Air Quality
Supplementary Planning Document

Coventry City Council

December 2018

This document is designed to support measures to mitigate against and improve air quality impacts on new developments.

This guidance has been developed in co-operation between Coventry City Council, Coventry & Warwickshire Public Health, Nuneaton and Bedworth Borough Council, Rugby Borough Council, Stratford District Council and Warwick District Council.

Contents

Glossary

AADT	Annual average daily traffic flows
Air Quality Assessment (AQA)	An assessment of the impact of a development on the levels of certain pollutants in the local area and the impact of pollution levels on future occupants.
Air Quality Management Areas (AQMAs)	Areas where the air quality objectives are likely to be exceeded. Declared by way of an order issued under the Section 83(1) of the Environment Act 1995.
Air Quality Objectives	Air quality targets to be achieved locally as set out in the Air Quality Regulations 2000 and subsequent Regulations. Objectives are expressed as pollution concentrations over certain exposure periods, which should be achieved by a specific target date. Some objectives are based on long term exposure (e.g. annual averages), with some based on short term objectives. Objectives only apply where a member of the public may be exposed to pollution over the relevant averaging time.
Clean Air Zones (CAZ)	Zone implemented by a local authority setting nationally set emission standards for vehicles. Non-charging zones can be implemented through policies covering bus and taxi emissions. Charging zones require non-compliant lorries and possibly vans to pay a charge to enter the zone.
Damage costs	Damage costs are a simple way to value changes in air pollution. They estimate the cost to society of a change in emissions of different pollutants
Environmental Impact Assessment (EIA)	Assessment required for projects specified in Environmental Impact Assessment Directive. Governed by the Town & Country Planning (Environmental Impact Assessment) Regulations 2017
EU Limit Value	Legally binding pollutant concentration limit on Governments of EU Countries
Euro Standards	European Emission Standard (progressively tightened emission standards for vehicles. Euro Standards for cars and small vans are stated in Hindu-Arabic numbers and HDVs in Roman numerals)
Exceedence	Concentrations of a specified air pollutant greater than the appropriate Air Quality Objective.
HDV	Heavy duty vehicle (lorry or bus greater than 3.5 tonnes gross vehicle weight)

LAQM.TG(16)	Local Air Quality Management Technical Guidance (2016). This document provides national advice on how local authorities should assess air quality.
LETCP	Low Emission Towns & Cities Programme[1] – joint programme between all 7 West Midlands Metropolitan Authorities to produce the West Midlands Low Emission Vehicle Strategy (LEVS), including good practice guidance on planning and procurement
Low Emission Strategy (LES)	Overarching strategy to integrate policies and practices to achieve year on year vehicle emission reductions, optimising opportunities for national funding assistance
Low Emission Zone (LEZ)	Council area in which emission standards apply for either road transport vehicles or power generation/industrial emissions. The council can set emission standards that differ in standard and scope from the Government requirements for implementing Clean Air Zones for vehicles
LDV	Light duty vehicle (car or small van less than 3.5 tonnes gross vehicle weight
Limit Values/EU limit values	The maximum pollutant levels set out in the EU Daughter Directives on Air Quality. In some cases the limit values are the same as the national air quality objective, but may allow a longer period for achieving.
Mitigation	Mitigation measures will minimise, but not necessarily remove, the impact of or effect of poor air quality on a development
National Air Quality Objectives	See Air Quality Objectives
National Air Quality Plan	Government Plan to improve roadside concentrations of nitrogen dioxide (July 2017)
Non-road mobile machinery (NRMM)	Diggers, cranes, bulldozers, plant etc used on construction sites
NO_2	Nitrogen dioxide
NOx	NOx = nitrogen oxides, which includes nitric oxide and nitrogen dioxide. Most pollution sources emit nitrogen oxides primarily as nitric oxide. However, once in the atmosphere nitric oxide can be converted to nitrogen dioxide. Therefore, it is important to know the concentrations of both NOx and NO_2
Offsetting	Measures which 'compensate' for anticipated increases in pollution in the area but not necessarily at the exact locality. This might be for example by funding more general measures in the air quality action plan.
PM	Particulate matter

[1] https://go.walsall.gov.uk/low_emissions_towns_and_cities_programme

PM2.5	Particulate matter with a diameter of 2.5 microns or less
PM_{10}	Particulate matter with a diameter of 10 microns or less.
Part A1 and A2 Processes	Industrial processes which are regulated under the Pollution Prevention and Control (PPC) Regulations and subsequent Integrated Pollution Prevention and Control (IPPC) for emissions to all media (i.e. atmosphere, land and water).
Part B Processes	Industrial processes which are regulated under the Local Air Pollution Control (LAPC) and Local Air Quality Pollution Prevention and Control (LAPPC) Regulations for emissions to air only.
Point sources	Chimneys
Polluting development	A development which will directly or indirectly increase levels of relevant pollutants. This may include industrial processes but my also include developments which could cause increased traffic emissions.
Sensitive development	A development which would allow users of the site to potentially be exposed to pollutants above the objective for the relevant period. For example, the introduction of a new residential development into an area where an air quality objective is already exceeded, would create the potential for the exposure of residents to poor air quality above the objective. Incidentally, this type of development may also generate significant additional traffic flow and also be a polluting development.

1 Purpose of the guidance

Coventry City Council has to weigh up economic, social and environmental factors when deciding to grant or refuse planning permission or decide if conditions are required to make a development acceptable and sustainable.

Air quality is a material consideration that planners are required to take into account when making their plans and when taking planning decisions.

This guidance aims to simplify the consideration of air quality impacts associated with development schemes and focus on incorporation of mitigation at design stage, countering the cumulative impacts of aggregated developments, providing clarity to developers and defining of *sustainability* in air quality terms. In doing so the Supplementary Planning Document (SPD) provides technical guidance and support to Policy EM7 of the city's Local Plan (2016).

The objectives of this SPD are to:

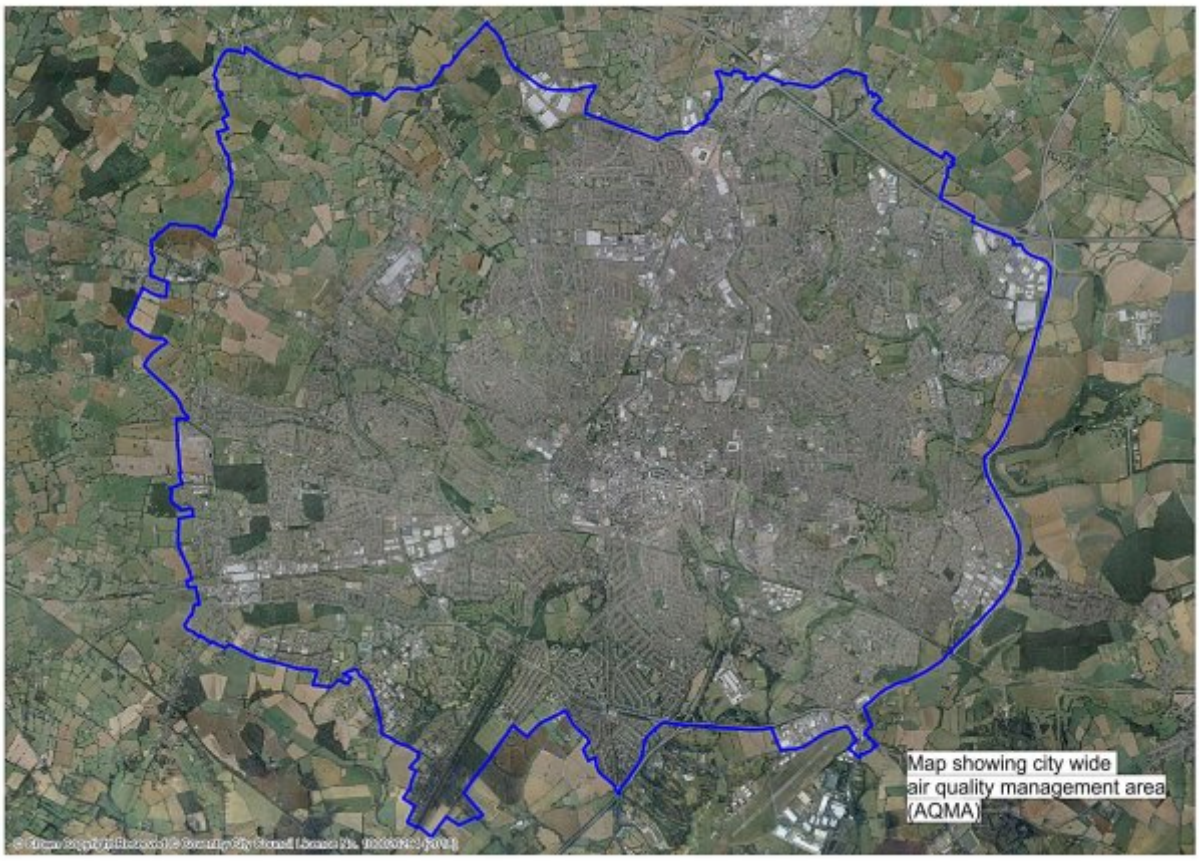
- Improve the consideration of air quality & health impacts in the planning process, in line with national / local policy and practice;
- Help ensure consistency in the approach to dealing with air quality and planning across Coventry;
- Highlight the existing policy framework in Coventry, and emphasise the importance of air quality as a material planning consideration;
- Identify the circumstances where detailed assessments and/or low emission strategies will be required as part of planning applications;
- Provide guidance on measures that can be implemented to mitigate the potentially harmful impacts of new developments on air quality;
- Promote the identification of suitable mitigation on major schemes through pre-application discussions;
- Provide guidance on the use of planning conditions and Section 106 obligations to improve air quality; and
- Encourage co-benefits of reducing Carbon and noise emissions.

2 Local Air Quality

Coventry City Council designated the City area as an air quality management area (AQMA) from 1st November 2009 due to elevated, yearly levels of nitrogen dioxide (NO2).

Map 1 shows the extent of the Coventry AQMA, which reflects the cities administrative boundary.

Map 1 – Coventry City Council Air Quality Management Area (AQMA)



While levels of particulate matter (PM_{10}) in Coventry do not breach Air Quality Objectives it is acknowledged that fine particulate matter ($PM_{2.5}$) levels have a significant impact on health across the City. Around 1 in 20 deaths in Coventry can be attributed to $PM_{2.5}$ concentrations accounting for 168 deaths (over 25s) and 1882 associated life-years lost in 2010[2].

[2] https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/332854/PHE_CRCE_010.pdf

For the purpose of improving air quality and health impacts in Coventry this draft SPD is concerned with achieving and maintaining compliance with the National Air Quality Objectives and with improving air quality further, particularly with respect to particulate concentrations.

3 National Policy & Practice

3.1 National Planning Policy Framework

National planning policy is set by the National Planning Policy Framework (NPPF)[3][4]. The NPPF places a general presumption in favour of sustainable development. Air quality is a material consideration in the planning process, in line with the following paragraphs of the NPPF:

170. Planning policies and decisions should contribute to and enhance the natural and local environment by:

e) preventing new and existing development from contributing to, being put at unacceptable risk from, or being adversely affected by, unacceptable levels of soil, air, water or noise pollution or land instability. Development should, wherever possible, help to improve local environmental conditions such as air and water quality, taking into account relevant information such as river basin management plans;

181. Planning policies and decisions should sustain and contribute towards compliance with relevant limit values or national objectives for pollutants, taking into account the presence of Air Quality Management Areas and Clean Air Zones, and the cumulative impacts from individual sites in local areas. Opportunities to improve air quality or mitigate impacts should be identified, such as through traffic and travel management, and green infrastructure provision and enhancement. So far as possible these opportunities should be considered at the plan-making stage, to ensure a strategic approach and limit the need for issues to be reconsidered when determining individual applications. Planning decisions should ensure that any new development in Air Quality Management Areas and Clean Air Zones is consistent with the local air quality action plan.

183. The focus of planning policies and decisions should be on whether proposed development is an acceptable use of land, rather than the control of processes or emissions (where these are subject to separate pollution control

3 https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/740441/National_Planning_Policy_Framework_web_accessible_version.pdf

4

regimes). Planning decisions should assume that these regimes will operate effectively. Equally, where a planning decision has been made on a particular development, the planning issues should not be revisited through the permitting regimes operated by pollution control authorities.

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3.2 National Planning Practice Guidance

National Planning Practice Guidance (NPPG)[6] provides advice to planning authorities on implementing the NPPF, including guidance on how air quality can be considered as part of the planning process.

The NPPG states that "mitigation options where necessary will be locationally specific, will depend on the proposed development and should be proportionate to the likely impact. It is important therefore that local planning authorities work with applicants to consider appropriate mitigation so as to ensure the new development is appropriate for its location and unacceptable risks are prevented. Planning conditions and obligations can be used to secure mitigation where the relevant tests are met.
Examples of mitigation include:

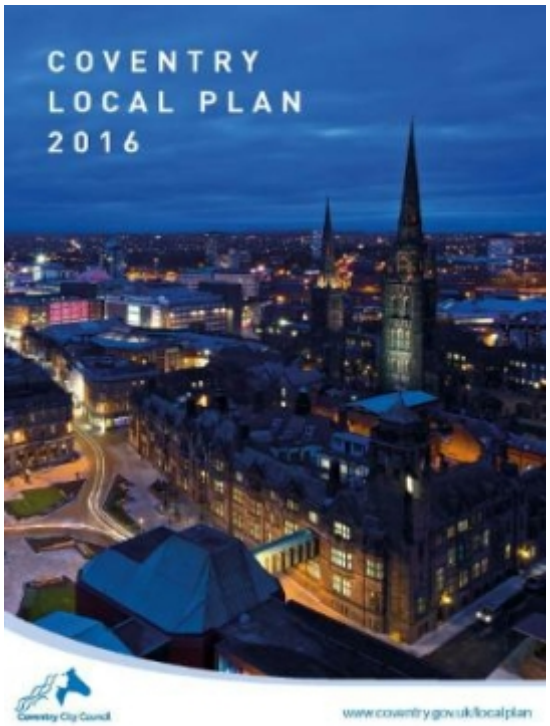
- the design and layout of development to increase separation distances from sources of air pollution;
- using green infrastructure, in particular trees, to absorb dust and other pollutants;
- means of ventilation;
- promoting infrastructure to promote modes of transport with low impact on air quality;
- controlling dust and emissions from construction, operation and demolition; and
- contributing funding to measures, including those identified in air quality action plans and low emission strategies, designed to offset the impact on air quality arising from new development.

The NPPG states that where a planning proposal, including mitigation, prevents sustained compliance with EU Limit Values or National Objectives for air quality and cannot be made acceptable then refusal of planning permission should be considered.

[6] https://www.gov.uk/government/collections/planning-practice-guidance

4 Local Plan

The Planning and Compulsory Purchase Act 2004, amended by the Localism Act 2011 requires planning authorities to prepare Local Plans. The Coventry City Council Local Plan[7] was adopted on the 6th December 2017.



The Local Plan includes the following Policy on Air Quality (EM7):

1. *Major development schemes should promote a shift to the use of sustainable low emission transport (electric vehicles and vehicles that use biofuels) to minimise the impact of vehicle emissions on air quality. Development will be located where it is accessible to support the use of public transport, walking and cycling. All major development proposals should be suitably planned to design out any adverse impact on air quality.*

2. *Major Development proposals will require the submission of an air quality assessment, as they may lead to a significant deterioration in local air quality resulting in unacceptable effects on human health, local amenity or the natural environment. The air quality assessment should address: a) The existing background levels of air quality; b) The cumulative background levels of air quality (related to the cumulative impact of developments in an area); c) The feasibility of any measures of mitigation that would prevent the national air quality objectives being exceeded or would reduce the extent of the air quality deterioration.*

3. *A Supplementary Planning Document will be developed to support this Policy.*

Policy EM7 is supported by the following text:

> To support the improvement in the city's air quality, Policy EM7 should be applied in conjunction with the Low Emission Vehicle Strategy and Good Practice Guidance on Planning for the West Midlands (2014) developed by the Low Emissions Towns and Cities Programme (LETCP). All major developments will therefore be required to undertake full air quality assessments. Where appropriate exposure assessments will also apply to smaller developments in accordance with this guidance.
>
> Detailed methodology for full air quality and exposure assessments should be agreed with the Council. Mitigation and compensation measures ensuring that all developments are sustainable from an air quality perspective should be submitted with all proposals. Where appropriate, such measures may be secured through a legal agreement. Recommended measures for all types of developments can be found in the LETCP Air Quality Planning Guidance.

This SPD updates the LETCP Good Practice Guidance on Planning. For the avoidance of doubt, scheme classifications, including minor, medium and major shall be in line with section 5.1 of this guidance.

This SPD should be read in conjunction with other Council SPD and wider policies including:

- Health Impact Assessment SPD[8]
- Coventry Connected SPD (including Car and Cycle Parking Standards)[9]
- Community Infrastructure Levy (CIL)[10]
- Developer Contributions SPD
- Local Cycling and Walking Infrastructure Plans[11]
- Hot Food Takeaway (Draft) SPD[12]

5 Development Classification, Assessment and Mitigation

The assessment of air quality for relevant planning applications should follow a three-stage process:

1. Determining the classification of the development proposal;

[8] http://www.coventry.gov.uk/downloads/file/26333/draft_heath_impact_assessments_spd
[9] http://www.coventry.gov.uk/downloads/file/26331/draft_coventry_connected_spd
[10] http://www.coventry.gov.uk/cil
[11] https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/607016/cycling-walking-infrastructure-technical-guidance.pdf
[12] http://www.coventry.gov.uk/downloads/file/27658/hot_food_takeaway_draft_spd

2. Assessing and quantifying the impact on local air quality; and
3. Determining the level of a mitigation required by the proposal to make the scheme acceptable.

5.1 Stage 1 - Development Type Classification

The classification of developments is shown in tables 1 and 2 (below). The assessment and mitigation of development proposals is shown in figure 1 (below in section 5.2).

Table 1 – Air quality classification of developments

Scheme Type	Minor	Medium	Major
Threshold	Below threshold criteria for a Transport Assessment or Travel Plan	Meets threshold criteria for a Transport Assessment or Travel Plan .	Medium type developments which also trigger any of the following criteria: i) Where development is within or adjacent[13] to an AQMA or CAZ ii) Where development requires an EIA[14] and air quality is to be considered iii) Where any of the criteria in table 2 are triggered
Assessment	None (other than for exposure)	None (other than for exposure)	Air Quality Assessment[15] required including an evaluation of changes in emissions[16]
Mitigation	Type 1	Types 1 and 2	Types 1,2 and 3

The threshold criteria for Transport Assessments (TA) can be found in **Table 4.2 of the Councils Coventry Connected SPD**[17].

At present, all of the Coventry City Council area is designated as an AQMA, therefore, all medium classified developments will be classified as major.

Table 2 – Additional Trigger Criteria for Major Developments

[13] Where development has potential to impact on concentrations in AQMA or CAZ
[14] https://www.gov.uk/guidance/environmental-impact-assessment
[15] Air Quality Assessment Protocol can be found in Appendix 1
[16] Assessment includes monetisation of the impacts arising from emission changes in line with Defra IGCB Damage Costs
[17] http://www.coventry.gov.uk/info/111/planning_policy/2310/local_plan/5

- Proposals in areas where sustained compliance with EU Limit Values may be at risk[18]
- Any development proposing a net increase of 100 or more parking spaces
- Any development that could increase the existing traffic flows on roads of > 10,000 AADT by 5% or more
- Any development that causes a change in LDV (cars and small vans) flows of:
  - more than 100 AADT within or adjacent to an AQMA, CAZ or exceedance area
  - more than 500 AADT elsewhere
- Any developments that could increase traffic flows by 5% or more in road canyons[19] (or creates a canyon) with > 5,000 AADT
- Any development that causes a change in HDV flows (lorries, large vans and buses) of:
  - more than 25 AADT within or adjacent to an AQMA, CAZ or exceedance area
  - more than 100 AADT elsewhere
- Proposals that could introduce or significantly alter congestion (DfT Congestion) and includes the introduction of substantial road infrastructure changes
- Proposals that reduce average speeds by more than 10 km per hour
- Proposals that include additional HGV movements by more than 10% of total trips
- The construction, widening or repositioning of a road in the vicinity of sensitive receptors[20]
- Where significant demolition and construction works are proposed[21]
- Where a centralised combustion unit of thermal input >300kWh is proposed
- All biomass boiler applications
- All stand-by/short-term power generation units regulated by the Environment Agency

5.2 Stage 2 - Air Quality Impact Assessment

MINOR and MEDIUM Classified Proposals

Smaller development proposals may not in themselves create an additional air quality problem but may introduce more people that are likely to be exposed to existing levels of poor air quality. An assessment of the likelihood of introducing additional exposure will be determined using the following criteria:

- The proposal is adjacent to or within an AQMA;

[18] Where current monitoring data shows NO2 annual average concentrations of 36 ug/m3 or more
[19] Where the height of buildings adjacent to either side of the road are higher than the width between them. Local knowledge and professional judgement will be required to help identify road canyons
[20] See section 5.2
[21] Significance determined by professional judgement based on scale of works and proximity of sensitive receptors

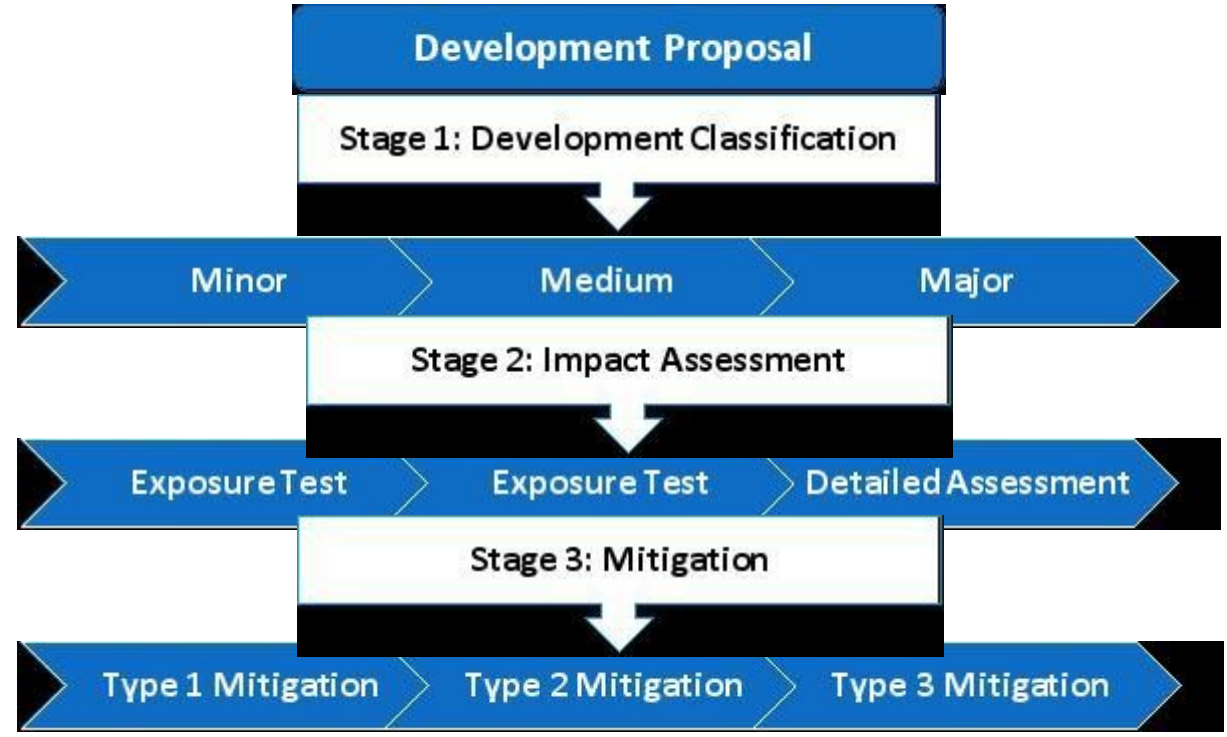
- The proposal is in a location 20m from roads at or above the relevant national objective highlighted on the DEFRA GIS modelled maps - http://uk-air.defra.gov.uk/data/gis-mapping
- The proposal is one of the Land Use types:
  - C1 to C3;
  - C4 (Homes of Multiple Occupation);
  - D1; and
  - Within 20m of roads with >10,000 AADT

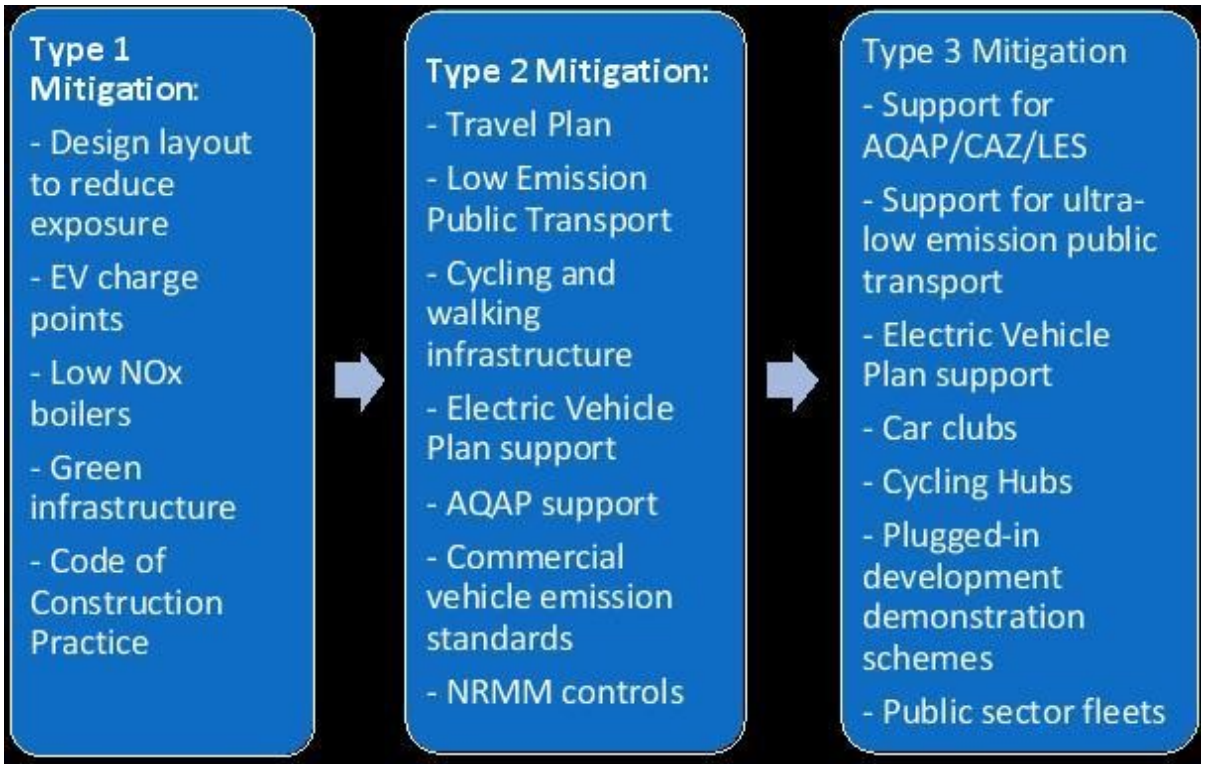
Air Quality Monitoring

Where it is unclear whether levels of NO2 may pose an unacceptable exposure risk to the inhabitants of proposed dwellings, it may be appropriate to undertake a period of monitoring at the site as part of the air quality assessment. The requirements of such programmes are to be agreed with the Environmental Protection Team prior to monitoring taking place (see appendix 1).

The outcome of the exposure assessment will determine the level of mitigation required to make the development acceptable. Should there be no acceptable mitigation the recommendation may be to consider refusing the proposal on air quality grounds.

Figure 1 – Classification, assessment & mitigation of new developments





MAJOR Classified Proposals

It is important that all major schemes should identify suitable assessment requirements and potential mitigation through pre-application discussions. The scale and nature of this type of proposal is such that a detailed air quality assessment will be required to determine the impact on public health and the local environment. The assessment requires:

- The identification of the level of exposure through the change in pollutant concentrations including cumulative impacts arising from the proposal, during both demolition/construction operations and operational phases. Mitigation measures should be identified and modelled where practicable.
- The calculation of pollutant emissions costs from the development.

A. The methodology to be used for the determination of pollutant concentration change should meet the requirements of the Department for the Environment, Food and Rural Affairs (DEFRA) Technical Guidance Note LAQM TG. (16)[22]. Further details of the air quality assessment requirements can be found in **appendix 1** and through the Council's Environmental Protection team.

All Air Quality Assessments received will be assessed by Coventry City Council against the requirements of this Technical Guidance Note. If the requirements are not met, Coventry City Council may request that the applicant carries out the assessment again, if the assessment does not meet the required standards, the application may be refused.

B. The pollutant emissions costs calculation will identify the damage costs associated with the proposal and will assist the Council in assessing the overall impacts on air quality arising from major developments. We **may** use the damage costs in considering the appropriate scale and kind of mitigation that is required to make certain major schemes acceptable in terms of air quality. The overall benefit of the scheme will be taken into account in making the site acceptable. The calculation should utilise the most recent DEFRA Emissions Factor Toolkit[23] to estimate the additional pollutant emissions from a proposed development and the latest DEFRA IGCB Air Quality Damage Costs for the specific pollutant of interest, to calculate the resultant damage cost[24]. The calculation process includes:

- Identifying the additional trips generated by the proposal (from the Transport Assessment);
- The emissions calculated for the pollutants of concern (NOx and PM10) [from the Emissions Factor Toolkit];
- The air quality damage costs calculation for the specific pollutant emissions (from DEFRA IGCB);
- The result is totalled for a five-year period to enable mitigation implementation.

The calculation is summarised as follows:

Road Transport Emission Increase =
Σ[Estimated trip increase for 5 years X Emission rate per 10 km per vehicle type X Damage Costs]

[22] https://laqm.defra.gov.uk/technical-guidance/
[23] https://laqm.defra.gov.uk/review-and-assessment/tools/emissions-factors-toolkit.html
[24] https://www.gov.uk/guidance/air-quality-economic-analysis

Further information can be obtained from the Council's Environmental Protection team. **Should there be no net increase in trips arising from a development scheme then the damage costs are zero.** Further information on damage costs can be found in **appendix 2**.

5.3 Stage 3 - Mitigation

Where mitigation is not integrated into a proposal, we will require this through planning conditions. The NPPF (paragraph 152) states that "where adequate mitigation measures are not possible, compensatory measures may be appropriate". If on-site mitigation is not possible then Coventry City Council will seek compensation for the identified air quality impacts through a section 106 agreement or similar agreement.

Default mitigation measures are presented for each type of proposal that demonstrate a minimum requirement. This is not an exhaustive list but a suggested suite of measures and will be adapted for particular locations and needs identified by the Council. We welcome the opportunity to work with developers to devise innovative measures that will lead to improving local air quality.

Type 1 mitigation is listed in table 3 and Types 2 and 3 are listed in tables 4 and 5 respectively.

Due to elevated concentrations of particulate matter in the district, Medium and Major developments will be required to implement suitable abatement controls for the use of non-road mobile machinery (NRMM) – see table 6.

Type 1 Mitigation

Table 3 – Type 1 Mitigation
Plug-in Vehicle Re-Charging: ***Residential:*** 1 charging point per dwelling with dedicated parking (16amp) or 1 charging point per 10 spaces (unallocated parking) and ensure appropriate cabling is provided to enable increase in future provision. ***Commercial/Retail:*** 10% of parking spaces (32 amp) which may be phased with 5% initial provision and the remainder at an agreed trigger level. At least 1 charging unit should be provided for every 10 disabled parking spaces. Where 50 parking spaces or more are provided then 1 rapid charging unit (43kW/50kW) per 50 spaces shall also be considered and parking time limited to a maximum of 1 hour for public access car parks. ***Industrial:*** 10% of parking spaces which may be phased with 5% initial provision and the remainder at an agreed trigger level. At least 1 charging unit should be provided for every 10 disabled parking spaces. Where 50 parking spaces or more are provided then 1 rapid charging unit (43kW/50kW) per 50 spaces shall also be considered.

All charging units shall be installed where practical. Developers installing public charging points shall ensure that the National Charge Point Registry is updated.

For further information on EV charging points contact the Environmental Protection Team

Low NOx heating and boilers (see section 5.5)

Code of Construction Practice
Construction Environmental Management Plan (CEMP) to be incorporated into MEDIUM and MAJOR developments and agreed with Council Officers. This shall include NRMM controls (see table 6).

Green Infrastructure
Where it can be shown that such infrastructure will reduce exposure from air pollution.

Type 2 Mitigation

The following tables provide a suite of measures to be considered where appropriate.

Table 4 – Type 2 Mitigation

- Monitored Travel Plan[25].
- Measures to support public transport infrastructure and promote use.
- Measures to support cycling and walking infrastructure.
- Measures to support an Electric Vehicle Plan.
- Designated parking spaces and differentiated parking charges for low emission vehicles.
- Non-road mobile machinery (NRMM) controls (see table 6).
- Measures provided in the Air Quality Action Plan (AQAP)

Commercial development specific:

- Use reasonable endeavours to use/require vehicle use complying with the latest European Emission Standard.
- Provide a fleet emission reduction strategy/Low Emission Strategy, including low emission fuels and technologies, including ultra-low emission service vehicles.

Type 3 Mitigation

Table 5 – Type 3 Mitigation

Off-set mitigation to support:

- Implementation and operation of Clean Air Zones (CAZ), Low Emission Zones (LEZ) or Low Emission Strategies (LES).

[25] Where the developer funds the monitoring of a travel plan

- Implementation of measures in the AQAP
- Growth in low and ultra-low emission public transport, including buses.
- Electric Vehicle Plans.
- Car clubs (including electric) and car sharing schemes.
- Cycling Hubs and corridors, including bike and e-bike hire.
- Plugged-in development and demonstration schemes e.g. new occupants given demonstration use of plug-in vehicles.
- Low emission waste collection services.
- Infrastructure for low emission, alternative fuels e.g. refuse collection and community transport services.

Further information on the suitability of mitigation for developments can be obtained from the Council's Environmental Protection Team and through pre-application discussions.

Table 6 – Non-Road Mobile Machinery (NRMM) Controls

NRMM of net power between 37kW and 560kW will be required to meet the standards based upon the engine emissions standards in EU Directive 97/68/EC and its subsequent amendments. This will apply to both variable and constant speed engines for both NOx and PM. These standards are:
(a) NRMM used on the site of any MEDIUM classified development in the AQMA will be required to meet Stage IIIA of the Directive as a minimum.
(b) NRMM used on any MAJOR classified development in the AQMA will be required to meet Stage IIIB of the Directive as a minimum.

From 1 September 2020 the following changes will apply:

- (a) NRMM used on any construction or demolition site within the AQMA will be required to meet Stage IIIB of the Directive as a minimum.
- (b) NRMM used on any MEDIUM or MAJOR classified development in the AQMA will be required to meet Stage IV of the Directive as a minimum.

The requirements may be met using the following techniques;
(a) Reorganisation of NRMM fleet (b) Replacing equipment (with new or second-hand equipment which meets the policy) (c) Retrofit abatement technologies (d) Re-engining.

All eligible NRMM should meet the standards above unless it can be demonstrated that the machinery is not available or that a comprehensive retrofit to meet both PM and NOx emission standards is not feasible.

5.4 Assessing the acceptability of a scheme

We will determine the acceptability of a scheme and its location based on the outcome of the air quality assessment and the provision of on-site and/or off-set mitigation.

While applicants may present evidence as to the significance of scheme impacts or the impact of air quality on a scheme, we reserve the right to determine the acceptability of a scheme based on local air quality knowledge and the cumulative impacts of schemes. A key test is

whether the development impact will help sustain and contribute towards compliance with relevant limit values or national objectives.

5.5 Specific Issues

5.51 Heating & Power

Minimum emission standards that are outlined below should be applied where relevant.

Heating plant on developments in the AQMA:

- Individual gas fired boiler <40mgNO_x/kWh
- Spark ignition engine 95mgNOx/Nm3
- Compression ignition engine 400mgNOx/Nm3
- Gas turbine 20mgNOx/Nm3

It should be noted that all plant equipment permitted under the Pollution Prevention and Control Act 1999 and the Environmental Permitting Regulations 2016 (as amended), including CHP plant 20 MW_{th} input or above, will need to comply with the emission standards set through the permitting process and the planning system cannot set alternative standards. This means that, based on the emissions of such plant, the Council will need to decide whether such schemes are an acceptable use of the application site depending on their impact on air quality.

5.52 Biomass boilers

Biomass boiler provision has increased over recent years, supported by the financial benefits of the Government's Renewal Heat Incentive (RHI)[26]. However, the emissions from biomass plant can lead to significant emissions of NOx and PM, even from relatively small plant.

All biomass boiler plant applications will be subject to a full air quality assessment and will be resisted in our AQMA unless mitigation is provided to achieve emissions of NOx and PM that are capable of achieving the following standards:

- Solid biomass boiler (< 1 MW thermal input) NOx 180mgNm3 / PM 5mgNm3
- Solid biomass boiler (=/> 1 MW thermal input) NOx 125 mgNm3 / PM 5mgNm3

These standards can be achieved through the use of fabric or ceramic filters.

[26] http://www.energysavingtrust.org.uk/scotland/grants-loans/renewables/renewable-heat-incentive?gclid=EAIaIQobChMI_ZiY2Z7Q2gIVgbHtCh0dwgxCEAAYASABEgKGgvD_BwE

5.53 Standby / back-up power generation

All standby/back-up power generation applications, including schemes regulated by the Environment Agency, will require a full air quality assessment to assess the acceptability of the site for such a scheme.

We expect all such assessments to include reasoning as to whether gas powered generation can be utilised in the first instance e.g. identify the provision of suitable gas mains in the vicinity.

Any diesel-powered generators will be required to incorporate abatement equipment such as selective catalytic reduction and particulate trap (SCRT) and demonstrate that they don't add to the problem.

5.54 Permitting under the Pollution Prevention and Control Act 1999 and the Environmental Permitting Regulations 2016 (as amended)

Industrial processes which may range from large industrial plant to dry cleaners and paint spraying workshops, are regulated by the Environment Agency (Part A1 processes) and the Council (Part A2 and Part B processes). The planning regime must assume that the permitting regime will ensure the processes comply with their permits and the Act. The planning regime can, however consider whether a land use is appropriate and it must consider the exposure to pollutants.

All Part A and B Process developments requiring planning applications and where NOx and PM emissions are relevant will be required to carry out a detailed air quality assessment

5.55 Mechanical Ventilation

Air quality concentrations may affect the suitability of certain locations for sensitive developments and this should be assessed in line with section 5.2.

Some applications in areas of poor air quality have proposed mechanical ventilation as a solution to overcoming potential exposure to poor air quality. This may involve sealed windows / triple glazing with trickle vents and a forced ventilation system, incorporating filters to remove pollutants such as NOx and particulates.

Not only do such schemes increase the energy requirements of developments but also provide a questionable living space in what is essentially a 'hermetically sealed unit' and should not be seen as a desirable or automatically acceptable solution to mitigating against exposure, particularly where mechanical failure would make the situation even worse.

Any sensitive development in an area of pollutant exceedance should first examine the following considerations:

- The sensitive development should be at least 20m from the curb, with the alignment of living space to afford further separation from a pollutant source.
- Take account of the height separation of living accommodation from a road source e.g. can residential dwellings be provided from floors 2 / 3 upwards with commercial premises at lower levels.
- The use of green infrastructure to provide a barrier to an adjacent pollution source (see 5.56).
- The projected length of time that the sensitive dwelling will be exposed to elevated pollution levels from scheme completion.
- Reduce the potential for internal pollution e.g. through electric cooking provision.
- Provision of monitoring data to support applications for sensitive developments. This requirement should be agreed with the Council's Environmental Protection Team prior to commencement of monitoring.

Where the above considerations cannot achieve acceptable exposure for a sensitive development, then consideration should be given to a refusal of the scheme.

5.56 Green Infrastructure

Plants and trees may provide an aesthetically pleasing aspect to a scheme and may also be used to provide a barrier from a pollutant source such as a trafficked road.

While there is conflicting evidence as to whether green infrastructure can help reduce concentrations of NO_2, it is acknowledged that certain types of shrubs and trees can be effective at removing particulates from the atmosphere, increasing pollutant dispersion and providing a barrier to pollutant sources such as heavily trafficked roads.

For example, a living wall or a framework for climbing plants may offer some protection between a pollution source such as a road and a dwelling. Additionally, certain types of trees such as varieties of pine, planted between a road and residential accommodation may help reduce exposure to particulates.

Careful consideration is needed as to the type of green infrastructure to be used as certain tree species can produce their own emissions, such as isoprenes, which may exacerbate air pollution.

Any proposals to incorporate green infrastructure into scheme design should provide evidence as to the suitability of the species chosen.

5.57 Section 106 Agreements and the Community Infrastructure Levy (CIL)

Coventry City Council are currently developing a Community Infrastructure Levy (CIL)[27] and Developer Contributions SPD. The Council's most recent Infrastructure Delivery Plan does however include some air quality mitigation infrastructure, including electric vehicle charging points.

Subject to the rules on pooling, the Council will seek Section 106 Agreements (Town and Country Planning Act 1990) and other relevant obligations with developers to secure mitigation, including off-set, on larger schemes (Medium and Major), where appropriate, to make the scheme environmentally acceptable.

Section 106 Agreements will only be sought where the following tests are satisfied:

- Necessary to make the development acceptable in planning terms
- Directly related to the development; and
- Fairly and reasonably related in scale and kind to the development.

Where the Coventry City Council CIL schedule specifies contributions towards air quality infrastructure then this will be considered as part of negotiating wider developer contributions to avoid any issue of double counting.

Appendix 1

[27] http://www.coventry.gov.uk/info/111/planning_policy/2764/community_infrastructure_levy/1

Air Quality Assessment Protocol to Determine the Impact of Vehicle Emissions from Development Proposals

An air quality assessment should clearly establish the likely change in pollutant concentrations at relevant receptors resulting from the proposed development during both the construction and operational phases. Air quality assessments must also consider the cumulative impacts associated with all planned developments, particularly those allocated in the Local Plan. This is particularly relevant, for example, in areas such as Keresley and Eastern Green where sustainable urban extensions would result in developments being brought forward in various phases.

An air quality assessment should consider NOx and PM emissions and NO_2 and PM concentrations

Key Components of an Air Quality Assessment

The assessment will require dispersion modelling utilising agreed monitoring data, traffic data and meteorological data. The modelling should be undertaken using recognised, verified local scale models by technically competent personnel and in accordance with LAQM TG.16. The study will comprise of:

1. The assessment of the existing air quality in the study area for the baseline year with agreed receptor points and validation of any dispersion model;
2. The prediction of future air quality without the development in place (future baseline or do-nothing);
3. The prediction of future emissions and air quality with the development in place (with development or do-something); and
4. The prediction of future emissions and air quality with the development (with development or do-something) and with identified mitigation measures in place.

The assessment report should include the following details:

A. A detailed description of the proposed development, including:
   - Identify any on-site sources of pollutants;
   - Overview of the expected traffic changes;
   - The sensitivity of the area in terms of objective concentrations;
   - Local receptors likely to be exposed; and
   - Pollutants to be considered and those scoped out of the process.

B. The relevant planning and other policy context for the assessment.

C. Description of the relevant air quality standards and objectives.

D. The assessment method details including model, input data and assumptions:
   For traffic assessment:
   - Traffic data used for the assessment;
   - Emission data source;
   - Meteorological data source and representation of area;
   - Baseline pollutant concentration including any monitoring undertaken;
   - Background pollutant concentration;
   - Choice of base year;

- Basis for NO_x:NO_2 calculations; and
- A modelling sensitivity test for future emissions with and without reductions.

For point source assessments:

- Type of plant**;**
- Source of emission data and emission assumptions;
- Stack parameters – height, diameter, emission velocity and exit temperature;
- Meteorological data source and representation of area;
- Baseline pollutant concentrations;
- Background pollutant concentrations;
- Choice of baseline year; and
- Basis for deriving NO2 from NOx.

E. Model verification for all traffic modelling following DEFRA guidance LAQM.TG (16).
F. Identification of sensitive locations.
G. Description of baseline conditions.
H. Description of demolition/construction phase impacts.
I. Summary of the assessment results:
   - Impacts during the demolition/construction phase;
   - Impacts during the operation phase;
   - The estimated emissions change of local air pollutants;
   - Identified breach or worsening of exceedences of objectives (geographical extent)
   - Whether Air Quality Action Plan is compromised;
   - Apparent conflicts with planning policy and how they will be mitigated; and
   - Uncertainties, errors and verification.
J. Mitigation measures.

Air Quality Monitoring

In some case it will be appropriate to carry out a short period of air quality monitoring as part of the assessment work. This will help where new exposure is proposed in a location with complex road layout and/or topography, which will be difficult to model or where no data is available to verify the model. Monitoring should be undertaken for a minimum of three to six months using agreed techniques and locations with any adjustments made following Defra technical guidance LAQM.TG (16).

Assessing Demolition/Construction Impacts

The demolition and construction phases of development proposals can lead to both nuisance dust and elevated fine particulate (PM_{10} and $PM_{2.5}$) concentrations. Modelling is not appropriate for this type of assessment, as emission rates vary depending on a combination of the construction activity and meteorological conditions, which cannot be reliably predicted. The assessment should focus on the distance and duration over which there is a risk that impacts may occur. The Institute of Air Quality Management (IAQM)[28] has produced a number of documents to which this guidance refers. The document `Guidance on the Assessment of the Impacts of Construction on Air Quality and the Determination of their Significance' should be the reference for reporting the construction assessment.

Cumulative Impacts

[28] IAQM www.iaqm.co.uk

The NPPF (paragraph 124) recognises that a number of individual development proposals within close proximity of each other require planning policies and decisions to consider the cumulative impact of them. Difficulties arise when developments are permitted sequentially, with each individually having only a relatively low polluting potential, but which cumulatively result in a significant worsening of air quality. This will occur where:

- A single large site is divided up into a series of units, such as an industrial estate or retails park;
- A major development is broken down into a series of smaller planning applications for administrative ease; and
- There are cumulative air quality impacts from a series of unrelated developments in the same area.

The first two cases the cumulative impact will be addressed by the likelihood that a single developer will bring forward an outline application for the whole site which should include an air quality assessment as part of an Environmental Assessment. For major developments that are broken down into a series of smaller planning applications, the use of a `Master or Parameter Plan' that includes an air quality assessment will address the cumulative impact.

Appendix 2 – Damage Costs: calculations and example

Damage costs are the costs to society (mainly health) per tonne of pollutant emitted. They provide an easy reckoning of the monetised value of changes in pollution. The Government publishes damage costs for NOx and PM and also provides an Emission Factor Toolkit to allow the calculation of the emissions from schemes over the coming years.

Applicants calculating damage costs should incorporate the following:

- The most recent version of the Emission Factor Toolkit
- Both NOx and PM to be considered
- Appropriate HGV % traffic split to be used
- Traffic speed of 30km / hour to be used
- The appropriate damage cost category as advised by the Council Air Quality Team

The following example outlines the damage cost calculation process for an urban mixed-use development outside London, to be operational in 2019, including residential development in 2 blocks and a hotel. The trip generation for the residential scheme is low due to less than 50% parking level per dwelling, including 25% provision of electric vehicle charging points (and a further 25% potential) and cycle stores. The hotel scheme includes 100+ space parking provision. Service deliveries to both the residential and hotel scheme are also considered.

The scheme is categorised as 'outer conurbation (not London)' for damage costs.

Step 1 – Using the trip increase for each aspect of the scheme calculate the annual emissions of NOx and PM (in tonnes) for each of the 5 years from opening

	Projected yearly emissions (Defra Emission Factor Toolkit v8)				
	2019	**2020**	**2021**	**2022**	**2023**
Residential NOx	129.73952	120.58516	110.44020	100.85574	92.75155
Residential PM	11.50558	11.31002	11.17497	11.06880	10.98908
Hotel NOx	506.79502	471.03580	431.40703	393.96773	362.31073
Hotel PM	44.94366	44.17977	43.65224	43.23749	42.92610
Deliveries NOx	477.56736	409.78076	347.56394	296.07882	256.18598
Deliveries PM	32.62307	31.71858	30.96677	30.38716	29.94013
Total NOx (kg)	1,114.1019	1,001.4017	889.41117	790.90229	711.24826
Total PM (kg)	98.07231	87.20837	85.79398	84.69345	83.85531
Total NOx (t)	**1.1141019**	**1.0014017**	**0.8894111**	**0.7909022**	**0.7112482**
Total PM (t)	**0.0980723**	**0.0872083**	**0.0857939**	**0.0846934**	**0.0838553**

Step 2 – Using the selected damage cost category, uplift the 2015 prices provided by the IGCB by 2% per annum to reflect the correct cost in each of the first 5 years from opening

	Price per tonne of pollutant in projected years (Defra IGCB)					
	2015 price/tonne	**2019**	**2020**	**2021**	**2022**	**2023**
NOx	£31,776	£34,395	£35,083	£35,784	£36,500	£37,230
PM	£87,770	£95,003	£96,903	£98,841	£100,817	£102,833

Step 3 – Multiply the tonnage of emissions for each pollutant by the damage cost price for each year. Provide a cumulative total for 5 years

	Damage Costs				
	2019 (year 1)	**2020**	**2021**	**2022**	**2023 (year 5)**
NOx	£38,319	£35,132	£31,826	£28,867	£26,479
PM	£9,317	£8,450	£8,479	£8,538	£8,623
Totals (cumulative)	**£47,636**	£91,218	£131,523	£168,928	**£204,030**