

Urgent Update to Item 14. Revenue Outturn 2017/18 – Allocation of Underspend

Low Emission Zone Feasibility Study – Project Overview

Background

Maidstone Borough Council adopted a new Air Quality Action Plan/Low Emission Strategy in December 2017. The actions in the Strategy are divided into a number of themes, the most important of which is Transport.

The flagship action in the Transport theme was to undertake a feasibility study into a Clean Air Zone (CAZ) or Low Emission Zone (LEZ) in Maidstone.

Originally, it was thought that this would initially be based around the High Street, which is only open to buses and taxis and therefore would be logistically simpler, but that it would later be expanded to other areas.

In recent years we have undertaken more monitoring in Upper Stone Street and have come to realise that air quality is worse there than in any other location in Maidstone. Conversely, air quality in the High Street seems, if anything, to be improving. Therefore, we now feel that a better option would be to try to base the CAZ/LES around Upper Stone Street, where pollution levels are very much higher than they are in the High Street.

Air Quality Objectives

There are two statutory objective levels for NO₂. The first is the annual mean NO₂ level, which is 40µgm⁻³. This is the level which someone can legally be exposed to 24 hours a day, 7 days a week, 365 days a year. It is therefore the relevant level to apply to people in their houses. It is the level we mostly consider when considering planning applications, to ensure that people aren't brought in to areas where this level is exceeded, and to ensure that developments don't create exceedances of this objective where they don't currently exist. Diffusion tubes are routinely used to monitor the annual mean NO₂ levels across the District. Our AQMA is based on exceedances of this objective.

The second objective for NO₂ is the hourly mean. This is the level which you can only legally be exposed to for one hour. This is therefore the objective which is relevant to people simply passing through an area, for example, shoppers. Unlike the annual mean, the hourly mean can't be measured directly by diffusion tubes. However, where diffusion tubes measure an annual mean of more than 60µgm⁻³, the statutory guidance tells us that an exceedance of the hourly mean may be indicated.

Air Quality in Upper Stone Street

In two locations in Upper Stone Street, we recorded levels of 84µgm⁻³ and 79µgm⁻³ in 2016, and 71µgm⁻³ and 68µgm⁻³ in 2017, ie well above the 60µgm⁻³ guideline for an exceedance of the hourly mean objective.

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For comparison, a diffusion tube at the Wheatsheaf pub read $59\mu\text{g}\text{m}^{-3}$ in both 2016 and 2017 but tubes at the sides of the road near the Wheatsheaf junction usually indicate NO_2 levels below the annual mean objective. The maximum level recorded at the Wheatsheaf Pub in recent years was $61.7\mu\text{g}\text{m}^{-3}$ in 2013. The maximum level recorded in Upper Stone Street was 94.8 in 2015, although this was not based on a full year of monitoring.

DEFRA guidance requires an AQMA to be declared where levels of a pollutant exceed ***or are expected to exceed*** an air quality objective. Therefore, in terms of compliance with the statutory requirements, there is already potential justification for declaring a new AQMA in Upper Stone Street, based on an expected exceedance of the hourly mean for NO_2 , since levels there are regularly well in excess of the $60\mu\text{g}\text{m}^{-3}$.

A new AQMA has not been considered so far for two main reasons. Firstly we have recently started continuous monitoring of NO_2 in Upper Stone Street. This will give certainty as to whether or not there really is an exceedance of the NO_2 hourly mean in Upper Stone Street. Secondly, declaring a new AQMA for an exceedance of another air quality objective would require an updated Air Quality Action Plan to tackle the exceedance. At present it is hard to imagine what additional actions we could take which are not already in the existing AQAP. We would also note that AQMAs declared on the exceedance of the hourly mean for NO_2 are extremely rare. There are only a handful in the whole country and these are mostly in central London. We are keen to try to take steps now to avoid the need for one in Maidstone.

It is also worth noting that whilst the PM_{10} objectives were not exceeded at the previous town centre continuous monitoring location in Fairmeadow, NO_2 levels were found to be much lower there than those being measured in Upper Stone Street. Since the sources of NO_2 and PM_{10} are largely the same, ie, road traffic, the possibility of an exceedance of the PM_{10} objectives cannot presently be discounted.

Should the need to declare a new AQMA be confirmed, then as things stand, MBC will be hard pressed to identify new actions to address the exceedance. Even if the declaration of a new AQMA is not deemed necessary, the existing AQAP contains no other measures which specifically target the very high NO_2 levels found in Upper Stone Street.

Public Health

We have been well aware that poor air quality is linked to poor health and even premature death. Figures about large numbers of attributable deaths due to poor air quality regularly appear in the press. A figure of around 130 attributable deaths due to a combination of NO_2 and PM_{10} in Maidstone is often quoted. In 2017, The Lancet linked poor air quality to 6.5 million deaths worldwide. About 40,000 of these are thought to occur in the UK.

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Until recently, these figures have simply been based on statistical interpretations of air quality and public health data, and are not indicative of actual deaths. However, this year for the first time, we have seen a real example of an actual death being linked to poor air quality. Sadly, the individual concerned was a nine year old child. In this case, prior to her death, the child was admitted to hospital 27 times suffering with severe asthma. There was a strong correlation between these hospital admissions and spikes in pollution levels.

The Proposal

The first action in Maidstone's new Low Emission Strategy is as follows:-

Investigate Low Emission Standard for Buses. Either a graduated scheme of improvement "Low Emissions Zone" or a Euro 6 "Clean Air Zone" Starting in the High Street

As mentioned above, this action has already been agreed by members, and is the flagship action in the Transport theme of the Action Plan. The Plan makes clear that we would apply to DEFRA for grant funding to meet the cost of this action, and that if the grant application were unsuccessful, then it would be unlikely that the action could go ahead.

An application was therefore made to DEFRA for funding in the last Air Quality Grant application window. In order to try to make the action more attractive to DEFRA as a candidate for grant funding, and to make it more useful overall, the action was broadened out to consider other measures which could be included in a potential Low Emission Zone, rather than just the original narrow focus on buses. As part of the grant application process we asked a consultant to supply a quotation for undertaking the feasibility study. The following approach was agreed:-

The consultant would identify a range of measures which have the potential to reduce polluting emissions in the area. They would then undertake a qualitative assessment of the potential impact of these measures and their likely cost effectiveness. In consultation with MBC, three of these measures would then be selected for consideration in greater detail, using computer modelling to determine which will deliver the greatest benefit. The quotation to undertake this work was £26,000, including the preparation of a technical report. Unfortunately DEFRA ultimately decided not to support the project. As we get more monitoring data for Upper Stone Street (2017 data has recently been reported to DEFRA) we now feel that it would be a more appropriate location for the introduction of a

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Low Emission Zone than the High Street, where pollution levels seem to be improving.

We would like to emphasize however, that the action being discussed is not the introduction of an LEZ in Upper Stone Street. It is a feasibility study to identify possible measures which could be used to improve air quality in Upper Stone Street, and to quantify their effectiveness. If the feasibility study goes ahead as envisaged, Members would still have the ultimate say about whether and where to create a Low Emission Zone and what measures would be included as part of it.

We would also like to make clear that the measures to be considered as part of this action have not yet been decided. Part of the purpose of the action is to identify these measures. Furthermore, whilst the focus of the action will initially be on Upper Stone Street, it is envisaged that the measures can be ultimately be extended and provide benefits to other areas of the town. For example, an emissions standard for buses using Upper Stone Street is likely to result in a general cleaning up of the local bus fleet as many buses need to go the Upper Stone Street to reach other destinations. This approach is working very successfully in Brighton, where a low emission zone was created in 2015. Although the Low Emission Zone is small, almost 98% of bus movements in the City have to pass through it.

Dr S Maxwell – Senior Scientific Officer