Tunbridge Wells Borough

Local Plan

Tunbridge Wells Borough Council

Air Quality Topic Paper for Pre-Submission Local Plan

February 2021

Tunbridge Wells Borough Council

Contents

1.0 Introduction

1.1 Air pollution is associated with a number of adverse health impacts. It is recognised as a contributing factor in the onset of heart disease and cancer, and disproportionately affects vulnerable groups in society such as children and older people, and those with heart and lung conditions. In fact, Defra states that poor air quality is the largest environmental risk to public health in the UK.

1.2 Short-term exposure to poor air quality is known to be associated with increased hospital admissions and mortality for cardiovascular diseases and asthma. Long-term exposure to poor air quality causes a reduction in life expectancy. A decrease in lung function in both children and adults, and respiratory infections in early childhood have also been reported. Additionally, there is now emerging evidence linking poor air to the progressions of Alzheimer's and Parkinson's disease.

1.3 There is often a strong correlation between low-income communities and poor air quality, and Public Health England estimates that the cumulative health and social care costs of air pollution ($PM_{2.5}$ and NO_2) in England could reach £18.6 billion by 2035.

1.4 In addition, poor air quality has adverse impacts on the natural environment through damage to vegetation, soils, rivers and lakes.

1.5 The causes of poor air quality are multifaceted. In Tunbridge Wells borough, traffic congestion is the predominant source and other sources, including commercial, industrial and domestic sources, make a smaller contribution to the background pollution concentrations.

1.6 The three air pollutants of relevance to the borough are nitrogen dioxide (NO_2), particulate matter with a diameter no greater 10 microns (PM_{10}) and particular matter with a diameter no greater than 2.5 microns ($PM_{2.5}$).

1.7 This Topic Paper has been prepared to provide background information and justification for the air quality policies in the emerging Local Plan.

2.0 Legislation and Policy

National

2.1 The following national legislation or policy are of most relevance to the air quality policies in the emerging Local Plan.

2.2 It is noted that that the UK left the European Union on 31 January 2020 under the terms set out in the European Union (Withdrawal Agreement) Act 2020 (the Withdrawal Act). This established a transition period which ended on 31 December 2020. The Withdrawal Act retained the body of existing EU-derived law which under UK domestic law included the 2008 Air Quality Framework Directive which has shaped air quality legislation in the UK.

2.3 The key legislation and policy summarised below enact various aspects of the Air Quality Framework Directive. Now the transition period is past, the UK is free to repeal EU directives. For the purposes of this Topic Paper, it is assumed that this legislation and policy will remain relevant during the plan period of the emerging Local Plan.

Environment Act 1995

2.4 Under the Environment Act 1995, all local authorities have a duty to review and assess air quality in their area periodically, in order to determine whether or not air quality objectives are likely to be met. The air quality objectives relevant to Tunbridge Wells borough are shown in Tables 1 and 2.

Table 1: Air Quality Objectives for nitrogen dioxide (NO_2) in England relevant to Tunbridge Wells borough

Concentration Limit (micrograms per cubic metre of air)	**Exceedances**	**Measured as**
200 µg/m^3	No more than 18 times per year	1-hour mean
40 µg/m^3	None permitted.	Annual mean

Table 2: Air Quality Objectives for particulate matter (PM_{10}) in England relevant to Tunbridge Wells borough

Concentration Limit (micrograms per cubic metre of air)	**Exceedances**	**Measured as**
50 µg/m^3	No more than 35 times per year	24-hour mean
40 µg/m^3	None permitted	Annual mean

2.5 Where it appears that the air quality objectives will not be met, there is a statutory duty for local authorities to declare an Air Quality Management Area (AQMA) and develop an associated Air Quality Action Plan in pursuit of the air quality objectives.

The Clean Air Strategy 2019

2.6 The UK Clean Air Strategy (Defra, 2019) sets out a wide range of actions by which the UK Government will seek to reduce pollutant emissions and improve air quality. Actions are targeted at four main sources of emissions: Transport, Domestic, Farming and Industry.

2.7 In line with the Environmental Protection Act, it provides both air quality standards and objectives for key air pollutants, which are designed to protect human health and the environment. The 'standards' are set as concentrations below which effects are unlikely even in sensitive population groups, or below which risks to public health would be exceedingly small. They are based purely upon the scientific and medical evidence of the effects of an individual pollutant. The 'objectives' set out the extent to which the Government expects the standards to be achieved by a certain date. They take account of economic efficiency, practicability, technical feasibility and timescale.

2.8 It also sets out how the different sectors: industry, transport and local government, can contribute to achieving the air quality objectives. Local authorities are seen to play a particularly important role. The strategy describes the Local Air Quality Management (LAQM) regime that has been established, whereby every authority has to carry out regular reviews and assessments of air quality in its area to identify whether the objectives have been, or will be, achieved at relevant locations, by the applicable date. If this is not the case, the authority must declare an Air Quality Management Area (AQMA) and prepare an action plan which identifies appropriate measures that will be introduced in pursuit of the objectives.

2.9 The objectives for use by local authorities are prescribed within the Air Quality (England) Regulations, 2000, Statutory Instrument 928 (2000) and the Air Quality (England) (Amendment) Regulations 2002, Statutory Instrument 3043 (2002).

2.10 The objectives apply at locations where members of the public are likely to be regularly present and are likely to be exposed over the averaging period of the objective. For nitrogen dioxide (NO_2) this is considered to apply at the façades of residential properties, schools, hospitals etc.; they do not apply at hotels.

National Planning Policy Framework (2019)

2.11 The NPPF states in paragraph 181 that:

"planning policies and decisions should sustain and contribute towards compliance with relevant limit values or national objectives for pollutants, taking in account the present 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 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 decision should ensure that any new development in Air quality Management Areas and Clean Air Zones is consistent with the local air quality action plan."

2.12 The following paragraphs within the NPPF recognise the impact of traffic on air quality and health and the benefits of sustainable transport modes:

- "Paragraph 102. '*Transport issues should be considered from the earliest stages of plan-making and development proposals, so that:*

  a) the potential impacts of development on transport networks can be addressed;

  b) opportunities from existing or proposed transport infrastructure, and changing transport technology and usage, are realised – for example in relation to the scale, location or density of development that can be accommodated;

  c) opportunities to promote walking, cycling and public transport use are identified and pursued;

  d) the environmental impacts of traffic and transport infrastructure can be identified, assessed and taken into account – including appropriate opportunities for avoiding and mitigating any adverse effects, and for net environmental gains; and

  e) patterns of movement, streets, parking and other transport considerations are integral to the design of schemes, and contribute to making high quality places.'

- Paragraph 103. '*The planning system should actively manage patterns of growth in support of these objectives. Significant development should be focused on locations which are or can be made sustainable, through limiting the need to travel and offering a genuine choice of transport modes. This can help to reduce congestion and emissions, and improve air quality and public health. However, opportunities to maximise sustainable transport solutions will vary between urban and rural areas, and this should be taken into account in both plan-making and decision-making.*"

- Paragraph 110. "*Within this context, applications for development should:*

- *a) give priority first to pedestrian and cycle movements, both within the scheme and with neighbouring areas; and second – so far as possible – to facilitating access to high quality public transport, with layouts that maximise the catchment area for bus or other public transport services, and appropriate facilities that encourage public transport use;*
- *e) be designed to enable charging of plug-in and other ultra-low emission vehicles in safe, accessible and convenient locations."*

- Paragraph 111. *"All developments that will generate significant amounts of movement should be required to provide a travel plan, and the application should be supported by a transport statement or transport assessment so that the likely impacts of the proposal can be assessed."*

Planning Practice Guidance (PPG)

2.13 The PPG provides advice to planning authorities on implementing the NPPF, this includes further guidance on how air quality can be considered as part of the planning process.

2.14 Paragraph 005 of the PPG states that "*Whether air quality is relevant to a planning decision will depend on the proposed development and its location. Concerns could arise if the development is likely to have an adverse effect on air quality in areas where it is already known to be poor, particularly if it could affect the implementation of air quality strategies and action plans and/or breach legal obligations (including those relating to the conservation of habitats and species). Air quality may also be a material consideration if the proposed development would be particularly sensitive to poor air quality in its vicinity.*

Where air quality is a relevant consideration, the local planning authority may need to establish:

- *The 'baseline' local air quality, including what would happen to air quality in the absence of the development;*
- *Whether the proposed development could significantly change air quality during the construction and operational phases (and the consequences of this for public health and biodiversity); and*
- *Whether occupiers or users of the development could experience poor living conditions or health due to poor air quality"*

2.15 The NPPG also contains steps a local planning authority might take in considering air quality set out in a flow diagram.

Forthcoming Environment Bill

2.16 The forthcoming Environment Bill is currently progressing through the House of Commons and includes a clause which will implement a legally binding target for $PM_{2.5}$ by 2022. The implications of this clause for the borough will need assessing when the Bill gains Royal Assent.

Regional

Kent and Medway Energy and Low Emissions Strategy

2.17 The Kent and Medway Low Emissions Strategy, endorsed by Kent leaders on 8th October 2020, states that although air quality is generally improving in line with national trends, there are still 43 Air Quality Management Areas across Kent and Medway and significant pockets of poor air quality along the county's major road networks. It is estimated that in 2017, there were 922 deaths associated with particulate matter ($PM_{2.5}$) exposure across Kent and Medway.

2.18 It goes on to describe 10 priorities that need to be addressed and includes relevant information about how the strategy will be delivered including emission reduction pathways, planning policy and short and long-term focus activities for transport and travel.

Local

Air Quality Action Plan

2.19 The latest Air Quality Action Plan (AQAP) for Tunbridge Wells Borough Council was adopted in early 2019.

2.20 The actions are set out under the three priority areas of transport, planning and public health. and include the following borough-wide measures to improve air quality:

- Support for measures to increase the use of sustainable transport modes such as walking and cycling.
- Investigation of a Low Emission Standard for buses.
- Incorporation of an SPD into the emerging Local Plan
- Engaging with schools to reduce the impact of school traffic.

3.0 Tunbridge Wells borough

3.1 There are several locations in the borough that suffer from congestion, particularly on the approach roads to town centres.

3.2 Tunbridge Wells has an automatic monitoring station at one location on London Road, Southborough, which measures NO_2 and PM_{10} (particulate matter less than 10 micron diameter). Also, a network of diffusion tubes has been deployed across the borough to measure NO_2 (see Figure 1).

3.3 Currently monitoring has been undertaken in Paddock Wood, Hawkhurst, Royal Tunbridge Wells, Southborough and Pembury.

3.4 There is currently no monitoring of $PM_{2.5}$ levels (see paragraph 1.23). However, $PM_{2.5}$ monitoring in the neighbouring district of Maidstone suggests that exceedances of the $PM_{2.5}$ objective in Tunbridge Wells are highly unlikely.

3.5 A summary of AQMAs declared, or in the process of being declared, by Tunbridge Wells Borough Council can be found in Table 3. Further information related to declared or revoked AQMAs, including maps of AQMA boundaries are available online.

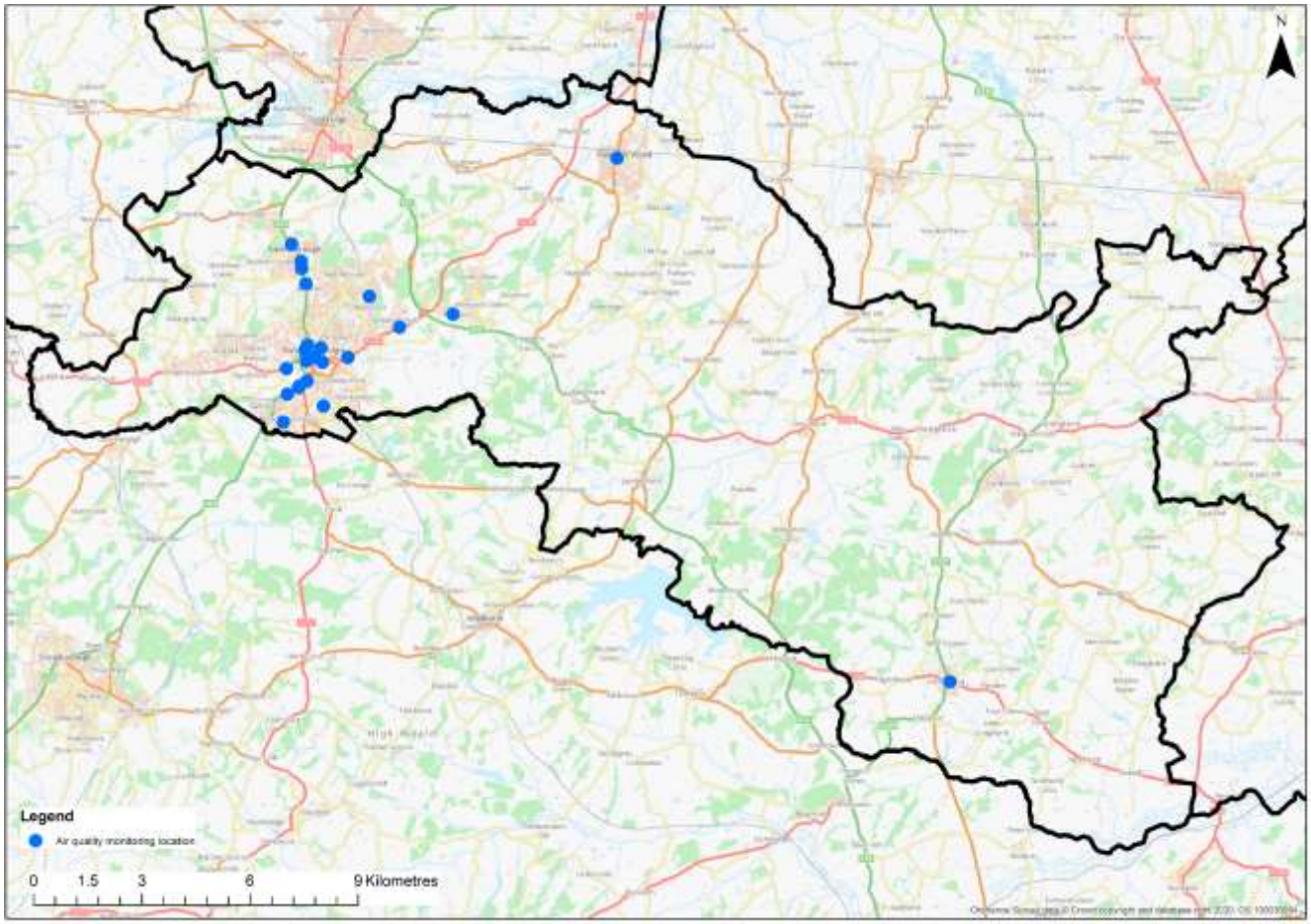

Figure 1. Map of monitoring locations in Tunbridge Wells borough

Table 3: Air Quality Management Areas in Tunbridge Wells borough

AQMA Name	Key Dates	Description	Level of Exceedance (maximum monitored/ modelled concentration at a location of relevant exposure)
A26, Royal Tunbridge Wells	Declared 2005 Amended 2011 Amended 2018	The A26 between Park Road and Neville Terrace and also including Grosvenor Road at 0-80m from the road	NO_2 - 41.8µgm^{-3} (legal threshold 40µg/m^3)
Hawkhurst	*Expected to be declared spring 2021*	Cranbrook Rd i.e. the northern arm of the Hawkhurst crossroads	NO_2 - 52.4µg/m^3 (legal threshold 40µg/m^3)

3.6 The predominant source of the elevated levels of nitrogen dioxide (NO_2) at the proposed or existing AQMAs in the borough is from road transport vehicles. It is noted that road transport vehicles are also a significant source of fine particulate matter in Tunbridge Wells and, although levels fall below the EU threshold, it is known that long term exposure to high levels of air pollution can potentially have serious health impacts. Indeed, the World Health Organisation classified diesel exhaust emissions as carcinogenic to humans in 2013 and it is now thought that there is no safe level for fine particles ($PM_{2.5}$) (less than 2.5 microns in size). The forthcoming Environment Bill is expected to address this gap in current legislation (see paragraph 1.3).

3.7 There are other sources of both particulate and nitrogen dioxide emissions that contribute to the global emissions to air of these pollutants. Most notable of these are agriculture, domestic wood burning and biomass energy generation, as set out in the Government's published Air Quality Strategy 2019 document.

A26 AQMA

Background

3.8 The A26 AQMA was first declared in the borough in 2005 due to exceedances of the annual mean Air Quality Strategy (AQS) objective for nitrogen dioxide (NO_2). In 2011, this AQMA was extended due to exceedances outside of the original AQMA boundaries.

3.9 At the end of 2016, the Council commissioned Air Quality Consultants Ltd to, once again, review the boundaries of its AQMA. The review concluded that the northern and southern ends of the AQMA should be extended, but that the width of the AQMA could be reduced. This process was formally completed in 2018, and the new AQMA took effect from 1 September 2018. See Figure 2.

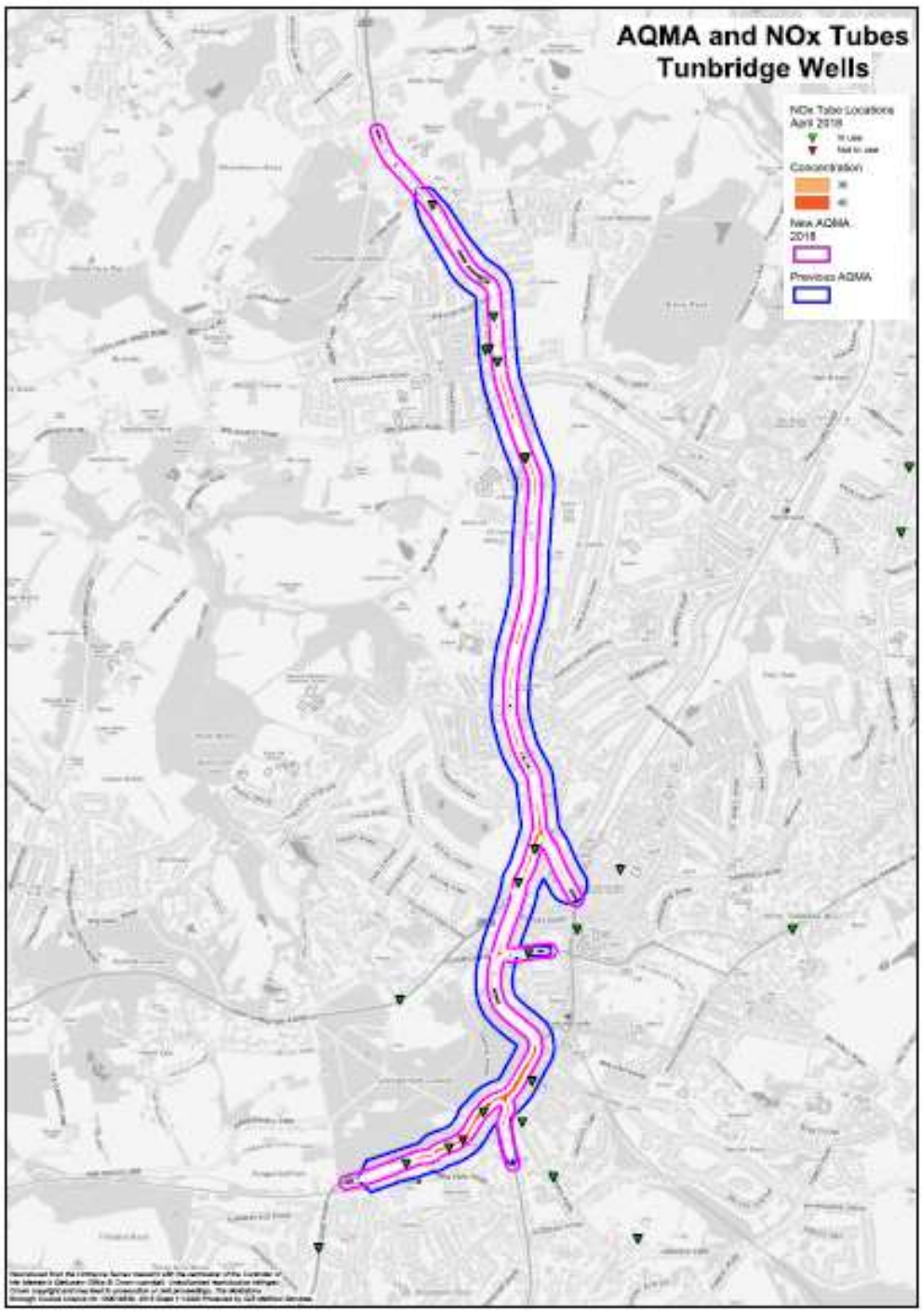

Figure 2. Comparison of new and old A26 AQMA.

Nitrogen dioxide levels

3.10 Figure 3 shows the trend in average NO_2 concentration at diffusion tube monitoring sites within the AQMA from 2011 to 2019. Although nitrogen dioxide levels have exceeded the relevant objective for many years, they appear to have been on a steady downward trend since 2014. In 2017, the level measured at the monitoring station was 40µgm^{-3} which is equal to the objective level. In 2019, the annual mean concentration measured was 34 µg/m3, the lowest recorded.

3.11 Care must be still be taken because, although the annual mean concentration is below the legal limit, there is still one individual monitoring station that is still recording data exceeding the limit. It is worth noting, however, that the individual monitoring station that was exceeding the legal limit is considerably closer to the road than any residential property at that location; therefore, the nearest receptors will be experiencing NO_2 levels below the objective.

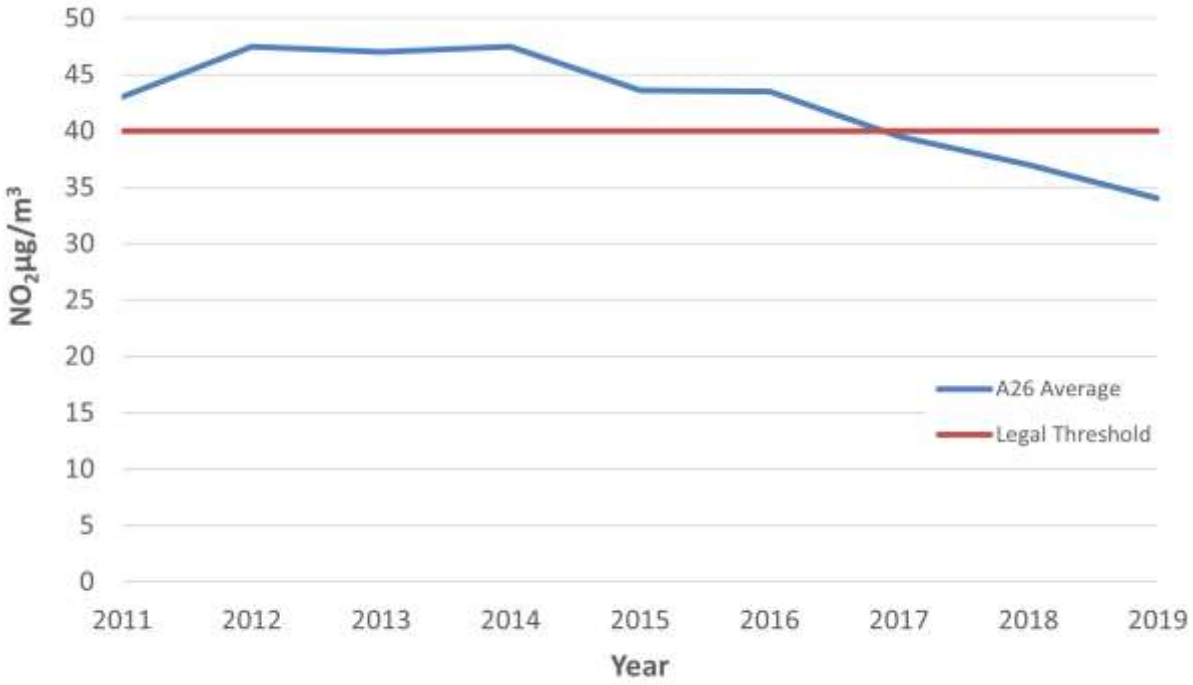

Figure 3: Annual mean NO_2 concentrations measured at the automatic monitoring sites in the Royal Tunbridge Wells AQMA in the years 2011-2019.

Particulate Matter (PM_{10}) levels

3.12 PM_{10} levels have never exceeded the objective in Tunbridge Wells, however, these too appear to be reducing, with levels in 2017 being the lowest recorded at 24µgm^{-3} (see Figure 4). Despite an increase to 27µgm^{-3} in 2018, the levels recorded for 2019 were 21µgm^{-3}, again showing a decrease consistently below the objective level of 40µgm^{-3}.

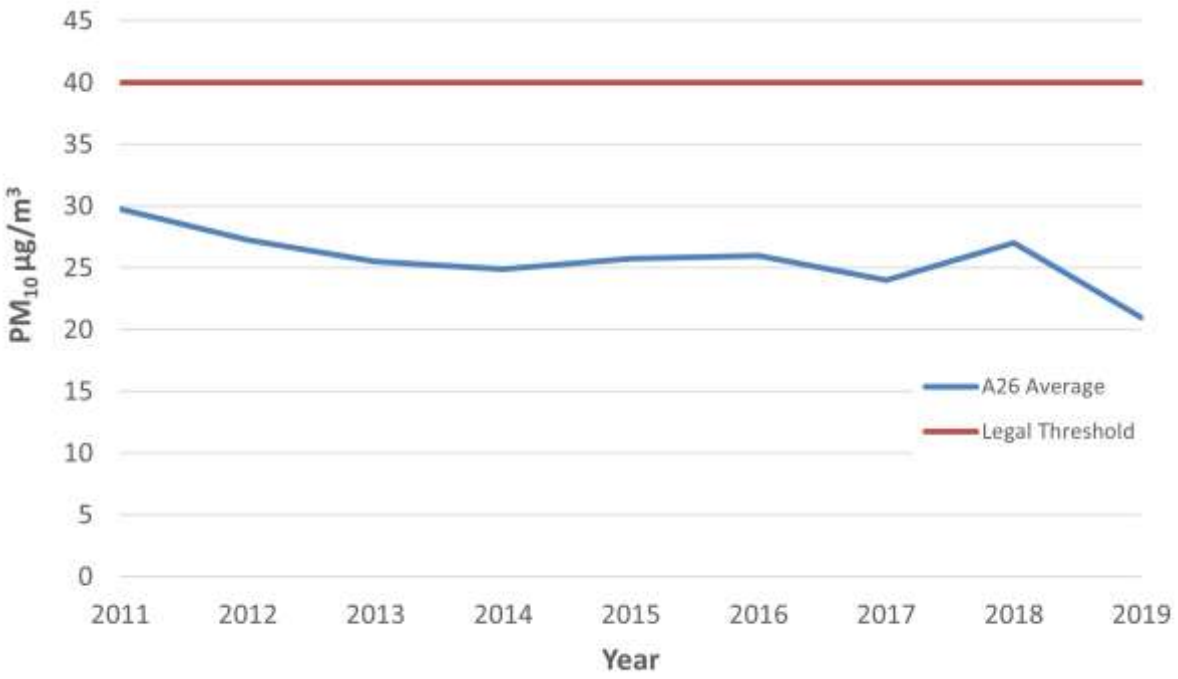

Figure 4: Annual mean PM_{10} concentrations measured at the automatic monitoring sites in Tunbridge Wells in the years 2011-2019.

Particulate Matter ($PM_{2.5}$) levels

3.13 TWBC does not currently undertake any monitoring of $PM_{2.5}$. However, a model has been used to calculate that $PM_{2.5}$ levels are estimated to be 14.7ugm^{-3}. Measured PM_{10} levels are gradually reducing and therefore it can be estimated that $PM_{2.5}$ levels following a similar pattern.

3.14 It is recognised that any measures employed to reduce NO_2 and PM_{10} will also have a beneficial effect on $PM_{2.5}$.

Present Impacts

3.15 The A26 is an important strategic link in the Kent road system, linking Tunbridge Wells and Tonbridge, and will remain so for the foreseeable future. Achieving reductions in traffic on this route is considered challenging. Nevertheless, there does seem to be a real downward trend in NO_2 levels.

3.16 If recent trends continue, Tunbridge Wells Borough Council is likely to be in a position to revoke its AQMA in the near future. It could be argued that since current data suggests there are no exceedances of the national objective at sensitive receptors the AQMA could be withdrawn immediately. However, this has been a relatively short-term trend and so is not considered appropriate at this time. The withdrawal of the AQMA would also greatly reduce the control and protection from unsuitable development in this area that it currently enables. The Council proposes to continue to monitor the levels of air quality closely and undertake a further review should a trend of five years data continue to show no exceedances at new and

existing residential receptors. In this time and as part of the new action plan, the Council may seek to retain measures to protect air quality such as the creation of an 'Air Quality Protection Zone' or equivalent.

3.17 It is worth noting that the Covid-19 pandemic in 2020 and 2021 has caused a reduction in travel and thus air quality data recorded in this time is thus not considered to be representative of the norm.

Future Impacts

3.18 The transport modelling for the emerging Local Plan has predicted a 17-18% increase in peak trips around the key settlements of Royal Tunbridge Wells, Pembury, Tonbridge and Paddock Wood as a result of the new development planned (SWECO 2021). Whilst this has potential to impact upon the existing AQMA at Royal Tunbridge Wells and Tonbridge, it is noted that the air quality at the AQMA in RTW, has improved in the last year and that this trend is expected to continue over the next decade as electric vehicles begin to replace diesel and petrol engines. Due to the uncertainty on the speed of this technological change and the observation that the absolute number of vehicles will increase as a result of the emerging Local Plan, new air quality policies are deemed an appropriate means to control the risk of potential impact.

Hawkhurst AQMA

Background

3.19 Hawkhurst experiences high traffic volumes and idling at the junction where two major roads (A268 and A229) meet in the centre of the village. In the past, nitrogen dioxide (NO_2) levels were measured at the Colonnade on Rye Road between 2011 and 2017. However, no exceedances of the air quality objectives were recorded in this location and so, at the end of 2017, monitoring at the Colonnade was discontinued.

3.20 In 2018, Hawkhurst Parish Council continued to raise concerns relating to the current and potential future air quality in Hawkhurst. The Parish Council has reviewed many planning applications ranging from small developments averaging ten dwellings to a site of several hundred new dwellings. In addition, the Draft Local Plan had identified additional sites in the locality that may be allocated for residential development.

Nitrogen dioxide levels

3.21 Further monitoring at the Hawkhurst crossroads began towards the end of 2018 on the Cranbrook Road arm of the junction and this time revealed exceedances in the annual mean objective for NO_2 with an annual mean concentration of 54µg/m^3.

3.22 The occurrences of exceedance were identified in Cranbrook Road to the north of the crossroads, specifically, close to the traffic lights and going down the hill for approximately 150m. Many of these exceedances were classed as borderline and thus Defra was consulted with and confirmed that an AQMA must be declared.

3.23 For this reason, Tunbridge Wells Borough Council is currently working to declare an AQMA in this location. The timetable for the formal declaration of the AQMA involves consultation over summer/autumn 2020 before formal declaration in Spring 2021.

3.24 At all receptors with exceedances, the largest proportion of the overall concentration was found to be caused by cars (34-35%), followed by LGVs (24%), and Rigid HGVs (13-17%). Background concentrations were predominately from regional sources and contributed 15%-21% of NO_2 concentrations.

Other pollutants

3.25 There are not expected to be any exceedances of any other air quality objectives in Hawkhurst.

Present Impacts

3.26 As for the A26 AQMA, it is important to remember that vehicles' engines are becoming less polluting over time, and there may be changes to private vehicle use and trip generation post 'coronavirus lockdown' as people's places of work and travel preferences change.

3.27 It is, therefore, reasonable to expect concentrations to reduce from those measured and modelled in 2019 in the coming years, more rapidly than they have in previous years.

3.28 Due to Covid 19, no further meaningful data was recorded in 2020 and it is highly likely that no further meaningful data will be measured until 2022.

Future Impacts

3.29 The air quality impacts associated with additional traffic from newly built dwellings have been modelled for the period 2020 to 2027. This time period covers only the beginning of the Local Plan time frame. However, impacts were lessening sufficiently by 2027 and so it was felt the model did not need to go any further into the future.

3.30 As most developments proposed in the area are residential, the assessment focussed on the impacts of car trips, rather than heavier vehicles.

3.31 A series of projections provided by DfT and Defra were used to predict what will happen to traffic volumes, age of vehicle fleet, background pollutant concentrations and vehicle emissions.

3.32 For example, the European type approval ('Euro') standards for vehicle emissions which apply to all new vehicles manufactured for sale in Europe have, over many years, become progressively more stringent. This is one of the factors that has driven reductions in both predicted and measured pollutant concentrations over time and is expected to continue into the future.

3.33 Within the method used, the baseline projections for traffic flows for future years have already made an allowance for annual traffic growth from new development using the Department for Transport's TEMPro System, and thus adding the impacts of further individual developments in the local area may result in some double counting. For this reason, the assessment of potential impacts was considered as worst-case.

3.34 Thirty-two receptors were modelled in Hawkhurst in total. Of these, five showed a modelled exceedance of the annual mean NO_2 objective in 2019. This consisted of three receptors were predicted to exceed the objective from 2020 to 2022, two predicted to exceed in 2023 and one in 2024. After 2024 all receptors were predicted to be compliant with the NO_2 annual mean objective (and all other objectives).

3.35 Despite this, the proposed AQMA included approximately forty properties, which is a precautionary measure recognising the inherent uncertainties of modelling.

3.36 Once the baseline findings had been established, the effects of additional planned future residential development were modelled. The objective was to determine the maximum number of additional cars (beyond baseline) that could be accommodated on Cranbrook Road in each year while limiting impacts to a specific descriptor level (e.g. negligible, slight adverse etc).

3.37 The results of this exercise are shown in Table 4 below. The table describes the maximum number of cars that could be accommodated without triggering a change of air pollutant threshold. 1 more car than the number listed would generate a negative change.

Table 4: Cumulative impacts from planned residential development in terms of daily car trips

Year	Maximum number of daily car trips to ensure impacts would be no worse than **SLIGHT ADVERSE**	Maximum number of daily car trips to ensure impacts would be no worse than **MODERATE ADVERSE**
2020	n/a	114
2021	n/a	292
2022	n/a	306
2023	n/a	322
2024	182	433
2025	367	1277
2026	1,319	1,851
2027	1,570	2,000

N/A means there is no level of daily car trips per annum below which impacts are limited to slight adverse only, as concentrations recorded at one receptor will be above 41.0 μg/m^3.

3.38 It is the professional judgement of the consultants who have prepared this report that moderate adverse impacts for a limited number of years would be unlikely to lead to significant health effects, and thus development that generates these impacts could be deemed acceptable. Modelled thresholds for slight adverse impacts are also included in Table 2 as a useful comparison and to enact the precautionary principle.

3.39 It has been assumed that any impacts more severe than moderate would be unacceptable. Thus, generating 293 additional daily car trips in 2021 is considered to have unacceptable impacts.

3.40 These thresholds for trips can be related to new dwellings by assuming that on average a new dwelling generates five daily vehicle trips per dwelling. This number is based upon consultation with the Local Highways Authority and consideration of the assumptions made for many of the most recent planning applications in Hawkhurst (for example Planning Application Ref 14/503346). See Table 5.

Table 5: Cumulative impacts from planned residential development in terms of new dwellings

Year	Maximum number of dwellings to ensure impacts would be no worse than **SLIGHT ADVERSE**	Maximum number of dwellings to ensure impacts would be no worse than **MODERATE ADVERSE**
2020	n/a	23
2021	n/a	58
2022	n/a	61
2023	n/a	64
2024	36	87
2025	73	255
2026	264	370
2027	314	400

3.41 The Pre-Submission Local Plan proposes that a maximum of 170 new dwellings are built within Hawkhurst during the plan period of 2020-2038 which equates to 850 daily vehicle trips per annum (170 multiplied by 5 in accordance with paragraph 3.42). Furthermore, when factoring in the proposals in neighbouring Cranbrook (maximum of 429) and Sandhurst (maximum of 30), the total number of new dwellings becomes 629 which equates to 3,145 daily vehicle trips per annum.

3.42 Before this number is compared with the thresholds in Tables 2 and 3, allowance needs to be made for two factors. The first of these is the fact that it is unlikely that all of these additional daily vehicle trips would pass through the newly made AQMA. A proportion of trips originating in Hawkhurst and Sandhurst would travel south, east or west through the Hawkhurst junction instead of north through the new AQMA. Likewise, whilst all trips south from Cranbrook would travel through the newly made AQMA, it is likely that there would still be a proportion of trips traveling north to Maidstone or westwards toward Royal Tunbridge Wells instead.

3.43 The second consideration to be made is the fact that the trajectory of the emerging Local Plan means that the increase in trips predicted in paragraph 3.43 is unlikely to occur entirely within the period modelled up to 2027. Instead, the time taken to obtain planning permission and undertake construction would mean a proportion of these new daily vehicle trips begins after 2027.

3.44 By enacting the precautionary principle, it appears possible that, without mitigation, the Local Plan proposal could cause a deterioration in the air quality at the new AQMA. However, when traffic movement and the Local Plan trajectory, in conjunction with mitigation measures, as required by the policy, are considered, the impact is likely to diminish.

Other Monitoring Locations

3.45 Figure 5 shows the trend in annual mean NO_2 concentration at the monitoring locations *outside* of the existing known problem areas in the borough over the past six years. It can be seen that the annual mean NO_2 concentration has been below the legal limit in all the sites in 2019. The majority of sites showed peak concentrations in 2012 and 2013. The annual mean NO_2 concentration in 2019 is broadly similar to 2018 levels, having decreased slightly at some sites and increased slightly at others.

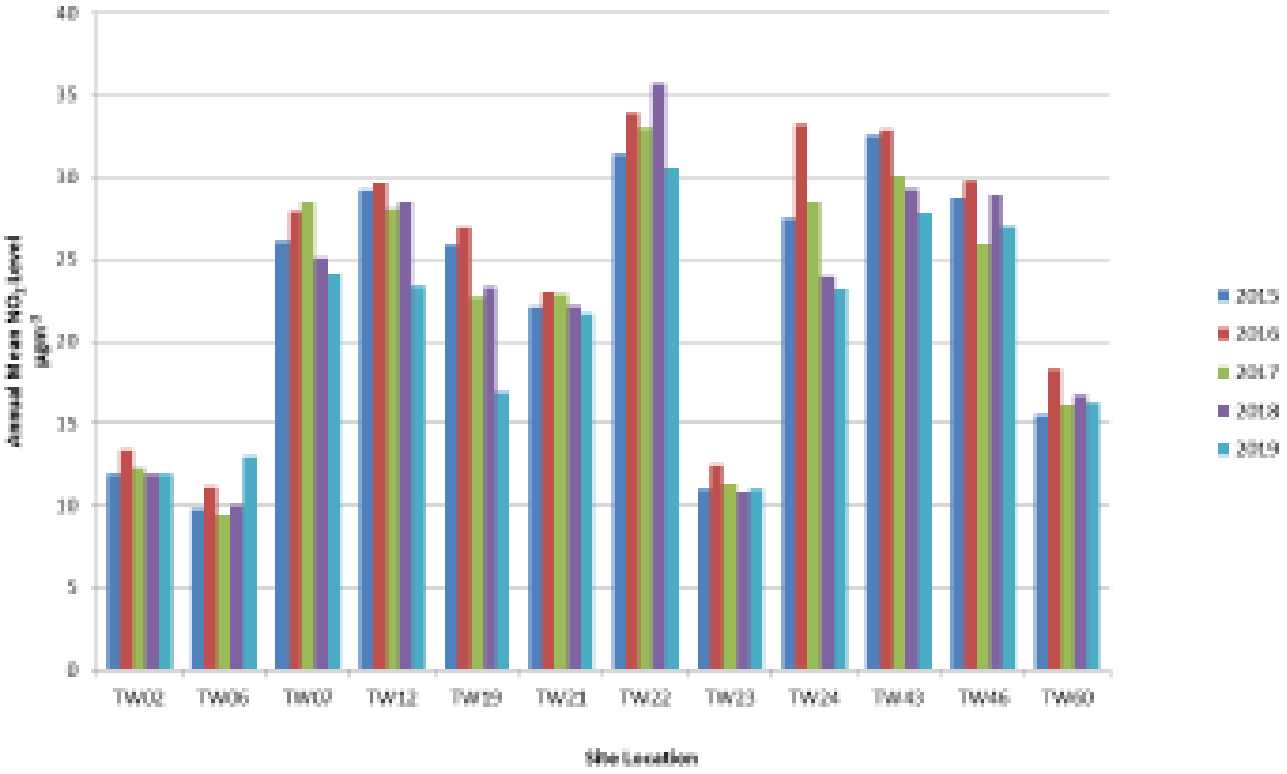

Figure 5 Trends in annual mean NO_2 concentrations measured at monitoring sites outside of existing problem areas in the borough. Legal limit is 40µg/m^3.

4.0 Planning Policy

4.1 With the ongoing growth of the borough, one of the Council's overriding priorities is to encourage investment and sustainable growth and enhance quality of life for all. By focusing on activities that support prosperity, wellness and inclusivity, the borough will be a more attractive place to live, work and visit. The borough already faces the challenges of more traffic on our roads, increased congestion, and at times poorer air quality. There are also locations which, for air quality reasons, are deemed inappropriate for burning solid fuels.

4.2 It is noted in Chapter 3.0 that emissions from domestic and commercial vehicles are predicted to decrease over a number of years due to the natural progression to newer and cleaner vehicles. This is demonstrated in the annual monitoring being undertaken in the A26 AQMA. In addition, Government is currently expecting all new vehicles to be electric by 2030.

4.3 In the shorter term, the uptake of electric vehicles is less certain. Given this and the knowledge that new development planned for by the emerging Local Plan will cause an increase in vehicles, the precautionary principle has been applied by drafting three new development management policies. They are entitled:

- Air Quality;
- Air Quality Management Areas (AQMA);
- Biomass Technology.

Policy 1: Air Quality

4.4 It is noted that, regardless of whether an AQMA has been declared or not, there are areas of the borough that experience air quality pollutant levels close to the legal limit and there are areas of the borough that are not monitored. Evidence from the WHO also shows that air pollution is detrimental to public health at all levels, not just levels above the legal thresholds. For these reasons, a borough-wide air quality policy that prevents general deterioration is important. The following text has been proposed.

Policy EN 23

Air Quality

Development will not be permitted when it is considered that the health, amenity, or natural environment of the surrounding area would be subject to unacceptable air quality effects (that are incapable of being overcome by a condition or planning obligation), taking into account the cumulative effects of other proposed or existing sources of air pollution in the locality. Sensitive receptors will be safeguarded at all times.

Where detailed assessments are required, developments are expected to be at least air quality neutral, with air quality positive proposals strongly encouraged.

In the interests of improving air quality borough-wide, all relevant development is required to install the following small-scale mitigation measures:

1. Low NOx heating, i.e. emitting less than 40mg NOx per kWh;
2. Electric vehicle charging infrastructure (points and cabling; or any new technology requirements); and,
3. Cycle storage that is sufficient and convenient (see Policy TP 3: Parking Standards).

In accordance with Policy TP 1: Transport Assessments and Travel Plans, transport assessments and travel plans are required for proposals above the limits set out in Table 8. Policies STR 6: Transport and Parking, TP 1: Transport Assessments and Travel Plans, and TP 2: Transport Design and Accessibility, also set out that contributions towards mitigation measures may be considered necessary. Applicants should have regard to the Council's Guidance note on Electric Vehicle Charing Points for New Development.

The use of sustainable transport measures, such as supporting sustainable public transport, shared transport initiatives, cycle/footways, improved connectivity and green infrastructure (for example, green roofs, hedges, and street trees) to reduce pollution concentrations and exposure, are strongly encouraged (see Policies STR 5: Essential Infrastructure and Connectivity, STR 6: Transport and Parking, and Policies TP 2: Transport Design and Accessibility, TP 3: Parking Standards, OSSR 1: Retention of Open Space, OSSR 2: The Provision of Publicly Accessible Open Space and Recreation, and EN 16: Green, Grey, and Blue Infrastructure).

Policy 2: Air Quality Management Areas (AQMA)

4.5 To ensure sufficient mitigation can be implemented to offset the effects of potentially impactful development near AQMAs, a damage cost calculation along the lines of that recommended by Defra is felt appropriate.

4.6 It is acknowledged that annual average urban background NO_2 levels are in decline. If improvements in air quality give cause to revoke the AQMA in the future, it will be important that a certain level of protection is still afforded to these vulnerable locations. If necessary, the Local Planning Authority will retain measures to protect air quality such as the creation of an 'air quality protection zone' (or equivalent).

4.7 New policy for the Pre-Submission Local Plan has been drafted below to reflect these aspects.

4.8 The details pertaining to the zones and how they would be implemented, alongside guidance on using cost calculators such as that recommended by Defra would be provided in an accompanying SPD once the policy is adopted.

Policy EN 24

Air Quality Management Areas (AQMA)

Development within or able to impact upon, an AQMA must follow the approach outlined in Policy EN 23: Air Quality and will be required to undertake an emissions mitigation assessment and cost calculation.

These requirements also apply in the event that the Council designates an 'Air Quality Protection Zone' or equivalent.

Subject to the results of the assessment and calculation, a Section 106 agreement will be used to secure contributions to mitigate this impact.

Policy 3: Biomass Technology

4.9 According to the Government's Air Quality Strategy 2019, biomass burning either for energy generation or direct heat is one of the most notable sources of particulate matter and NO_2 emissions. It is anticipated that specific guidance will be issued by Defra in relation to emissions from biomass. However, before this is issued, the following policy has been drafted to ensure biomass does not cause a deterioration in local air quality.

Policy EN 25

Biomass Technology

The Local Planning Authority will support the deployment of biomass technology in locations off the gas grid where coal and oil-fired plant are currently used and where no cleaner or greener feasible alternative is available. The biomass must be locally sourced, and the developer will reduce potential air quality impacts from the expansion in biomass heat through the use of high quality, low emission plant.

Applications for biomass burners (i.e. for those that require planning permission and are not 'permitted development') will require a detailed Air Quality Assessment that, as a minimum, will include the following information:

1. The thermal capacity of the proposed biomass technology, and, if possible, its make and model; and
2. The type of fuel to be used (preferably locally sourced); and
3. Confirmation that it will be an approved appliance, compliant with Defra's latest guidance and the Clean Air Act; and
4. The precise location of the proposed stack(s).

Applications for biomass technology that burn fuel at a rate of greater than 45.4kg/hr will be required to gain chimney height approval from the Local Planning Authority.

Appendices

Appendix 1: Glossary

Abbreviation	Description
AQMA	Air Quality Management Area – An area where air pollutant concentrations exceed / are likely to exceed the relevant air quality objectives. AQMAs are declared for specific pollutants and objectives
Biomass	Biomass is plant or animal material used as fuel to produce electricity or heat. Examples are wood, energy crops and waste from forests, yards, or farms.
Defra	Department for Environment, Food and Rural Affairs
EU	European Union
LAQM	Local Air Quality Management
NO_2	Nitrogen Dioxide
PM_{10}	Airborne particulate matter with an aerodynamic diameter of 10µm (micrometres or microns) or less
$PM_{2.5}$	Airborne particulate matter with an aerodynamic diameter of 2.5µm (micrometres or microns) or less

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