

**Agenda Item No: 6**

**Proposed Approach to Air Quality and Health across Cambridgeshire**

*To:* **Health Committee**

*Meeting Date:* **Thursday 16th November**

*From:* **Director of Public Health**

*Electoral division(s):* **All**

*Forward Plan ref:* **Not applicable**      *Key decision:* **No**

*Purpose:* **To outline responsibilities of statutory organisations with regard to the management and mitigation of air pollution and propose a more strategic approach to management of air quality across Cambridgeshire.**

*Recommendation:* **The Health Committee is asked to comment on and agree the proposed strategic approach to air quality.**

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## **1. BACKGROUND**

- 1.1 At the September Health Committee members were provided with an update on measures to address concerns regarding air quality in Cambridgeshire, following the Health Committee recommendations from the 16th March 2017. The committee were disappointed with the level of progress made and requested that other organisations and local authorities attributed the issue as a higher priority. The Committee requested that a further report be presented in 2 months that 1) outlined responsibilities of statutory organisations with regard to the management and mitigation of air pollution and 2) propose an outline for an air quality partnership strategy.

## **2. Main Issues**

### **2.1 Roles and responsibilities of Statutory Bodies in regard to Air Quality**

The air quality agenda in Cambridgeshire is not owned by a single organisation or department. The role of public health is to provide information and support on the health based implications of air quality at a population level. We facilitate this by bringing together the key stakeholders listed in paragraph 2.3 below who may not normally meet for air quality issues or may only be considering the environmental aspects, for example Public Health are now contributing to the Transport needs review of the Cambridge Biomedical Campus (one of the Greater Cambridge Partnership Projects) following concerns raised by members of this Committee and officers at the City Council.

Districts and City Councils have statutory requirements to assess, monitor and develop action plans on air quality where required; they also have plan making powers which can effect air quality. The County Council, Combined Authority and Greater Cambridgeshire Partnership are responsible for actions and intervention's (mainly relating to transport) which can mitigate or reduce air pollution. Table 1 outlines in detail the roles and responsibilities of statutory bodies in relation to air quality across the local system.

**Table 1 - The Air Quality roles and responsibilities of Statutory Bodies**

<b>Responsibility</b>	<b>District Councils</b>	<b>County Council</b>	<b>Combined Authority/Greater Cambridgeshire Partnership</b>
<b>Local Air Quality Management (LAQM) process</b>			
Review and Assessment of local air quality	District councils should carry out periodic review and assessment of air quality within their area. The results of this review and assessment should be set out in the Annual Status Report (ASR), which is to be completed each calendar year. (Monitoring is the actual measurement of air quality i.e. by diffusion tubes and/or automatic monitors, Assessment is the process whereby the monitoring results are compared to the national objectives)	County councils have a number of obligations under LAQM including proactively engaging with the district council as soon as an air quality issue is identified.	It is assumed that the Combined Authority as a transport authority would be under similar obligations to the County Council
Designation of Air Quality Management Area (AQMA)	District councils are required to designate an AQMA when as a result of the review and assessment, it appears that any of the *air quality objectives are not being achieved <small>*Air quality objectives are the target levels for pollutants above which human health is considered to be at risk.</small>	Where a district council is preparing an Action Plan, county councils are obliged to submit measures related to their functions (i.e. local transport, highways and public health) to help meet air quality objectives in their local area.	It is assumed that the Combined Authority as a transport authority would be under similar obligations to the County Council
Preparation of air quality action plans	Once an AQMA has been designated the district council should prepare an Action Plan that sets out how it will achieve the air quality standards or objectives for the area that it covers.	There is now strong evidence on the significant contribution of transport emissions to air pollution in urban areas and the Government expects county councils to bring forward measures in relation to addressing the transport impacts in its area for inclusion in any Action Plan.	It is assumed that the Combined Authority as a transport authority would be under similar obligations, and that the Greater Cambridge Partnership should play an active part in any Action Plan within its geographic boundary
Engagement and consultation	Engagement with the county council should take place at the start of the process. In reviewing and assessing air quality in a local authority area or preparing an Action Plan, the district council should take into account any recommendations made to it by the county council. It may not agree with these recommendations The district council should consult on its Action Plan, and is expected to make a copy of the Plan and ASR freely available for public inspection.	The county council is a consultee to ASRs and Action Plans. The county council may make recommendations to the district council in relation to any review and assessment of air quality or development or amendment of Action Plans in the local authority area.	It is assumed that the Combined Authority as a transport authority would be under similar obligations to the County Council

Local Transport Plan and Local Plans			
Local Plan and development control	<p>Local Plans can affect air quality through the location, types of development and the level of encouragement given to sustainable transport. In plan making, it is important to take into account AQMAs and other areas where there could be specific requirements or limitations on new development because of air quality. The Local Plan may need to consider:</p> <ul style="list-style-type: none"> <li>• cumulative impact of a number of smaller developments on air quality as well as the effect of more substantial developments;</li> <li>• the impact of point sources of air pollution;</li> <li>• ways in which new development would be appropriate in locations where air quality is or likely to be a concern and not give rise to unacceptable risks from pollution</li> </ul> <p>Air quality can be a material consideration in planning decisions, normally relating to pollution from additional traffic but also point sources</p>	<p>The County Council has development control powers over minerals and Waste functions which can effect air quality.</p> <p>County council Transport Assessment team have a vital role in new developments to ensure access and growth do not contribute to congestion issues which may exacerbate existing issues or create new ones?</p>	<p>The Combined authority through its Non-Statutory Spatial Plan will have oversight of the supply of land for new homes and jobs and will map the totality of new infrastructure requirements, including road, rail, utilities and public services.</p>
Local Transport Plan		<p>Integrating Air Quality Action Plans with Local Transport Plans (LTP) is strongly encouraged, and will need partnership working in two-tier and metropolitan areas.</p> <p>It is important that LTPs are effectively coordinated with air quality, climate change and public health priorities – measures to achieve these goals are often complementary.</p> <p>New road schemes require assessment for their AQ impacts using prescribed methodologies.</p>	<p>It is assumed that the Combined Authority as a transport authority would be under similar obligations to the County Council</p> <p>New road schemes require assessment for their AQ impacts using prescribed methodologies.</p>
Other Controls	<p>Vehicle idling is an offence against the Road Traffic (Vehicle Emissions) (Fixed Penalty) (England) Regulations 2002. The law states that is an offence to idle your engine unnecessarily when stationary. If you fail to turn your engine off after being spoken to you may be issued with a fixed penalty notice of £20. This can be enforced by the police but Local Authorities can also apply to take up this power</p>		

**Other Regulators**

Industrial pollution - regulators (Environment Agency, Local Authorities) have a duty to consider Local Air Quality Management when discharging their pollution control functions under:

- Environmental Permitting Regulations
- Integrated Pollution Prevention and Control
- Local Authority Pollution Prevention and Control
- Local Authority Integrated Pollution Prevention and Control

## **2.2 Challenges in developing a strategic approach to tackling air pollution**

There are number of challenges which need to be considered when developing a more joined up county wide approach to air quality.

### **2.2.1 Fragmented ownership of the air quality agenda**

As outlined above the air quality agenda is not owned by a single organisations or group with responsibility for monitoring and mitigation held by different organisations, this makes a system wide response more challenging.

### **2.2.2 Burden of air quality varies across Cambridgeshire**

Levels of recorded air pollution vary across Cambridgeshire with Air Quality Management Areas (AQMA) declared in Cambridge City, South Cambridgeshire, Huntingdonshire and Fenland; East Cambridgeshire currently does not have an AQMA. By nature this means that air quality does not have the same level of focus for all authorities.

### **2.2.3 Knowledge of air quality and its impact among transport and planning officers**

Transport planners and local planners are not experts in air quality, and in two tier areas transport planners do not have access to air quality expertise in their organisations.

### **2.2.4 Lack of air quality specialist capacity**

In many of the district councils there is limited air quality specialist capacity, which means the majority of their focus is on their statutory duties, with little capacity for broader advocacy work or influencing planning and transport decision.

### **2.2.5 Co-benefits from wider interventions**

Air quality should not be seen in isolation as health modelling shows that interventions to increase active travel can result in significantly greater benefits from increased physical activity, compared to direct interventions targeting air quality overall – so greater health benefits will be achieved by people switching to walking and cycling than by switching to electric cars.

## **2.3 Proposed approach**

We recognise the committee's frustrations on progress to date, however we are mindful that partners cannot be forced to engage and there is risk in investing our limited resources in developing a partnership strategy which although comprehensive may not lead to actual progress. Our recommendation would be, rather than developing a partnership strategy to focus our energies on 1) those areas of the county most effected by poor air quality whilst at the same time 2) directly informing broader strategic plans and programmes, such as transport plans and local plans, which have considerable impact on air quality across the whole of the county.

### **2.3.1 Local response**

In Districts with declared Air Quality Management Areas (AQMA) the focus should continue to be on enabling and supporting the authorities to bring forward measures to improve air quality and ensure that the most vulnerable are protected e.g. children and those with health conditions.

### 2.3.2 Strategic response

Over the next two years Cambridgeshire County Council will be developing a new Cambridgeshire and Peterborough Local Transport Plan (LTP) on behalf of the Combined Authority. As transport is one of the main contributors to air quality this will be considered in the LTP. Public Health can play a role in bringing together stakeholders on air quality to provide a more comprehensive joined up response. The development of the LTP would also provide an opportunity to champion and influence opportunities for more active travel within the plan.

The combined authority is also developing a Non Statutory Spatial Plan which will focus on providing a county perspective on infrastructure, linking up local plans and the LTP. Air quality should be considered as part of this process and would be a consideration for a new Quality Charter for Growth which is currently being considered.

These plans will enable us to indirectly influence air quality in those localities where air quality is not deemed to be a priority.

### 2.3.3 Proposed Actions

1. We will work with the existing Cambridgeshire wide Air Pollution Prevention Group to:
  - a. Support District/City Councils air quality specialists to engage relevant senior managers to raise awareness of air quality and the associated health impacts, and to identify opportunities where improving air quality can be integrated into their plans and projects.
  - b. Provide a joint response to the Local Transport Plan and Non Statutory Spatial Plan.
2. Public Health will commission bespoke training for transport planning officers and other relevant officers within the ETE directorate of the Council to increase understanding of the health impact of air quality and its relationship with transport.
3. Develop a stronger evidence base locally which describes the health and economic co-benefits of active travel in relation to air pollution.

## 2.4 Key stakeholders

Due to the complexity of factors that contribute to air quality and the spread of expertise and responsibilities for air quality both across and within organisations, it is essential that the following are engaged in the air quality agenda.

- Districts and City councils
  - Air quality specialists
  - Planners
- County council
  - Transport planners
  - Sustainable transport
- Combined Authority
  - Local Transport Plan
  - Non Statutory Spatial Plan
- Greater Cambridgeshire Partnership

- Transport

### **3. ALIGNMENT WITH CORPORATE PRIORITIES**

#### **3.1 Developing the local economy for the benefit of all**

This approach has the potential to address workplace health and productivity particularly by addressing active modes of transport to and from work. Increased active modes of transport would also contribute towards reduced traffic congestion.

#### **3.2 Helping people live healthy and independent lives**

Air pollution is one of the 20 leading risk factors for disease and contributed more than 2% of the annual disability-adjusted life years (DALYs)<sup>1</sup> lost in the UK in the 2010<sup>2</sup>. There is clear evidence that higher levels of air pollution are associated with exacerbation of conditions such as lung and heart disease which lead to increased use of health services.

#### **3.3 Supporting and protecting vulnerable people**

In England, the most deprived wards experience the highest levels of air pollution and there is a high proportion of children living in these areas. It is worth noting that some new developments in Cambridgeshire are sited near to poor air quality areas.

### **4. SIGNIFICANT IMPLICATIONS**

#### **4.1 Resource Implications**

*There are no significant implications within this category.*

#### **4.2 Procurement/Contractual/Council Contract Procedure Rules Implications**

*There are no significant implications within this category.*

#### **4.3 Statutory, Legal and Risk Implications**

*There are no significant implications within this category.*

#### **4.4 Equality and Diversity Implications**

The following bullet points set out details of implications identified by officers:

- The fragmented approach to Air Quality Management and differences in resources across the different organisations in the county creates inequalities in exposure to environmental pollution and the creation to create the associated health inequalities

#### **4.5 Engagement and Communications Implications**

*There are no significant implications within this category.*

#### **4.6 Localism and Local Member Involvement**

*There are no significant implications within this category.*

#### **4.7 Public Health Implications**

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<sup>1</sup> One DALY can be thought of as one lost year of "healthy" life. The sum of these DALYs across the population, or the burden of disease, can be thought of as a measurement of the gap between current health status and an ideal health situation where the entire population lives to an advanced age, free of disease and disability.

<sup>2</sup> Global Burden of Disease comparative risk assessment



The following bullet points set out details of implications identified by officers:

- Poor air quality can have an effect on the population's health especially vulnerable groups such as the young and older chronically sick.
- The report above sets out specific implications for this priority in paragraphs 2.1.5 and 2.2.1.

<b>Implications</b>	<b>Officer Clearance</b>
<b>Have the resource implications been cleared by Finance?</b>	Yes 01 November 2017 Name of Financial Officer: Clare Andrews
<b>Have the procurement/contractual/ Council Contract Procedure Rules implications been cleared by the LGSS Head of Procurement?</b>	Yes 30 October 2017 Name of Officer: Paul White
<b>Has the impact on statutory, legal and risk implications been cleared by LGSS Law?</b>	Yes 30 October 2017 Name of Legal Officer: Fiona McMillan
<b>Have the equality and diversity implications been cleared by your Service Contact?</b>	Yes 02 November 2017 Name of Officer: Val Thomas
<b>Have any engagement and communication implications been cleared by Communications?</b>	Yes 30 October 2017 Name of Officer: Matthew Hall
<b>Have any localism and Local Member involvement issues been cleared by your Service Contact?</b>	Yes 02 November 2017 Name of Officer: Val Thomas
<b>Have any Public Health implications been cleared by Public Health</b>	Yes 02 November 2017 Name of Officer: Val Thomas

<b>Source Documents</b>	<b>Location</b>
Health Committee Paper 16 March 2017 - AIR QUALITY IN CAMBRIDGESHIRE – IMPLICATIONS FOR POPULATION HEALTH, and associated Minutes	<a href="#">Web Link to Committee Paper</a>  <a href="#">Web link to minutes</a>

## Appendix 1

### Precis of Air quality from the transport and Health JSNA 2015

#### Brief recap on the findings of the Transport and Health JSNA

There are levels of air pollution in Cambridgeshire that impact health, even though most annual averages may not be over Air Quality Thresholds, there are hot spots in Cambridgeshire caused by traffic-related pollution, especially in busy urban areas and around arterial and trunk roads such as the A14.

The JSNA identified several options for addressing air pollution in Cambridgeshire:

- Lower emission passenger transport fleet (e.g. buses and taxis) and traffic restraint.
- Modal shift from cars to walking and cycling. Switching journeys from cars to walking, cycling and public transport not only has a large beneficial impact on the individual's health, but a wider benefit to the population health as there are corresponding decreases in overall air pollution levels and, therefore, reduction in harm.
- Further investigation into the potential for reducing specific person exposure. For example:
  - Text alerts to vulnerable patient groups.
  - Monitoring measures to improve indoor air quality especially in newer office buildings.
  - Better use of health evidence when assessing the populations exposed in new developments.
  - Further understanding around the seasonal impact of air pollution and potential measures that could reduce this.

Further details on transport related air pollution and its impacts on health can be found in the Transport and Health JSNA (<http://cambridgeshireinsight.org.uk/JSNA/Transport-and-Health-2014/15>)

#### The main pollutants, their sources and their impact on human health.

Poor air quality impacts on the most vulnerable residents e.g. the youngest, oldest and those with health conditions, in itself it is **not** a direct cause of death but can be responsible for shortening people's lives. **Error! Reference source not found.** below summarises the main pollutants their sources and the associated health effects.

## Sources of Air Pollution and their Health Effects

Pollutant	Sources	Health Effects
<b>Nitrogen Dioxide</b>	Nitric oxide (NO) is mainly derived from road transport emissions and other combustion processes such as the electricity supply industry. Nitric oxide is not considered to be harmful to health. However, once released to the atmosphere, NO is usually very rapidly oxidized, mainly by ozone (O <sub>3</sub> ), to nitrogen dioxide (NO <sub>2</sub> ), which can be harmful to health. Nitrogen dioxide and NO are both oxides of nitrogen and together are referred to as nitrogen oxides (NO <sub>x</sub> ).	Nitrogen dioxide can irritate the lungs and lower resistance to respiratory infections such as influenza. Continued or frequent exposure to concentrations that are typically much higher than those normally found in the ambient air may cause increased incidence of acute respiratory illness in children.
<b>Fine Particles (PM<sub>10</sub>, PM<sub>2.5</sub> and PM<sub>1</sub>)</b>	Fine particles are composed of a wide range of materials arising from a variety of sources including: <i>combustion sources</i> (such as road traffic); <i>secondary particles</i> , mainly sulphate and nitrate formed by chemical reactions in the atmosphere, and often transported from far across Europe; <i>coarse particles</i> , suspended soils and dusts (eg, from the Sahara), sea salt, biological particles and particles from construction work.	Particles are measured in a number of size fractions according to their mean aerodynamic diameter. Most monitoring is currently focused on PM <sub>10</sub> , but the finer fractions such as PM <sub>2.5</sub> and PM <sub>1</sub> are becoming of increasing interest in terms of health effects. Fine particles can be carried deep into the lungs where they can cause inflammation and a worsening of the condition of people with heart and lung diseases. In addition, they may carry surface-absorbed carcinogenic compounds into the lungs.
<b>Sulphur Dioxide</b>	Sulphur dioxide (SO <sub>2</sub> ) is produced when a material, or fuel, containing sulphur is burned. Globally, much of the SO <sub>2</sub> in the atmosphere comes from natural sources, but in the UK the predominant source is power stations burning fossil fuels, principally coal and heavy oils. Widespread domestic use of coal can also lead to high local concentrations of SO <sub>2</sub> .	Even moderate concentrations may result in a fall in lung function in asthmatics. Tightness in the chest and coughing occur at high levels, and lung function of asthmatics may be impaired to the extent that medical help is required. Sulphur dioxide pollution is considered more harmful when particulate and other pollution concentrations are high.
<b>Benzene</b>	Benzene is a volatile organic compound (VOC) which is a minor constituent of petrol. The main sources of benzene in the atmosphere in Europe are the distribution and combustion of petrol. Of these, combustion by petrol vehicles is the single biggest source (70% of total).	Possible chronic health effects include cancer, central nervous system disorders, liver and kidney damage, reproductive disorders, and birth defects.
<b>1,3-Butadiene</b>	1,3-butadiene, like benzene, is a VOC emitted into the atmosphere principally from fuel combustion of petrol and diesel vehicles. 1,3-butadiene is also an important chemical in certain industrial processes, particularly the manufacture of synthetic rubber.	Possible chronic health effects include cancer, central nervous system disorders, liver and kidney damage, reproductive disorders, and birth defects.
<b>Carbon Monoxide</b>	Carbon monoxide (CO) is a colourless, odourless poisonous gas produced by incomplete, or inefficient, combustion of fuel. It is predominantly produced by road transport, in particular petrol-engine vehicles.	This gas prevents the normal transport of oxygen by the blood. This can lead to a significant reduction in the supply of oxygen to the heart, particularly in people suffering from heart disease.
<b>Lead</b>	Since the introduction of unleaded petrol in the UK there has been a significant reduction in urban lead levels. In recent years industry, in particular secondary non-ferrous metal smelters, have become the most significant contributors to emissions of lead. The highest concentrations of lead and heavy metals are now therefore found around these installations in industrial areas.	Even small amounts of lead can be harmful, especially to infants and young children. In addition, lead taken in by the mother can interfere with the health of the unborn child. Exposure has also been linked to impaired mental function, visual-motor performance and neurological damage in children, and memory and attention span.