Local Air Quality Strategy for Cheshire East Council

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Document Control

	Name	Signed	Date
Report Prepared	Nick Kelly		August 2018
Report Checked	Sarah Allwood		August 2018
Final report	Sean Hannaby		August 2018

Executive Summary

Local authorities have a duty under the Environment Act 1995 to review and assess local air quality within their areas, against a set of health-based objectives for a number of specific air pollutants. If any areas are found where pollutants exceed the objectives, local authorities are required to declare an Air Quality Management Area (AQMA) and to prepare an Air Quality Action Plan (AQAP) setting out measures they intend to introduce in order to reduce concentrations of air pollutants, in pursuit of achieving the objectives.

Since the publication of the initial National Air Quality Strategy in 1997, Cheshire East Borough Council has fulfilled its obligations to identify any areas where there is a potential to exceed the relevant objectives. To date all of the AQMAs which have been declared are in discrete locations across Cheshire East, all of which are predominantly associated with road traffic emissions.

In addition to these formal obligations for Local Air Quality Management, local authorities are encouraged by Defra (Department for Environment, Food and Rural Affairs) to draft and implement local Air Quality Strategies. The aims of the Air Quality Strategy are to support the achievement of the air quality objectives and to ensure air quality is considered within a wide range of local government and regional planning frameworks. This is important, as whilst working towards achievement of the air quality objectives will help reduce the risk of the most serious health effects related to pollution, there are advantages to be gained from the continual improvement of local air quality conditions. By establishing a strategic framework for the inclusion of air quality considerations within Council policies and procedures, a local authority is then well placed to maintain good air quality and secure future improvements.

Delivering improvements to local air quality requires input from a wide range of professions. Therefore this Strategy identifies commitments intended to promote communication and co-operation within Cheshire East Council, between external organisations and the community. These commitments are grouped under a number of relevant policy sectors including air quality, spatial planning, transport, climate change and energy management, health and education.

Although future improvements in local air quality are predicted as a result of technological advances in vehicle engines and improved fuels, there is currently some doubt as to their efficacy, and there remains a need to reduce the increasing reliance on private motor vehicle use and to provide access to improved public transport services or other sustainable means of travel. Traffic accounts for the main source of pollutant emissions across Cheshire East, which is primarily responsible for all the AQMAs . As such, links with the Local Transport Plan are fundamental to both the improvement of local air quality and maintenance of air quality, across the borough.

Six indicators have been proposed which involve the monitoring of air pollutants and tracking progress of both concentrations across Cheshire East, as well as the number of wards within Cheshire East which have AQMAs. In addition, assessing new developments for their impact on air quality, as well as improving the public awareness of air quality are included in the indicator set. Using these metrics, the effectiveness of the Strategy can be evaluated throughout the lifetime of the document.

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1 Introduction

1.1 An Air Quality Strategy (AQS) is designed to be a high level document, which is aimed at informing policy and direction across a wide range of council services, to assist in ensuring air quality is considered in all relevant decisions to ensure air quality is improved where possible.

1.2 Local Air Quality Management (LAQM) - Local authorities have a duty under the Environment Act 1995 to review and assess local air quality within their areas against a set of health-based objectives for a number of specific air pollutants. These objectives are based on epidemiological and other evidence relating to their impacts on human health and are included in Appendix 1. An overview of the health effects of the pollutants for which air quality objectives have been included in regulations is set out in Appendix 2. When areas are found where pollutants are either exceeding or close to the objectives, in locations where there is relevant public exposure, local authorities are required to declare an Air Quality Management Area (AQMA) and to prepare an Air Quality Action Plan (AQAP). The purpose of the AQAP is to set out measures the local authority intends to take to reduce concentrations of pollutants in pursuit of the objectives. In addition, local authorities should promote opportunities to reduce pollutants in areas which are not exceeding the objective to ensure air quality is reduced as much as possible across the borough.

1.3 Cheshire East Council (CEC) has fulfilled its obligations to identify any areas where the objectives are exceed or there is a likelihood of exceeding the objectives and the current status of air quality in Cheshire East is summarised in Section 3. The AQMAs declared are all in discrete locations across Cheshire East, which are associated with road traffic emissions. This presents significant challenges in terms of implementing solutions at each of these different locations, rather than implementing a unified plan across one large AQMA. Many of the AQMAs in Cheshire East are single streets, often characterised by either congested traffic conditions or the volume of traffic.

1.4 In addition to the statutory obligations according to LAQM, local authorities are also encouraged by DEFRA to implement local Air Quality Strategies setting out how the Council intends to address air quality across all services and in all relevant decisions. Therefore, it is important this document is aligned with the review of a number of important plans and strategies, such as the Local Transport Plan (LTP), Local Development Strategy (LPS) and the Local Development Framework (LDF).

1.5 The timescale of this Strategy is aligned with the LTP, which is a 15 year strategy and is critical to the implementation of specific actions through the AQAP. The AQAP will be reviewed periodically and a prioritised implementation programme will be incorporated into the LTP.

1.6 Specific consideration has to given to local issues. For example, Cheshire East has an older age profile than the UK as a whole and this is set to continue to increase. Older members of the population are likely to be more susceptible to the health effects of air pollution, and as

such the importance of improving air quality both within the AQMAs and more generally should remain high on the local political agenda.

1.7 Coupled with a more susceptible population, Cheshire East also has higher than average car ownership and an equally high proportion of families with more than one vehicle. This results in the car being the predominant means of commuting, with only a small proportion of residents using public transport to commute to work. However, some of this could be due to the predominantly rural nature of the borough, which means public transport may not be an option for a significant proportion of the residents.

2 Policies

2.1 Policies and programmes for action at all levels of government, can impact on local efforts to improve air quality at specific localised hot spots or reduce concentrations more generally across an area. Some of the relevant policies are discussed below. Figure 2 shows some of the inputs to the Strategy (red boxes), policy areas which should be influenced by the Strategy (blue boxes) and the main outcomes following implementation of the Strategy.

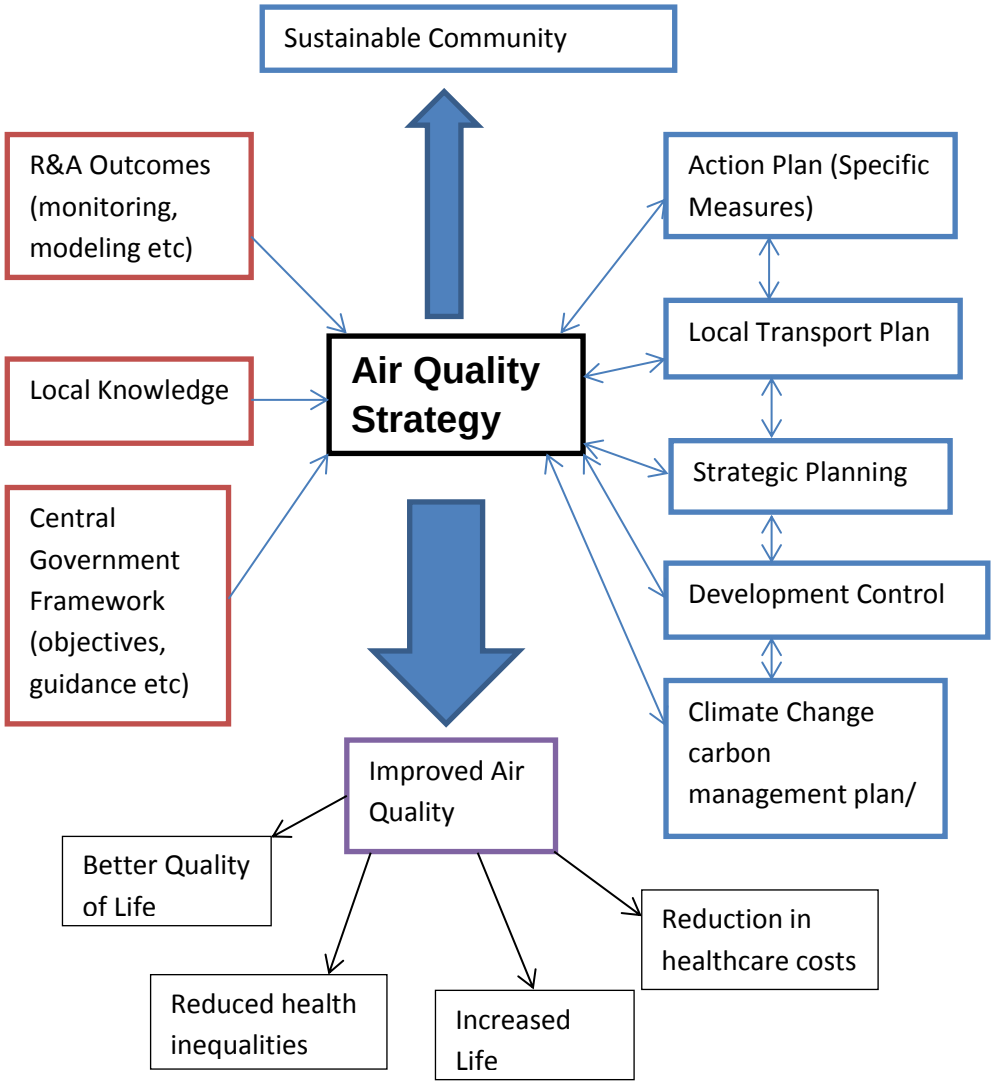

Figure 2: Inputs and outcomes of the Air Quality Strategy

2.2 Central Government Framework – this consists of objectives, legislations, guidance National Planning Framework and policies measures that will improve air quality. These central polices help the local authorities to manage and be responsible for the air quality in their respective areas.

2.3 **Local Develoment Framework (LDF) –** comprising a folder of documents for delivering the spatial planning strategy for the local authority. LDFs will include a Local Development Scheme (LDS), which is a statutory project management plan, setting out the timescales for the preparation and delivery of the LDF which sets out a timetable for Local Development Documents (LDDs). These can either be development plan documents or supplementary planning documents, which reflect national and regional policy, taking into account local needs and variations.

2.4 **The Cheshire East Local Plan (LP)** was adopted on 27 July 2017. It sets out the overall visions and planning strategy for development in the borough and contains planning policies to ensure that new development addresses the economic, environmental and social needs of the area. Some of the strategic priorities of the LP include; "Protecting and enhancing environmental quality of the built and natural environment" and "Reducing the need to travel, managing car use and promoting more sustainable modes of transport and improving the road network". These strategic priorities, aim at reducing the borough,s impact on climate change, promoting renewable energy, addressing local causes of pollution such as air pollution. The LP also addresses sustainable development, planning, transport and travel, travel plans and transport assessment (REF LP).

2.5 **Local Transport Plan (LTP)** - Road traffic is the main cause of air quality in Cheshire East. Transport. Transport accounts for 37 % of the total carbon dioxide (ref ltp) (a greenhouse gas that contributes to climate change) in Cheshire East. Therefore, the LTP provides one of the principal mechanisms for delivering an improvement to air quality across Cheshire East. It is a strategic plan for the development of transport within Cheshire East over the period 2011-2026, outlining how transport will contribute to and support the longer-term aspirations of the borough (REF LTP). Some of the LTP aim include; to minimise congestion and improve the overall efficiency of the highway network, improve accessibility to key services and reduce the need to travel, improve maintenance of the highway and transport network, support active and healthy lifestyles (REF LTP), all of which play a vital role in improving the air quality of Cheshire East.

3 Aims and Objectives of the Air Quality Strategy

3.1 The aim of the AQS is to provide a strategic framework to deliver local air quality improvements within Cheshire East. It can support the achievement of the air quality objectives and raise air quality as an issue for consideration within a wide range of local government and regional frameworks.

3.2 It is important to reduce, where possible, public exposure to certain pollutants as far as possible, even where levels are below the air quality objectives, for example, for fine particulate matter, where there are currently no known safe levels for exposure. By establishing a strategy framework which drives air quality considerations to the heart of Council policies, procedures and decisions. This will ensure Cheshire East is well placed to maintain good air quality and secure future improvements across the borough.

3.3 The objectives of developing and implementing an AQS are to:

- Ensure Cheshire East maintains the best possible air quality conditions across the borough.
- Improve air quality within existing AQMAs, and prevent further deterioration even in those areas where air quality is currently below the objective.
- Promote greater consistency across a range of policy areas for the achievement of improved local air quality, including Spatial Planning, Development Control, Transport Planning, Economic Development, Housing, Environmental Protection and Public Health. This will ensure air quality is addressed in a multi-disciplinary way across the different departments of the Council.
- Provide a link to wider initiatives across the Council, which could have an impact on air quality.
- Raise and maintain the profile of air quality and ensure it remains high on political agendas.
- Highlight, and educate stakeholders about, the link between air quality and the risks to human health as well as to the wider local environment and biodiversity;
- Raise the profile of air quality amongst the local communities across Cheshire East.
- Encourage greater co-operation and collaboration with neighbouring local authorities, local business, industry and residents.
- Provide the first point of contact and source of information relating to local air quality.

4 Air Quality across Cheshire East

4.1 The national Air Quality Strategy provides the policy framework for air quality management and assessment in the UK. It sets out air quality objectives for key air pollutants, which are designed to protect human health and the environment. It also sets out how the different sectors, industry, transport and local government, can contribute to achieving the air quality objectives. Local authorities play an essential role in this context. The national AQS also sets out the Local Air Quality Management function, which requires all local authorities to review and assessment air quality annually. The purpose being to identify those areas in the borough, which are either exceeding or likely to exceed the objectives. If any areas of concern are identified the Council must declare an AQMA and prepare an AQAP, which identifies appropriate measures that will be introduced to reduce the level of pollutants as much as possible.

4.2 Air quality across Cheshire East is generally good, although there are a number of AQMAs across the borough, which have all been declared for levels of nitrogen dioxide which relates to traffic levels and congestion. Details of the various AQMAs can be found on the Council's website which www.cheshireeast.gov.uk .

4.3 As all of the air quality problems relate to traffic volumes and congestion it is vital that the AQS is integrated within the LTP as this will assist many of the action plan measures being implemented.

5 Strategy Commitments

5.1 In order to fulfil the objectives of this Strategy and ensure that air quality improvements are achieved, both in locations which currently exceed the objectives, and more generally across the local authority area, Cheshire East Council has identified the following commitments. These commitments reflect the need to achieve the national air quality objectives, whilst working to improve general air quality conditions throughout the local authority area.

Overall

5.2 Cheshire East Council will engage in all practicable opportunities to improve air quality through the transport and spatial planning processes and through wider policy initiatives, such as climate change and health improvement programmes.

5.3 Cheshire East Council will work with the Government and its agencies to contribute, at a local level, to the delivery of both this strategy and the national Air Quality Strategy. This will primarily be through the Local Air Quality Management regime as set out in this strategy. Through this commitment, the Council will work towards achieving the national air quality objectives and will:

- Strive to ensure that areas currently below the air quality objectives continue to do so and where possible will seek to further improve air quality in these areas;
- Continue to monitor local air quality across the borough

  Produce Annual Status Report published on the air quality website

  make air quality monitoring data available on the air quality website

  review monitoring site to make sure the are relevant to exposure
- Continue to support effective cross-departmental collaboration through the Council's Air Quality Steering Group. The terms of reference for this group are to discuss the wider issues of LAQM, review the AQAP and ensure that air quality is effectively considered within all relevant policy areas. Through more effective cross-departmental collaboration, Cheshire East will strive to ensure that Council actions do not have a detrimental effect on air quality;
- Participate in local and regional networks in order to pursue improved air quality and the consistent implementation of Local Air Quality Management both locally and nationally.
- To regularly review the AQAP to ensure the measures will achieve relevant improvements in air quality;
- Reduce pollutant emissions (including greenhouse gases) from Cheshire East Council's own estates and vehicle fleets.

Spatial Planning and Air Quality

- Ensure that air quality is considered as a material planning consideration within the Development Control process. To assist with this process the Council implement relevant Best Practice Guides and Supplementary Planning Documentation to assist developers in understanding what is expected to ensure air quality is appropriately considered.
- Require a suitable Environmental Impact Assessment is undertaken to accurately assess the impact proposed developments will have on local air quality and guidance on when this will be appropriate will be set out in the supplementary Planning Document and Best Practice Guidance;
- Where deteriorations in air quality are predicted due to any developments suitable mitigation measure will be applied;
- Ensure air quality is properly considered within all relevant planning policy processes;
- Where appropriate developers should contribute to meeting the aims of the various actions set out in the Air Quality Action Plan in a manner proportionate with residual emissions. Examples of this could be through a formula based on proxy criteria such as the size of the development or car parking spaces.

Transport and Air Quality

- Road transportation is the primary source of air pollutant as such appropriate measures must be applied to significantly reduce emissions due to road traffic.
- Ensure that systems are put in place to make sure that vehicles comply with emission standards.
- Ensure that vehicle idling is tackled and managed via antiidling campaigns
- Ensure this strategy is incorporated in to the Local Transport Plan and there is a consistent approach, which reduces the need to travel and reliance on use of private vehicles and more specifically reduce the use of vehicle for short journeys.
- Work with the relevant highways authorities to improve air quality within AQMAs, whilst ensuring air quality does not deteriorate in other areas across the trunk road network.
- When the opportunity arises work with freight operators and organisations to establish appropriate freight routes, delivery routines and driver practices to minimise congestion and pollution.
- Ensure there is a regular exchange of information between transport planners and air quality professionals, relating to air quality information, traffic information and any proposed new roads.

- Support work to reduce emissions from the Council's vehicle fleet including any contractors.
- Promote opportunities for active travel (i.e. walking and cycling).

Climate Change and Energy Management

- Work to support climate change initiatives ongoing in Cheshire East.
- Prioritise climate change initiatives and actions, which are mutually beneficial to air quality
- Support the promotion of energy efficiency measures across the borough including the Council's estate.

Health and Education

- Increase public understanding of air quality and its health effect.
- Working with Public Health to inveatigate links between poor air quality (i.e. in AQMAs) and health as such developing Cheshire East Health Impact Assessment.
- Keep the public informed of work relating to Local Air Quality Management, primarily through the Council's website and any other suitable media
- Encourage the local community to become involved in improving air quality and take actions to reduce their contributions to local air quality and carbon dioxide emissions.
- Using interactive packages to work with schools to raise awareness.

Commercial and Domestic Sources

- Work closely with the Environment Agency where any 'Part A1' installation is likely to detrimentally affect air quality.
- Ensure all 'Part A2' installations, which are regulated by the Council are compliant with the conditions of their Permit.
- Provide advice on the control of air polluting emissions ensure that all relevant legislation is enforced for the control of emissions from industrial sources.

Monitoring the Effectiveness of this Strategy

- Robustly monitor the progress of the Council's actions in implementing this Strategy;
- Review the AQS as and when required.

6 Monitoring the Success of the Strategy

6.1 The effectiveness of this Strategy will be monitored periodically to ensure the aims and objectives are being progressed. Indicators can be used to monitor the effectiveness of a strategy, and these should be clear and transparent.

6.2 Actions to improve air quality need to be implemented by a range of internal and external stakeholders. Communication and collaboration is the key to ensuring measures arising from this Strategy are implemented. To assist with this input from the stakeholders identified in this report will be required to ensure implementation of this Strategy remains an active and on-going process. Specific actions will be implemented through the Air Quality Action Plan, which in itself will be aligned with the LTP Delivery Plans. Any actions implemented will undergo further scrutiny in terms of cost effectiveness analysis and evaluation of their impact on other policy areas, which is required as part of the action planning process.

6.3 There are a number of possible indicators to use in monitoring the effectiveness of the Strategy, which will provide direct evidence for improving air quality, both within and outside of AQMAs. In addition, other policy actions, such as assessing the impacts of new developments (roads, residential, commercial, industrial etc.) and increasing public awareness have been included.

Air Quality Monitoring

6.4 Cheshire East has a network of nitrogen dioxide monitoring sites, which will be used to directly report on trends in air pollution concentrations. This measure will provide a long term indication of overall air quality across Cheshire East and will help to identify areas which maybe exceeding the objectives

Future AQMAs declared

6.5 An indicator of the number of AQMAs is also included in the strategy. This will keep track not only of improvements in areas where issues have been identified, but will also track any deteriorations in areas where air quality is currently acceptable.

Assessing New developments

6.6 In order to ensure that new developments do not cause significant worsening of air quality, there is an indicator to ensure all relevant new developments (roads, residential, commercial, industrial etc.) have an air quality impact assessment submitted as part of the planning application stage.

Raising public awareness

6.7 Public awareness is important to ensuring individuals and businesses have the relevant information to be able to make informed decisions regarding the impact of their actions on air

quality. As such, air quality will be promoted to schools, resident groups, Town/Parish Council through awareness days and attending meetings to ensure the right information is made available.

Table 5.1. Indicators for inclusion in the Strategy.

	Description	**Monitoring Frequency**	**Target**
1	Monitoring air quality	Annually within R&A process	Achievement of the UK air quality objectives
2	Number of AQMAs	Annually	Reduction of AQMAs
3	Assessment of Road Schemes	Annually	Undertake air quality assessments for 100% of relevant road schemes
4	Assessment of planning applications	Annually	100% of relevant planning applications accompanied by Environmental Impact Assessments covering air quality
5	Assessment of industrial processes	Annually	100% of Applications for Permits in accordance with the Pollution Prevention & Control Act 1999 and Environmental Permitting (England and Wales) Regulations 2010 are assessed for Air Quality implications
6	Promotion of Air Quality Issues to schools and other relevant groups	Annually	Attend five school education / residents group/ Town or Parish Council meetings

7 Conclusions

7.1 The continual development of this Strategy for Cheshire East signifies recognition that improving local air quality is the responsibility of a wide range of stakeholders and professions. Although Environmental Protection professionals are tasked with the monitoring and assessment of air quality, the actions and measures necessary to improve air quality remains with a wider range of professionals and stakeholders. These actions will be coordinated and prioritised by Environmental Protection professionals who are also tasked with reporting on the effects of the implemented measures to the Government.

7.2 Although future improvements in local air quality are predicted as a result of technological advances in vehicle engines and improved fuels, there is currently some doubt as to their efficacy. Therefore, there is still a need to reduce the increasing reliance on private motor vehicle use and to provide access to improved public transport services or other sustainable means of travel. Traffic accounts for the main source of pollutant emissions across Cheshire East and is responsible for all the AQMAs declared. As such, the links with the Council's LTP is fundamental to improving air quality across the borough.

7.3 Through the implementation of this strategy, emissions of pollutants across borough should reduce, resulting in improvements in air quality, which will give rise to a number of benefits including improvements in the health of the population, improvements to the environment and reduced healthcare costs.

8 Glossary

AQAP	Air Quality Action Plan
AQMA	Air Quality Management Area
AQS	Air Quality Strategy
CEC	Cheshire East Council
CO_2	Carbon dioxide
LDF	Local Development Framework
LTP	Local Transport Plan
NO_2	Nitrogen dioxide
NOx	Nitrogen oxides
PM_{10}	Particulate Matter of less than 10 µm in diameter

Appendix 1 Air Quality Objectives

A1.1 The table below presents the air quality objectives relevant for Local Air Quality Management.

Table A1.1 Air Quality Objectives included in Regulations for the purpose of Local Air Quality Management in England

Pollutant	Air Quality Objective		Date to be achieved by
	Concentration	Measured as	
Benzene	16.25 $\mu g/m^3$	Running annual mean	31.12.2003
	5.00 $\mu g/m^3$	Running annual mean	31.12.2010
1,3-Butadiene	2.25 $\mu g/m^3$	Running annual mean	31.12.2003
Carbon monoxide	10.0 mg/m^3	Running 8-hour mean	31.12.2003
Lead	0.5 $\mu g/m^3$	Annual mean	31.12.2004
	0.25 $\mu g/m^3$	Annual mean	31.12.2008
Nitrogen dioxide	200 $\mu g/m^3$ not to be exceeded more than 18 times a year	1-hour mean	31.12.2005
	40 $\mu g/m^3$	Annual mean	31.12.2005
Particles (PM_{10}) (gravimetric)	50 $\mu g/m^3$, not to be exceeded more than 35 times a year	24-hour mean	31.12.2004
	40 $\mu g/m^3$	Annual mean	31.12.2004
Sulphur dioxide	350 $\mu g/m^3$, not to be exceeded more than 24 times a year	1-hour mean	31.12.2004
	125 $\mu g/m^3$, not to be exceeded more than 3 times a year	24-hour mean	31.12.2004
	266 $\mu g/m^3$, not to be exceeded more than 35 times a year	15-minute mean	31.12.2005

Appendix 2 Health Effects of Air Pollutants

A2.1 The table below summarises the main health and some environmental impacts of high concentrations of the national Air Quality Strategy pollutants.

Specific pollutant	**Potential effect on health and the environment**
Particulate Matter (PM_{10} and $PM_{2.5}$)	Both short-term and long-term exposure to ambient levels of PM are consistently associated with respiratory and cardiovascular illness and mortality as well as other ill-health effects. The associations are believed to be causal. It is not currently possible to discern a threshold concentration below which there are no effects on the whole population's health. PM_{10} refers to the mass in micrograms per cubic metre of particles with a diameter equal to or less than 10 micrometres, that are likely to be inhaled into the thoracic region of the respiratory tract. Recent reviews by the World Health Organisation (WHO) and Committee on the Medical Effects of Air Pollutants (COMEAP) have suggested exposure to a fine particles ($PM_{2.5}$), which typically make up around two thirds of PM_{10} emissions and concentrations) give a stronger association with the observed ill-health effects, but also warn that there is evidence that the coarse fraction between (PM_{10}-$PM_{2.5}$) also has some effects on health.
Nitrogen oxides (NO_x including NO_2)	Nitrogen dioxide (NO_2) is associated with adverse effects on human health. At high levels, NO_2 causes inflammation of the airways. Long-term exposure may affect lung function and respiratory symptoms. NO_2 also enhances the response to allergens in sensitive individuals. High levels of NO_X can have an adverse effect on vegetation, including leaf or needle damage and reduced growth. Deposition of pollutants derived from NO_X emissions contribute to acidification and/or eutrophication of sensitive habitats leading to loss of biodiversity, often at locations far removed from the original emissions. NO_X also contributes to the formation of secondary particles and ground level ozone, both of which are associated with ill-health effects.
Sulphur dioxide (SO_2)	Causes constriction of the airways of the lung. This effect is particularly likely to occur in people suffering from asthma and chronic lung disease. Precursor to secondary PM and therefore contributes to the ill-health effects caused by PM_{10} and $PM_{2.5}$. Potential damage to ecosystems at high levels, including degradation of chlorophyll, reduced photosynthesis, raised respiration rates and changes in protein metabolism. Deposition of pollution derived from SO_2 emissions contribute to acidification of soils and waters and subsequent loss of biodiversity, often at locations far removed from the original emission.
Benzene	Benzene is a recognised human carcinogen which attacks the genetic material and, as such, no absolutely safe level can be specified in ambient air. Studies in workers exposed to high levels have shown an excessive risk of leukaemia.
1,3-butadiene	1,3-butadiene is also a recognised genotoxic human carcinogen, as such, no absolutely safe level can be specified in ambient air. The health effect of most concern is the induction of cancer of the lymphoid system and blood–forming tissues, lymphoma and leukaemia.
Lead (Pb)	Exposure to high levels in air may result in toxic biochemical effects which have adverse effects on the kidneys, gastrointestinal tract, the joints and reproductive systems, and acute or, chronic damage to the nervous system. Affects intellectual development in young children.

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