prevent unnecessary congestion.

Action reported to the panel by Richard Lee, Environmental Health Manager.

MOVA was designed by Transport Research Laboratory during the 1980s and is now a very well established strategy for the control of traffic light signals at isolated junctions i.e. junctions that are uncoordinated with any neighbouring signals. It can also be used at stand-alone pedestrian crossings, i.e. puffin and pelicans. Currently the UK is thought to have at least 700 sites equipped with MOVA with each year seeing at least another 100 installations. Although designed for isolated junctions, a number of linked schemes have also been installed.

MOVA is designed to cater for the full range of traffic conditions, from very low flows through to a junction that is overloaded. For the major part of the range before congestion occurs, MOVA operates in a delay minimising mode: if any approach becomes overloaded, the system switches to a capacity maximising procedure. MOVA is also able to operate at a wide range of junctions, from the very simple 'shuttle-working', to large, multi-phase multi-lane sites

Following evaluation of the bid, DEFRA awarded the council an air quality grant of £60,000 for the period 2012/13. This was to fund a feasibility study on the optimization of existing road traffic management system to deliver air quality with a possible recommendation for junction improvement if and when necessary. This project is already underway and the open bid process is being prepared. It will take

the form of a set of feasibility studies to focus on testing ways to regulate and improve road traffic flow management to achieve an improvement in local air quality without creating new air pollution hotspots.

The following provision project timetable has been submitted to DEFRA:

First Package	
<u>Extensive traffic survey</u>	
Start date	1st March 2013
Completion date	30 April 2013
Second Package	
Road traffic micro-simulation in conjunction with road emission determination	
Start date	1st May 2013
Completion date	31 December 2013
Third Package	
Air quality assessment	
Start date	1st January 2014
Completion date	21 April 2014
Project Profile	
31/11/2012	Start of the tendering process for the three packages individually.
31/12/2012	Decision on the tendering process and start of the project.
31/03/2013	The project is half way through the First Package.
30/04/2013	Completion of the first Package.
30/04/2013	Start of the first part of the third package (To produce the output model for both baseline and do minimum scenarios).
30/06/2013	The project is half way through the first part of the second Package.
30/09/2013	Completing of the first part of the Second Package.
31/12/2013	Completion of the second part of the Second Package.
01/01/2014	Start of the second part of the third Package (air quality modelling of the selected tested scenarios).
21/04/2014	Completion of Third Package.
31/05/2014	Submission of AQ Progress Report to DEFRA
31/05/2014	Submission of the project report to DEFRA and

The scope of the project study area will not be confined immediately to the road network within the five remaining AQMAs but will extend to both adjacent junctions and corridors linking to AQMAs (6,7, 9, 11 and 13). Road layout has been reconfigured and the work is to be carried out under the LSTF programme.

- a) No update
- b) Road layout has been reconfigured. There are further junction improvements planned as part of LSTF
- b) work to be carried out under the LSTF programme (details please)
- c) New pedestrian crossing and traffic lights in place
- d) There are currently no plans to undertake any improvements at this junction
- e) Nothing done (reword this) Improvements to this area may be considered for future funding.
- f) This review is likely to form part of the remit of the Traffic Management team once the newly appointed Senior Traffic Systems Engineer joins the council at the end of February 2013.

Traffic in the City.

Use of the A275 is predicted to increase by 23% by 2028.

The planned Park & Ride scheme with its 600 spaces will not make a material difference to air quality.

Much of the city is built on reclaimed land which is not suitable for tree roots.