

# Public Health and Air Quality – Summary

## Public health review

**Prepared by City of York Council on behalf of the Low Emission Partnership**

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### 1.0 Overview

#### Purpose

- 1.1 This summary report provides a snapshot of action being taken within local authorities towards reducing the health burden of air pollution since the transfer of health responsibilities to local authorities in April 2013. It also highlights the work of other key organisations involved in air quality health research and promotion.

It covers:

- Degree of prioritisation of air quality improvement within individual local authorities
- Regional actions on air quality improvement
- National policy development
- Academic research and other health promotion activities

- 1.2 The review draws on the results of a questionnaire circulated to a number of local authorities, internet research, and informal consultation with key practitioners, including: Bradford MDC, NHS Sustainable Development Unit (NHS), Greater London Authority (GLA), Mid Devon Council, Sussex Air Quality Partnership and the Merseyside Air Quality Management Group.

#### Key findings

- 1.3 Where public health funding has been made available to support air quality work it is currently being used mainly to support existing, or new, monitoring work and to retain air quality staffing resources. There are an increasing number of local authorities monitoring PM<sub>2.5</sub>. The emphasis still appears to be on identifying air quality problems rather than acting to reduce them.
- 1.4 No evidence has been found within this review of public health directly supporting the implementation of low emission measures / traffic reduction measures on the ground (taking direct action to deal with the source of the problem).
- 1.5 In a small number of cases public health departments have started to financially support action to reduce public exposure to poor air quality by supporting information and advice campaigns.
- 1.6 There is growing interest in assessing what the public health outcome of different air quality improvement measures might be through the undertaking of Health Impact Assessments (HIAs).

- 1.7 There is a wide range of academic research being undertaken into the health and cost impacts of air quality with many studies instigated or supported by local authority officers. There are also a number of NHS related organisations undertaking research into air quality and health.
- 1.8 Air quality problems generally receive good coverage within Joint Strategic Needs Assessments (JSNAs) but this does not often translate into specific air quality action on the ground (through Health and Well Being Strategies). This reflects similar problems within the current LAQM regime with too much emphasis on review and assessment and not enough on action plan delivery).
- 1.9 Air quality practitioners are generally starting to develop good working relationships with their public health counterparts. Public health support for air quality issues appears to be stronger in some local authorities than others and there is wide variation in the level of interaction at county level. Most air quality professionals report that they expect to work more closely with public health colleagues in the future.
- 1.10 Nationally air quality is moving up the public health agenda. The NHS sustainability unit have set up working groups to identify solutions to a number of health related sustainability issues (including air quality), and Public Health England have also started an engagement process with air quality practitioners to inform the development of a Public Health England (PHE) programme to reduce deaths attributable to particulate air pollution.

**Suggested areas for further research and development by LEP**

- 1.11 Further examine the relationship between JSNAs, Health and Well Being Strategies, AQAPs, LTPs and Local Plans (both low emission and sustainable transport based measures). How can best practice on air quality action planning be most effectively collated and shared with Public Health England to ensure it is translated effectively into Health and Well Being Strategies and supported by public health officials at a local level?
- 1.12 How can public health officials and air quality practitioners work together better to influence land use planning decisions at both a strategic and local level? How can the health costs (and resultant economic costs) of emissions due to development be better highlighted? How can public health and air quality practitioners reduce exposure to poor air quality through the planning system?
- 1.13 What are the main drivers for increased PM<sub>2.5</sub> monitoring? Has it been instigated by public health or air quality practitioners? What is monitoring of PM<sub>2.5</sub> expected to deliver /influence in terms of air quality improvement measures? Is monitoring PM<sub>2.5</sub> the best use of public health funding?

## 2.0 Background

- 2.1 The current burden of particulate air pollution in the UK is estimated to be equivalent to nearly 29,000 deaths in 2008 at typical ages and an associated loss of population life of 340,000 life years lost.
- 2.2 The *Health and Social Care Act 2012* abolished primary care trusts and transferred much of the responsibility for public health to local authorities from 1 April 2013. From this date local authorities have had a new duty to take such steps as they consider appropriate for improving the health of the people in their areas.
- 2.3 The Public Health Outcomes Framework '*Healthy Lives, Healthy People : Improving outcomes and supporting transparency*' sets out a vision for public health, desired outcomes and indicators to help identify how health is being improved and protected.
- 2.4 There are around 60 public health outcome indicators. Indicator 3.01 relates to air pollution:

*Indicator 3.01 – Fraction of all-cause adult mortality attributable to anthropogenic particulate air pollution (measured as fine particulate matter, PM<sub>2.5</sub>)*

The inclusion of the this indicator in the public health outcomes framework is intended to enable Directors of Public Health to prioritise action on air quality in their areas and to help reduce the health burden from air pollution.<sup>1</sup>

- 2.5 PHE indicated at an event held on the 2<sup>nd</sup> February 2015 that a further public health outcome relating to the impact of NO<sub>2</sub> on health is in the development stage. This reflects the increasing evidence base in relation to the impact of NO<sub>2</sub> as summarised in the recent COMEAP statement on the health effects of nitrogen dioxide exposure (COMEAP, 12 March 2015).

## 3.0 Local Interactions

- 3.1 Reducing the health burden from air pollution is likely to be most effective where:
  - there are well established working relationships between public health and air quality officers / environmental health officers
  - air quality improvement features strongly in JSNAs and Health and Well Being Strategies
  - funding is targeted at air quality improvement measures and there is an ability to effectively monitor and review progress
- 3.2 A questionnaire to determine the current level of interaction between air quality and public health officers (annex 1) was circulated to members of the Yorkshire and Humberside Pollution Advisory Group (YAHPAC), the London Boroughs (via Greater London Authority (GLA)), the Greater Manchester Authorities and the Merseyside and Cheshire Air Quality Groups. The questionnaire was also made available to a number of other individual local authorities who have previously supported / provided information to LEP.
- 3.3 A total of 34 questionnaire responses were received (Table 1). There was one duplicate response and three anonymous responses. The duplicate response was removed from the data set prior to analysis.

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<sup>1</sup> Public Health England – Indicator definitions and supporting information <http://www.phoutcomes.info/public-health-outcomes-framework#gid/1000043/par/E12000008/ati/102/page/6/>

**Table 1: Public Health support within responding Local Authorities**

Local Authority	Position of respondent	Service Level Agreement in place	Do public health currently fund air quality activities?
Tamworth	District officer	no	no
Knowsley MBC	District officer	developing	yes
Liverpool	Team Manager	no	no
Newcastle under Lyme	Team Manager	no	no
Sussex Air	AQ officer	developing	no
North Lincolnshire	Head of Service	no	yes
Calderdale	Team Manager	no	yes
Selby	District officer	no	no
Sheffield	AQ officer	yes	yes
Bury	Team Manager	no	no
Stockport MBC	AQ officer	no	no
Lichfielddc	Team Manager	no	no
Cheshire East	Team Manager	no	no
Cambridge	AQ officer	no	no
Warwick	Team Manager	no	no
Lancaster	District officer	no	no
Leeds	AQ officer	no	no
Barnsley	AQ officer	no	yes
Ryedale	Team Manager	no	no
Bradford	AQ officer	yes	yes
Doncaster	Team Manager	no	yes
East Yorkshire	District officer	no	no
Hull CC	District officer	no	yes
Wakefield	AQ officer	no	no
Hambleton	District officer	no	no
Rotherham	AQ officer	yes	yes
York	AQ officer	no	no
Cannock Chase DC	AQ officer	no	no
Cheshire West and Chester Council	AQ officer	no	no
L.B.Barnet	Team Manager	yes	yes
Anonymous 1	unknown	no	no
Anonymous 2	unknown	developing	yes
Anonymous 3	unknown	no	no

3.4 Four local authorities reported service level agreements already in place between public health and air quality functions (Sheffield, Bradford, Rotherham and London Borough of Barnet). A further 3 respondents (1 anonymous) reported that service level agreements were in the process of being developed (Sussex Air authorities, Knowsley MBC).

3.5 10 respondents (30%) reported that they were already receiving funding support from public health colleagues. Of these, 6 had existing or developing service level agreements in place. In

four local authorities (North Lincs, Calderdale, Barnsley and Hull CC) public health funding is supporting air quality work without a service level agreement in place.

- 3.6 Where public health funding has already been provided to support air quality activities, it is currently being used mainly to support existing monitoring networks and / or to introduce PM<sub>2.5</sub> monitoring (Table 2). The exception to this is L.B. Barnet where only a public health campaign is supported. The widest range of public health funded activities relating to air quality were found to be taking place in Bradford, Rotherham and Knowlsey MBC. Within these authorities public health are also supporting academic research and health impact assessments. Four local authorities reported that public health funding was helping to support air quality / environmental health staffing resources (North Lincs, Bradford, Doncaster and Rotherham).

**Table 2: Use of public health funding to support local air quality functions**

Local Authority	service / maintain current network	repair / replace existing	new monitoring	staff resources	research	Public health campaign	HIA
Knowlsey MBC	yes	yes	yes	no	yes	no	yes
North Lincolnshire	yes	yes	no	yes	no	no	no
Calderdale	no	yes	yes	no	no	no	no
Barnsley	no	no	yes	no	no	no	no
Bradford	yes	yes	yes	yes	yes	yes	yes
Doncaster	yes	yes	no	yes	no	no	no
Hull CC	yes	no	no	no	no	no	no
Rotherham	yes	no	yes	yes	yes	yes	no
L.B.Barnet	no	no	no	yes	no	yes	no

- 3.7 The questionnaire provided respondents with an opportunity to list any other air quality related activities financially supported by public health colleagues. This drew a nil response from all respondents. No examples of public health financial contributions towards low emission measures or traffic reduction activities on the ground (air quality action planning measures) were identified by the respondents. It would appear that at present financial contributions from public health towards air quality activities are limited to monitoring (particularly PM<sub>2.5</sub>), air quality staff resourcing, health impact assessments of potential action planning measures (e.g. West Yorkshire Low Emission Strategy) and Public Health campaigns (eg. Sheffield, L.B.Barnet).
- 3.8 Although many air quality officers do not receive any form of direct funding from public health to support their work, this has not prevented the development of joint air quality / public health initiatives in many areas. There are many examples of air quality staff working with public health colleagues to develop JSNAs, and joint working on public awareness campaigns appears to be in the early stages within a number of authorities (York, Cheshire West and Chester). Other local authorities such as Sheffield, Lancaster and the Sussex authorities already have established public health campaigns developed in partnership with public health officials. Health impact assessments to support potential air quality action planning measures are another area of growing activity (e.g. Maidstone HIA, West Yorkshire LES/LEZ HIA)). Several local authorities, including Calderdale and North East Lincolnshire have indicated good support from public health colleagues in relation to dealing with planning applications.

- 3.9 Despite the current financial pressures faced by many air quality staff to retain monitoring resources, the air quality and public health questionnaire identified an increase in the uptake of PM<sub>2.5</sub> monitoring within many local authorities. These included the Sussex authorities, Selby, Bury, Cambridge and Leeds. These particular authorities also reported that no additional funding had been received from public health. The reasons why these local authorities have chosen to commence PM<sub>2.5</sub> monitoring is currently unclear, as is what impact it will have in terms of influencing decision making and delivering air quality improvement measures locally.
- 3.10 When air quality practitioners were asked about their current relationship with public health colleagues there was a mixed response (Table 3). About half of the respondents felt that public health colleagues understood their work and more than half said public health supported their messages. Less than a third said they were happy with the level of support they were currently receiving, a similar number said they were dissatisfied. All respondents agreed that they were likely to spend more or a similar amount of time working with public health colleagues in the future.

**Table 3 – Views on joint working practices (air quality practitioner point of view)**

	positive	neutral	negative	no response
Public health colleagues understand my work	17	8	8	0
Public Health support air quality messages	19	7	5	0
I am satisfied with the level of support received from public health colleagues	10	11	12	0
I expect to spend more time working with public health colleagues	26	7	0	0

## 4.0 Regional Activity

- 4.1 During the course of this review the following regional groupings were contacted directly:

- YAHPAC - Yorkshire and Humberside Regional Pollution Advisory Council (via attendance at meeting) and follow up with key regional air quality practitioners
- Sussex Air Quality Partnership (via e-mail communication with Nigel Jenkins)
- Merseyside and Cheshire Air Quality Management Group (via telephone call and emails to Dr Alex Stewart (Merseyside Public Health) and Vicky Jackson (Sefton Council))
- Greater London Authority (via Elliot Treharne, GLA)
- Devon (via telephone call to Simon Newcombe, Mid-Devon)

The public health questionnaire was also brought to the attention of the Greater Manchester authorities (*via Salford*).

Several attempts were made to obtain an update on progress in Kent and Medway (*via Canterbury council and Kent and Medway public health*) but these were unsuccessful.

A summary of regional public health activity is provided here. More information on specific case studies can be found in Annex 2.

## YAHPAC

4.2 The YAHPAC air quality group is made up of air quality practitioners from around the Yorkshire region, including North East Lincolnshire. The group meets 2 to 3 times per year to share good practice and discuss common air quality themes. Within the wider YAHPAC 'family' are the South Yorkshire (Rotherham, Sheffield, Barnsley and Doncaster) and the West Yorkshire (Leeds, Bradford, Wakefield, Calderdale and Kirklees) groupings that often work as two separate sets of partners to deliver sub-regional projects. Currently the wider YAHPAC group does not include a public health representative, but there is plenty of evidence of interaction with public health within individual YAHPAC authorities and within the sub-regional groupings (see tables 1 and 2 above). The most prominent public health related projects currently taking place within the YAHPAC region are:

- West Yorkshire Low Emission Strategy and associated health impact assessment projects (collaborative working case study annex 2)
- Sheffield 'Air-Aware' public health information campaign
- PM<sub>2.5</sub> monitoring and research in Barnsley and Rotherham (linked to social deprivation)

South Yorkshire is also home to the long standing Care4Air programme, a collaboration between Sheffield, Doncaster, Barnsley and Rotherham Councils to raise awareness of air quality issues amongst public, businesses, members and other councils.

<http://www.care4air.org/>

## Sussex Air Quality Partnership

4.3 The Sussex Air Quality Partnership (Sussex-air) was established over 10 years ago to support Sussex authorities with their LAQM duties. The partnership includes both air quality and health specialists. The group undertakes policy and research into air quality, takes regional action to improve air quality and has a joint website which hosts air quality data from around the region. A key feature of the Sussex Air Website ([www.sussex-air.net/Default.aspx](http://www.sussex-air.net/Default.aspx)) is the 'airAlert' system (<http://www.airalert.info/Splash.aspx>). This is a free text service that sends air quality alerts directly to vulnerable people, giving them the maximum amount of time to react and plan accordingly. Recently Sussex Air took the innovative step of adding the public health 'coldAlert' system to the Sussex Air website. This was done in recognition that health impacts arising from severe cold weather are often similar in nature to those arising from episodes of poor air quality, and affect the same vulnerable groups. This model could be rolled out nationally. Sussex air are continuing to work with public health colleagues to identify other areas of potential joint working. They have previously run workshops to allow face to face discussion between public health and air quality practitioners and are involved with various academic research projects. Joint LES planning guidance has already been adopted in the Sussex region.

## Merseyside and Cheshire Air Quality Management Group

4.4 The Merseyside Air Quality Management Group has been in existence for approximately 10 years. Formed originally by the Merseyside Borough Councils it has recently been expanded to include the newly created Cheshire authorities. The group aims to deliver a co-ordinated approach to air quality across the Merseyside and Cheshire region. Activities have included cross-region modelling studies, development of a regional emission inventory and input into the Liverpool City Region Low Emission Strategies Partnership. The group provides a good example of cross-county working on air quality improvement and health protection and is particularly strong at brokering links with academia and healthcare professionals.

4.5 Public health advice is provided to the Merseyside Air Quality group by a representative from the Cheshire and Merseyside health protection team. This gives the air quality group direct access to the work of the Liverpool Health Partners, a strategic partnership of 10 primary and secondary care NHS organisations, the University of Liverpool and the Liverpool School of Tropical Medicine which work together to deliver excellence in research, education and service delivery across the Cheshire and Merseyside region. By establishing strong links between air quality officers, academic researchers and health care professionals the region can strive to ensure that academic research on air quality impacts and improvement is translated into local action on the ground. Some of the key public health related activities undertaken to date within the Mersey and Cheshire regions include:

- Joint regional review of the public health report on PM<sub>2.5</sub> and development of a joint work programme to identify solutions and lobby for further action and support where needed.
- Development of a generic regional '*planning information*' guidance note.
- Joint research into asthma with the Liverpool School of tropical medicine
- MSc project by EHO in Sefton (*Helen Castle*) on implementation of health measures at a local level
- Joint cancer costing activities between public health and air quality staff at Sefton (no significant findings arising but an excellent example of close joint working)
- Research into source apportionment of particulate emissions around Sefton docks (examining the relationship between traffic emissions and fugitive industrial waste emissions) – in partnership with Exeter University
- Joint public and environmental health presentations on air quality and health issues by late Gary Mahoney and Dr Alex Stewart.
- Discussions around low emission strategies for Port of Liverpool expansion (including potential for a Health Impact Assessment)<sup>2</sup>

#### **Greater London Authority (GLA)**

4.6 The GLA was created to improve co-ordination between the local authorities in Greater London. It shares local government powers with the councils of 32 London Boroughs and the City of London Corporation. The GLA is involved with a number of air quality and public health related activities.

4.7 The GLA has provided '*Air Quality Reports for Health Professionals*' for each of the 32 London Boroughs. These bespoke reports set out the concentrations of air pollutants within each borough and how these are likely to be impacting on health. The aim of the documents is to provide public health officials who have not previously worked on air quality issues with a quick reference guide to the air quality issues in their areas so that they are able to make an informed contribution to the development of JSNAs, Health and Well Being Strategies and Air Quality Action Plans. All the documents can be viewed at <https://www.london.gov.uk/priorities/environment/publications/air-quality-report-for-public-health-professionals>.

4.8 The air quality and public health questionnaire identified similar work being undertaken in other local authorities to set out the 'current air quality position' to public health colleagues, a number were unaware of the work already undertaken via the GLA until they were

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<sup>2</sup> Much of this work was being driven by the late Gary Mahoney of Sefton Council. The future direction of the project is currently unknown.

signposted to it. In Staffordshire a series of district profiles of respiratory health are being developed to identify the worst affected areas and to establish any links to local air quality problems. Introduction of a standard format for public health 'air quality information sheets' could prevent duplication of work and ensure all public health officials are receiving the same level of information, irrespective of the area they work in.

#### 4.9 Other areas of public health related work undertaken by the GLA to date include:

- **Cleaner air for schools toolkit** – a series of teaching activities aimed at educating school communities about what they can do to reduce their impact and to protect themselves from the health risks caused by air pollution. This is part of the Mayor's Clean Air Fund to reduce air pollution in London and has been supported by the Joaquin research programme..  
<https://www.london.gov.uk/priorities/environment/clearing-londons-air/clean-air-schools>
- **Air TEXT** – Provision of free air pollution, UV, pollen and temperature forecasts for the London area including daily health bulletins. Operational since 2007. Has many synergies with the Sussex airAlert system. <http://www.airtext.info/>
- **Air Quality Seminars** – During 2013 GLA ran a series of runs a series of events and conferences to raise awareness amongst the air quality community and to share best practice. One of these was focused particularly on air quality and health and was an opportunity for public health and air quality practitioners to come together and share good practice. There do not appear to have been any further events recently.

#### 4.10 The Mayor's Air Quality Fund was launched in February 2013. It gives match-funding to London boroughs and partners that come up with new schemes and projects designed to provide air quality information and drive air quality improvement. This fund has supported a number of public health initiatives. Further information about the work of the Mayor of London and the London Boroughs can be found on the **Cleaner Air for London Website** <http://www.cleanerairforlondon.org.uk/> This website aims to be a 'one stop shop' for air quality issues in London it includes information on the following projects supported by the Mayor's Air Quality Fund:

- **Breathe Better Together Campaign** – a new London based air quality public health campaign aimed at encouraging Londoners to improve air quality. The campaign will aim to send out alerts when air pollution is forecast to go up and at the same time will encourage the public to work together to prevent the increase. The campaign will encourage measures such as walking, cycling and anti-idling with the aim of turning high pollution days into 'Breathe Better Days'. The programme will include a schools engagement programme. The campaign is led by the Mayor of London, Camden, Croydon and Islington Boroughs, airTEXT, and is supported by Defra. The project also has links to Joaquin academic research programme.
- **Cleaner Air Champions** – a project being delivered by the GLA in partnership with Sustrans to reduce local air pollution and improve the environment in the London Boroughs of Hackney, Redbridge and Havering. Cleaner Air Champions will raise awareness about air quality problems and promote walking, cycling, planting of trees and green walls. They will also give advice on improving home energy and

reducing individual exposure. A second phase of the Cleaner Air Champions project is planned for Islington.

The Mayor's Air Quality Fund has also supported:

- **Cleaner Air for Schools toolkit** (see above)
- **Barts Health NHS Cleaner Air Project** (includes City of London, Newham, Tower Hamlets and Waltham Forest councils). The project works with surgeries and health care professionals to train staff and enable them to communicate key air quality messages. These advocates will provide travel advice, promote and educate people to take action and minimise their exposure to pollution.

Further funding is to be made available in April 2016 which may offer more opportunity for delivery of public health projects in London.

### **Devon**

- 4.11 The Devon authorities are currently working on the development of bespoke JSNAs for each of the individual authorities in a similar way to GLA and the Staffordshire authorities. They are also in negotiations with public health colleagues to try and establish a regional public health initiatives delivery post that would be focused on delivering projects that improve air quality related public health outcomes. This would follow the approach taken in Bradford where a Health Improvement Specialist Research Fellow has been employed to deliver a behavior change project aimed at reducing emissions and improving air quality within Yorkshire.

### **Kent and Medway**

- 4.12 The Kent and Medway Air Quality Partnership jointly operate the [Kent Air](#) air quality website. They have produced joint air quality planning guidance and have previously worked on a national JSNA template (current status unknown). In 2014 the partnership obtained funding from DEFRA for a public health campaign. Progress on this work has not been established directly with the partnership but there is evidence available on the internet that joint work is continuing. The group has recently put together a useful 'package of air quality information' for public health colleagues and this was recently presented at a Health and Sustainability Conference in Kent. <http://healthsustainabilityplanning.co.uk/wp-content/uploads/2014/12/Air-Quality-Impacts-Information-Pack.pdf>. The package includes useful health based air quality advice leaflets for members of the public published by the European ESCAPE project and the Health and Environment Alliance (HEAL).

## 5.0 National Activity

- 5.1 In addition to the public health activities taking place within individual local authorities and regional groupings there is evidence that air quality is beginning to receive more attention at a national level within Public Health England and associated NHS functions.

### Public Health England

- 5.2 In its 2014/15 business plan, Public Health England (PHE) made a commitment to develop a programme in support of national and local government to reduce the 25,000 deaths each year in England attributable to air pollution. Part of this programme aims to provide practical assistance to local and national partners on estimating and reducing the health burden attributable to particulate air pollution at the local authority level and more widely. The first stage of this work was the publication of the report '[Estimating estimates of the size of the effects of air pollution on mortality in local authority areas in the UK](#)' which built on the attributable fraction reported as an indicator in the Public Health Outcomes Framework for England.

- 5.3 Since the publication of this report a Public Health England air pollution and public health advisory group has been established to develop options for PHE's future work programme. Consultation workshops have recently been held for mixed audiences of professionals involved in public health, environmental health, air quality, spatial planning and transport across local and national government, business and the third sector to comment on the draft work programme.

- 5.4 A PHE draft work programme to reduce the 25,000 deaths per year in England attributable to particulate air pollution was presented for comment to air quality specialists at a workshop in Birmingham on the 2<sup>nd</sup> February 2015. The stated aims of the event were:

- To share good practice in local and national interventions to reduce the effects of air pollution on health
- To develop proposals for PHE's work programme focussing on advocacy, awareness-raising and the development of public health evidence to support national and local government
- To explore how efforts to reduce mortality attributable to air pollution can maximise indirect public health benefits related to climate change mitigation and healthy living

- 5.5 The workshop was well attended by both public health and air quality practitioners. Round table discussions took place around the following themes:

1. Support the work of government (local and national)
2. Raise Awareness (public awareness and professional awareness)
3. Develop and provide health evidence (for both national and local evidence)

There was a strong emphasis on PHE influencing exposure reduction through the provision of air quality information (particularly to the general public and schools), promotion of alternative 'low pollution routes' for walkers, cyclists, routes to school etc and provision of better spatial planning advice. PHE were keen to identify 'priority' air quality improvement

measures that could be cascaded to local Health and Well Being boards and supported at a local level.

5.6 The summing up by a PHE spokesperson at the end of the event identified the following areas as priorities:

- Increase public information on health impacts and answer the questions What does it mean for me? What is in it for me? Schools, parents and teachers were identified as key audiences and the potential use of GPs and associated services to spread messages in a continuous and consistent way was recognised.
- There needs to be a strong message sent out to the public and Health and Well Being boards about the impacts of long term exposure to poor air quality. Currently there is too much emphasis on air pollution episodes.
- Identification of key air quality intervention methods that work and ranking these in terms of cost and effectiveness for use by local Health and Well Being boards. *(DEFRA are currently providing this advice but individual local authorities and LEP may be better placed to do this. Potentially there is a strong role for the LEP hub in this area).*
- Assessment of the true costs to the NHS of doing nothing to improve air quality. It was agreed that more work on health economics and local correlations between ill health and air pollution were needed.
- Continuation in the provision of health advice to DEFRA / local authorities.
- Publishing of the public health indicator on NO<sub>2</sub>
- Provide a stronger message to health and well being boards that poor air quality is a problem that needs addressing both nationally and locally.
- Consideration of the impacts of indoor air quality on health (90% of adult time in the UK is spent indoors).

#### **NHS sustainability Unit**

5.7 The NHS sustainable development unit published its Sustainable Development Strategy for the Health, Public Health and Social Care System 2014-2020 in January 2014.

<http://www.sduhealth.org.uk/policy-strategy/engagement-resources.asp>. It describes the vision for a sustainable health and care system by reducing carbon emissions, protecting natural resources, preparing communities for extreme weather events and promoting healthy lifestyles and environments. Whilst air quality receives relatively little coverage within this document there is an acknowledgement that co-benefits can be achieved by some actions (e.g walking and cycling) for both health and air quality.

5.8 During the course of this review a telephone interview was undertaken with David Pancheon, Director of NHS Sustainable Unit. David indicated that the Sustainable Development Unit (SDU) is currently working with about 10 localities across England (especially top tier authorities and their Health and Well-Being Boards) to develop a simple toolkit to embed the principles and benefits of sustainable development within local cross system approaches to health and well-being. The main areas involved are *Northampton*,

*Peterborough, Nottingham, Oldham, Sheffield, Kent, Kensington-Chelsea-Westminster, Hammersmith-Fulham, Wiltshire, Enfield, and Suffolk.* Air quality is included in this review process under the theme 'Housing and Place'.

- 5.9 A draft toolkit was launched by the Deputy Chief Medical Officer on September 16<sup>th</sup> 2014 at the PHE Annual Conference in Warwick. The toolkit continues to be developed as an online resource as further best practice is gathered from across the country. An invitation has been extended to Low Emission Partnership members to be involved in the further development of the toolkit and to influence what types of air quality improvement measures are recommended to health and well being boards. The aim is to provide clear guidance on why air quality is important (collate existing evidence) and to identify a 'menu' of top interventions that can be applied locally to improve air quality and deliver other health benefits. Much of this type of work has already been undertaken by the Low Emission Strategy Partnership during the recent LES/LEZ review work and the development of the LES hub. A strong opportunity therefore currently exists to align the research work undertaken by the LEP with the wider sustainability agenda of PHE / SDU. There may also be an opportunity for the LES hub to support the SDU toolkit.

## 6.0 Academic Research

- 6.1 There are many research programmes focused on air quality and health currently taking place both within the UK and abroad. A small selection are highlighted here:

### **Born in Bradford**

- 6.2 Born in Bradford is one of the biggest and most important medical research studies currently being undertaken in the UK. It is led by the Bradford Teaching Hospitals NHS foundation trusts and has links to numerous universities including University of Leeds, University of Bradford and University of York. It also has links with European projects such as HELIX and ESCAPE (see below).
- 6.3 The Born in Bradford project started in 2007 and is looking to answer questions about the city's health by tracking the lives of nearly 14,000 babies and their families from across the Bradford district. The aim of Born in Bradford is to find out more about the causes of childhood illness by studying children from all cultures and backgrounds as their lives unfold. The project will follow the cohort of children until they are adults, helping doctors to understand more about the big health challenges of the 21st Century such as heart disease, mental health and cancer. Exposure to air pollution is one of the factors being looked at as part of this study. Early results from the Born in Bradford project indicate that there is a link between air pollution and low birth weight. <http://www.borninbradford.nhs.uk/>

### **HELIX – Human Early Life Exposure Project**

- 6.4 The Human Early-Life Exposome (HELIX) project is a collaborative European research project that aims to assess early-life exposure to multiple environmental factors (including air quality) and associate these with biomarkers and child health outcomes. It is led by researchers at CREAL (Centre for Research in Environmental Epidemiology) in Barcelona [http://www.creal.cat/en\\_index.html](http://www.creal.cat/en_index.html).
- 6.5 HELIX will consider prenatal and postnatal exposure to a broad range of chemical and physical exposures in six existing birth cohort studies in Europe (including the Born in Bradford cohort). Some of the outcomes under consideration include those for fetal and child growth, obesity, neurodevelopment, and respiratory development / illness. A health

impact assessment exercise will evaluate risks and benefits of combined exposures. Further information on the project can be found at <http://www.projecthelix.eu/>

### **ESCAPE - European Study of Cohorts for Air Pollution Effects**

- 6.6 The ESCAPE study is a collaborative European Research project that is investigating the long-term effects on human health of exposure to air pollution in Europe. The project is led by researchers at Utrecht University in the Netherlands with other aspects of the programme being delivered at Imperial College London and other research centres in Germany, Switzerland and Sweden. There is a particular emphasis on collating the impact of long term exposure to particulate matter and nitrogen oxides in European cohorts to health impacts. Some of the health responses being investigated include adverse perinatal<sup>3</sup> health outcomes, development of diseases such as asthma in children; respiratory disease endpoints in adults, cardiovascular disease endpoints in adults, all-cause and cause-specific mortality, and cancer incidence.

<http://www.escapeproject.eu/structure.php>

### **JOAQUIN - Joint Air Quality Initiative**

- 6.7 Joaquin (Joint Air Quality Initiative) is an EU cooperation project supported by the INTERREG IVB North West Europe programme ([www.nweurope.eu](http://www.nweurope.eu)) aimed at supporting health-oriented air quality policies in Europe. The programme provides policy makers with the necessary evidence on the current local and/or regional situation (e.g. measurements of emerging health relevant parameters), provides them with best-practice measures that can be taken and motivates them to adapt and strengthen their current air quality policies.
- 6.8 A large amount of the Joaquin programme is focused on air pollution monitoring, particularly in relation to Ultra Fine Particles (UFPs), but there is also a strong health promotion element aimed at disseminating information about air quality and health to the general public. The programme has supported the Mayor of London's Breathe Better Together campaign and has its own public information website <http://www.cleanerairbetterhealth.eu/>. There are also a number of short air quality information films hosted on the Joaquin website aimed at children and the general public <http://joaquin.eu/news/Short-Films/page.aspx/112>. In partnership with the University of Brighton three public events have been held in Brighton providing information on air pollution, its effects and what individuals can do to reduce their own exposure.
- 6.9 Leicester City Council and Leicester University also have links to the Joaquin project. The implementation of a traffic light gating system to reduce air pollution in Leicester is included in the Joaquin work programme but progress with this has not been established for the purpose of this report.

## **7.0 Health Research Organisations**

- 7.1 There are a number of national and international organisations that promote and support research into air quality and health effects.

### **National Institute for Health Research**

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<sup>3</sup> During the period shortly before and after birth

- 7.2 The National Institute for Health Research (NIHR) is funded through the Department of Health to improve the health and wealth of the nation through research. It commissions and funds research, provides research facilities and supports individuals undertaking research.
- 7.3 The NIHR has associated with it 13 CLAHRCs (Collaborations for Leadership in Applied Health Research and Care) across England with £120 million invested. These regional CLAHRCs bring together representatives from the NHS, industry, the third sector and Universities to carry out research into health issues and put the findings into practice. Each CLAHRC focuses on different areas of research <http://www.clahrcpp.co.uk/#!clahracs/cjg9>
- 7.4 The Yorkshire and Humber CLAHRC has recently funded an air quality and health strategy project at City of Bradford MDC and is funding further research into air quality health economics at the University of York (also in partnership with City of Bradford MDC).

#### **Academic Health Science Networks**

- 7.5 Academic Health Science Networks (AHSNs) were given licence to operate by NHS England in May 2013. Fifteen health networks have been set up to create partnerships between patients, health services, industry, and academia.
- 7.6 In Yorkshire the work of the AHSN is supported by an Improvement Academy <http://www.improvementacademy.org/> based in Bradford. Four local authorities Hull City Council, Calderdale Metropolitan Borough Council, Bradford Metropolitan Borough Council and Wakefield Council are working with the Improvement Academy to apply the Institute for Healthcare Improvement's 'Model for Improvement' ([www.ihl.org](http://www.ihl.org)) to test a range of ways of reducing levels of emissions.

#### **HEAL - Health and Environment Alliance**

- 7.7 The Health and Environment Alliance (HEAL) is a leading European not-for-profit organisation addressing how the environment affects health in the European Union (EU). With support from more than 65 member organisations HEAL aims to bring expertise and evidence from the health community to different decision-making processes. The membership represents health professionals, not-for-profit health insurers, doctors, nurses, cancer and asthma groups, citizens, women's groups, youth groups, environmental NGOs, scientists and public health institutes. It is independent of any political party or commercial interest.
- 7.8 HEAL campaigns for better environmental legislation and provides research evidence to support new environmental policies within the EU. HEAL supports research into air quality issues and has recently worked with the ESCAPE project to produce a number of health and air quality public information leaflets.

<http://www.env-health.org/resources/press-releases/article/information-release-new-patient>

#### **European Respiratory Society (ERS) and European Lung Foundation (ELF)**

- 7.9 ERS is a European based professional organisation which seeks to alleviate suffering from respiratory disease and promote lung health through research, sharing of knowledge and through medical and public education. The ERS membership is made up of individuals working in the field of respiratory health. It provides financial support for research into

various fields of respiratory health as well as providing training, guidelines and handbooks. It targets policy makers and health authorities to encourage development of public policy which promotes and supports respiratory health. In 2000 ERS formed the European Lung Foundation (ELF).

- 7.10 ELF works to communicate the work of the European Respiratory Society (ERS) to those outside the field of lung health. ELF also works to ensure that people with lung diseases and the general public have the opportunity to influence respiratory research and guidelines at the European level. The two main work programmes relate to promoting good lung care and involving patients in healthcare.
- 7.11 ELF is responsible 'Healthy Lungs for Life', one of the largest ever lung campaigns. The current theme of the Healthy Lungs for Life campaign is 'Breathe Clean Air'. <http://www.europeanlung.org/en/projects-and-research/projects/healthy-lungs-for-life/home/> The website provides information and advice on how to hold 'health lung' events. It particularly encourages involvement in World Spirometry Day events where members of the public can have their lung function tested and receive information on the impacts of indoor and outdoor air quality on their lungs. The website also hosts air quality and health activity resources for children and a series of healthy lung information leaflets.

## 8.0 References and Acknowledgements

The public health review draws on the results of a questionnaire circulated to a number of local authorities, internet research, and informal consultation with key practitioners, including:

Private communication with Sally Jones – City of Bradford MDC

Private communication with Simon Newcombe – Mid Devon

[Private communication with Nigel Jenkins – Sussex Council](#)

Private communication with Vicky Jackson – Sefton Council

Private communication with Lisa Croft – Doncaster Council

Private communication with Ryan Carroll – Calderdale Council

Private communication with Ogo Ossamer – Sheffield Council

Private communication with Julie Kent – Rotherham Council

Private communication with Chris Shields – Barnsley Council

Private communication with Elliot Treharne – Greater London Authority (GLA)

Private communication with Dr Alex Stewart - Merseyside Public Health

Private communication with David Pancheon - NHS sustainability Unit

Private communication with Dr Laura Bojke - University of York Health Economics Department

## 9.0 Useful Websites

Kent and Medway Air Quality Partnership [www.kentair.org.uk](http://www.kentair.org.uk)

Sussex Air – ([www.sussex-air.net/Default.aspx](http://www.sussex-air.net/Default.aspx))

Sussex 'airAlert' (<http://www.airalert.info/Splash.aspx>)

London Air Text <http://www.airtext.info/>

South Yorkshire Care4air <http://www.care4air.org/>

Cleaner Air for London Website <http://www.cleanerairforlondon.org.uk/>

Cleaner Air for Schools <https://www.london.gov.uk/priorities/environment/clearing-londons-air/clean-air-schools>

GLA JSNA project <https://www.london.gov.uk/priorities/environment/publications/air-quality-report-for-public-health-professionals> .

NHS Sustainable Development Strategy <http://www.sduhealth.org.uk/policy-strategy/engagement-resources.asp>

Born in Bradford Project <http://www.borninbradford.nhs.uk/>

HELIX project <http://www.projecthelix.eu/>

Centre for Research in Environmental Epidemiology [http://www.creal.cat/en\\_index.html](http://www.creal.cat/en_index.html).

ESCAPE project <http://www.escapeproject.eu/structure.php>

JOAQUIN (public information films) <http://joaquin.eu/news/Short-Films/page.aspx/112>

JOAQUIN health promotion website <http://www.cleanerairbetterhealth.eu/>

National Institute for Health Research <http://www.nihr.ac.uk/>

Collaborations for Leadership in Applied Health Research and Care  
<http://www.clahrcpp.co.uk/#!clahr>

Institute for Healthcare Improvement [www.ihl.org](http://www.ihl.org)

Yorkshire and Humber Academic Science Network <http://www.yhahsn.org.uk>

Yorkshire and Humber Improvement Academy <http://www.improvementacademy.org/>

Health and Environment Alliance (HEAL) health advice leaflets

<http://www.env-health.org/resources/press-releases/article/information-release-new-patient>

European Lung Foundation 'Healthy Lungs for Life' campaign

<http://www.ersnet.org/http://www.europeanlung.org/en/projects-and-research/projects/healthy-lungs-for-life/home/>

## Annex 1: Public Health and Air Quality Questionnaire

### Questions

Question 1 – Which of these best describes your role?

- a) Dedicated air quality officer
- b) District officer with responsibility for air quality
- c) Manager of team responsible for air quality
- d) Head of Service or other management role

Question 2 – Does the department you work for have a formal serviced level agreement with public health relating to air quality management / monitoring?

- a) Yes
- b) No
- c) In the process of developing one
- d) Don't know

Question 3 – Do public health currently provide funding for any aspect of air quality work within your department?

- a) Yes
- b) No
- c) Don't know

Question 4 – What aspects of your work have public health provided funding for?

- a) Air quality staff resources
- b) Service and maintenance of existing air quality monitoring network
- c) Repairs of replacement equipment for existing air quality monitoring network
- d) Additional air pollution monitoring capability
- e) Air quality and health research projects(s)
- f) Public health campaign
- g) Health Impact Assessment
- h) Other (please specify)

Question 5 – What public health / air quality activity is currently taking place within your authority / local area?

- a) PM2.5 monitoring
- b) Public health and air quality campaign
- c) Academic research
- d) Cross team idea exchange / work shadowing
- e) Health Impact Assessments
- f) Joint policy development e.g. JSNA, air quality action plan etc
- g) Other (please specify)

Question 6 – How would you describe your current working relationship with your public health team?

- I know members of the public health team and they know me
- Public health understand what I do and how it fits into their work
- Public health understand and support the messages I need to convey about local air quality and health
- I am satisfied with the current level of support I receive from public health staff
- I expect to spend more time working with public health colleagues over the next year

(available responses to each of these statements were strongly agree, agree, neither agree or disagree, disagree, strongly disagree)

**7. Please provide further details here of any public health related projects / policies/ actions within your local authority that may be of interest to others and which you are happy to share as an example of good practice.**

## Annex 2 : Air quality and public health – West Yorkshire Case Study

This Annex provides an overview of the recent ground breaking collaborative working that has been undertaken within the West Yorkshire region to develop a robust air quality health impact evidence base that now underpins the emerging West Yorkshire Low Emission Strategy (WYLES). A number of examples of good practice are highlighted demonstrating how the West Yorkshire local authorities are successfully working together, and in conjunction with other partners, to develop a regional approach to emission reduction and air quality improvement.

### Acknowledgement

Special thanks are given to Sally Jones (WYLES project manager) for her help and assistance in developing this West Yorkshire case study

### West Yorkshire Transport Emission Group (WYTEG)

The West Yorkshire authorities (Bradford, Leeds, Wakefield, Calderdale and Kirklees) have a history of working together to reduce emissions in their areas through the West Yorkshire Transport Emission Group (WYTEG). Set up initially as an expert group to inform the development of the West Yorkshire Transport Plan, the group is supported by environmental health, sustainability, transport planning, climate change and noise experts from across the West Yorkshire authorities, as well as representatives from the West Yorkshire Combined Authority (WYCA) and the Institute of Transport Studies (Leeds University). Some of the work programmes undertaken by the group recently include delivery of public EV charging points, bus emission reduction projects and hybrid taxi emission research.

### Bradford / Leeds LES/LEZ feasibility study

In 2011/12 DEFRA awarded Bradford Council funding to investigate and support the development of a LES with the aim of reducing road transport emissions across the Bradford district. At the same time Leeds Council secured DEFRA funding to conduct a technical LEZ feasibility study for the Leeds area. Bradford and Leeds took a partnership approach to their LEZ Studies, working with each other and local health professionals, including Public Health, NHS Bradford and Bradford Health Observatory to undertake a joint LEZ feasibility study and associated Health Impact Assessment (HIA).

The Bradford MDC / Leeds CC LEZ feasibility study was carried out in four phases:

- i) Assessment of baseline road transport emissions for 2012, 2016 and 2021 for oxides of nitrogen (NO<sub>x</sub>), particulate matter (PM) and carbon dioxide (CO<sub>2</sub>), and the resulting changes from numerous LEZ intervention scenarios<sup>4</sup>.
- ii) Assessment of the pollution concentrations from the modelled emissions on fine particles (PM<sub>2.5</sub>) and NO<sub>x</sub> through dispersion modelling of each scenario.
- iii) Assessment of the impact of road transport emissions on health, including deprivation correlation, and the anticipated effects of introducing selected LEZ intervention scenarios.
- iv) Economic assessment of the costs and benefits of introducing selected LEZ intervention scenarios

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<sup>4</sup> The LEZ interventions included various combinations of Euro VI fleets, returning to pre 2000 petrol/diesel ratios, retrofit solutions for buses, and 10% reduction in car fleet (due to walking and cycling measures)

The Health Impact Assessment (HIA) was carried out as a joint exercise between Public Health England, NHS Bradford, Leeds City Council and Bradford MDC. The work was peer reviewed by Centre for Research in Environmental Epidemiology (CREAL), Barcelona. It has resulted in the development of a unique health impact assessment methodology which has provided the following quantified evidence;

- 1) Health impact of transport
- 2) Health improvements associated with a number of emission reduction interventions
- 3) Air quality impact and health inequalities

The study is supported by some of the most recent health research into air quality and health impacts and has led to an understanding of the impact of the following health metrics;

- 1) Annual Deaths – PM2.5 (particulate matter <2.5um)
- 2) Annual Cardiopulmonary deaths – PM 2.5
- 3) Annual Coronary events – PM2.5
- 4) Annual Low birth weight babies – NO2 (nitrogen dioxide)
- 5) Annual Low birth weight babies - PM2.5
- 6) Children developing asthma by 18 – NO2
- 7) Pre-term births - PM2.5
- 8) Annual years of life gained for newborns (all births combined)

The joint approach to the LEZ feasibility study has enabled effective partnership working to develop between transport, health and air quality professionals within West Yorkshire and this collaboration is now continuing through the development of the West Yorkshire Low Emission Strategy (WYLES). The LEZ work has been reported to the Health and Well Being Board at Bradford who expressed their support and this will exert influence on Council decisions going forward. The results of the HIA have also already been used to support a number of successful air quality improvement and air quality research funding bids (e.g. £400K from Cleaner Bus Technology Fund to support retrofitting of NO<sub>x</sub> reduction technology to service buses in Bradford ).

### **West Yorkshire Low Emission Zone Study**

In 2012 Bradford Council applied for further DEFRA funding to extrapolate the Bradford /Leeds LEZ feasibility work across the rest of the West Yorkshire area. This will involve a further health impact assessment which will collaborate with public health and Public Health England (PHE). It will provide an important evidence base for policy change and creation of a holistic transport, planning, public health and environmental strategy for the West Yorkshire region.

### **West Yorkshire Low Emission Strategy (WYLES)**

Bradford currently chairs and manages the development of the **West Yorkshire Low Emission Strategy (WYLES)**. The project incorporates a project board representing all the five West Yorkshire Local Authorities (Bradford, Leeds, Wakefield, Calderdale and Kirklees), WYCA, WYTEG, Local Transport Plan (LTP) Joint Officer Board and Public Health England.

The WYLES will involve public health and PHE as key delivery partners. The commitments in the WYLES are cross sectoral including public transport interventions, active travel, development control, procurement, awareness raising and large low emission infrastructure projects. The WYLES sets a clear plan for immediate action and future work in West Yorkshire to reduce the impact of road transport emissions. The document has a five year timeframe (2015-2020). The WYLES will be used to integrate emission reduction principles within the Single Transport Plan and help achieve the WYLES vision of *'a West Yorkshire in which the negative health impacts of vehicles emissions on its residents and visitors is negligible, a clean attractive place in which to work, live and invest'*.

### **West Yorkshire Low Emission Planning Guidance**

The Bradford LES adopted in November 2013 includes LES planning guidance which aims to reduce emissions from development through the use of damage cost calculations and application of emission mitigation measures / financial contributions to prevent / offset emission growth. The aim is to reduce all emissions to air for the purpose of protecting public health. The approach is consistent with that set out in the Low Emission Partnership low emission planning SPD guidance note (currently under revision). As part of the WYLES project a draft West Yorkshire LES planning guidance note has recently been published and is available from Sally Jones at Bradford MDC (sally.jones@bradford.gov.uk).

### **University of York Health Economics Research**

The health impact assessment undertaken in conjunction with the Leeds / Bradford LEZ study was based on the DEFRA IGGB damage costs. These costs are based on a 'willingness to pay' approach which is not routinely used to assess health costs within the NHS. New research into the health costs of air quality (using the Bradford/Leeds Low Emission Zone research as an example) is now being undertaken by health economists at York University via joint working with the CLARCH (<http://www.shu.ac.uk/research/hsc/clients/clahrc-yorkshire-and-humber>). This study is assessing the cost impacts of air pollution in terms of QALYS (Quality Adjusted Life Years). QALYS are a measure of disease burden, including both the quality and the quantity of life lived. They are used in assessing the value for money of a medical intervention. Initial indications from this study are that the health costs of air pollution may be much higher than previously recognised. The funding opportunity for this project arose directly from the joint working with NHS practitioners on the Bradford / Leeds LES / LEZ project. It is an excellent example of how effective partnership working between local authorities and health practitioners can improve funding and research opportunities in relation to air quality and public health.

### **West Yorkshire Air Quality and Health Strategy Project**

This project is jointly funded by DEFRA, WYLTP and the internationally recognised Born in Bradford research programme. The project has established a health improvement specialist research fellow within the Bradford public health team to work on a behaviour change project aimed at reducing emissions and improving air quality within Yorkshire. The post aims are to develop and implement a behaviour change research project aimed at:

- -Understanding key barriers and enablers, both at the individual and policy level, to improving air quality.
- -Identifying ways of influencing individual behaviour and policy maker's decisions to improve air quality.
- -Developing an evidence based transferrable intervention tool aimed at promoting policy maker and individual behaviour change with regards to air quality.

The project will provide papers on the following:

- Air Quality and Behaviour Change – the barriers to active transport on the school journey
- Air Quality and Policy Change – the barriers to policy change

The outcomes of these research projects will help West Yorkshire understand the barriers to both uptake of active travel and behaviour change and the barriers to policy change and to development

of evidence based approaches to tackle these issues which have been locally identified as the most challenging aspects air quality improvement policy implementation.

Further information on the project can be obtained from Sara Ahern at Bradford Council.

### **Collaboration with Improvement Academy (Academic Health Science Network)**

Within West Yorkshire good links have been established with the Improvement Academy based in Bradford. The Improvement Academy is affiliated to the Yorkshire and Humber Academic Health Science Networks (AHSN) which aims to aim to improve patient and population health outcomes by translating research into practice, and developing and implementing integrated health care services. Three of the West Yorkshire councils (Bradford, Calderdale and Wakefield) along with Hull City Council have come together to form a collaborative with the Improvement Academy that will apply the Institute for Healthcare Improvement's 'Model for Improvement' ([www.ihl.org](http://www.ihl.org)) to test a range of ways of reducing levels of emissions. The project will result in shared learning across Yorkshire and Humber and will also be looking specifically at raising public awareness, this will be done in partnership with Environmental Services, Public Health, the Improvement Academy, Public Health England and a communications and health professional working at Wakefield Council. The project will involve a number of student registrars. Early outcomes from this work are a survey and e-petition aimed at raising air quality awareness;

1) Survey - <https://www.surveymonkey.com/s/cleanourair>

2) E-petition <https://you.38degrees.org.uk/petitions/clean-our-air-it-s-killing-us-1>

### **Collaborative working outcomes for West Yorkshire**

Collaborative working to develop a strong regional air quality health evidence base which incorporates the latest health research and is supported by local health officials has already delivered many positive outcomes for the West Yorkshire region. These include:

- More informed council members and public policy decision making processes resulting in real regional policy changes that will drive air quality improvement across the West Yorkshire area. (e.g. WYLES, West Yorkshire Planning Guidance)
- Improved awareness and understanding of air quality and health issues amongst health practitioners across the region. Health and Well Being Boards now have access to the data they need to make informed health improvement decisions and are already lending their support to air quality improvement measures.
- Greater success in attracting funding to support air quality improvement measures and research programmes to the region. This is due to the readily available health impact data to support funding applications and improved communication networks that have identified new sources of funding, particularly within the NHS and academic sectors e.g. CLAHRC funding for health economics project, collaborative working with Improvement Academy and Bradford Institute of Health Research
- Unique opportunities to investigate barriers to change and improvement using skilled high calibre researchers which in the longer term will result in better policy development and practical implementation of emission reduction solutions at a regional level e.g. West Yorkshire Air Quality and Health Strategy Project

- Improved regional skill base through the use of existing local authority and public health staff to undertake modelling work, develop policies and manage delivery of low emission strategies
- Recognition at a national level for the progress and achievements made. Bradford have recently been highly commended for air quality and shortlisted for sustainable travel and transport in the Sustainable City Awards and were also shortlisted for air quality in the MJ Local Government awards.
- The implementation of real change on the ground. Progress to date includes widespread installation of public and domestic EV charging points throughout the region (through both the LES planning route and public funded charging points), retrofitting of emission control technology to school buses and other service vehicles (using Cleaner Bus Technology Funding) and incorporation of low emission vehicles into council fleets and procurement policies.
- Opportunities to influence national guidance, policies and campaigns.