BROMSGROVE DISTRICT COUNCIL

Cabinet

26th October 2022

Enhanced Air Quality Monitoring Proposal

Relevant Portfolio Holder		Councillor Phillip Thomas
Portfolio Holder Consulted		Yes
Relevant Head of Service		Simon Wilkes
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Wards Affected		All
Ward Councillor(s) consulted		No
Relevant Strategic Purpose(s)		Environmental Health
Non-Key Decision		
If you have any questions about this report, please contact the report author in advance of the meeting.		

1. RECOMMENDATIONS

The Cabinet RECOMMEND that:-

Subject to the successful outcome of the grant bid to DEFRA,

1) **the £1,350 capital match funding be incorporated into the Council's capital programme; and**
2) **the £2,250 revenue match funding be incorporated in the Council's revenue budget**

as part of the Final Budget and Medium Term Financial Plan 2023/24 to 2025/26 which is due to be presented to Cabinet and Council in February 2023.

2. BACKGROUND

2.1 On the 5th July 2022 WRS presented its 2021 Air Quality update to the Overview and Scrutiny Board. One of the discussion topics and recommendations proposed was that the Council may wish to enhance its air quality monitoring provisions through the investment of new electro chemical measuring technology. This was approved by Cabinet on 12th October 2022.

2.2 For the purpose of complying with the Government set air quality management regime, air monitoring is undertaken exclusively with passive diffusion tube monitoring techniques. This method has been robustly tested over many years and is used by all local authorities for the purpose of monitoring NO2 in the outdoor environment. The

measurement technique has been fine-tuned over time and it provides us with a level of accuracy that is considered acceptable by the Department of the Environment, Food and Rural Affairs (DEFRA) for the purposes of Air Quality Management (AQM) work. It is also the cheapest method at a cost of around £7 per location per month (laboratory supply and analysis only). Data using this technique can be harvested over a large geographic area and this method has also proven excellent for the purpose of trending air quality over a long period of time.

2.3 There are however limitations to using this technique. Diffusion tubes lack absolute accuracy and can display a +/-10% error rate so locations close to the government objective threshold for action require further study using more sophisticated methods prior to taking action. Diffusion tube results are not immediate, as they must be subjected to the national QA/QC process which corrects the 'tube bias' retrospectively following the completion of the national adjustment Study co-ordinated by DEFRA. Hence data collected in a specific year is not available in a reliable format until the following April.

2.4 All of the Worcestershire authorities have diffusion tube monitoring programmes however two locations do have enhanced monitoring and they are located in Kidderminster.

2.5 A very accurate NO2 gas analyser is installed in Kidderminster that monitors pollution in real-time. Diffusion tubes deployed throughout Worcestershire are also co-located here. The data harvested from both techniques provide us with a local bias adjustment factor which provides several scientific advantages over that of the slow national scheme. The data collected also allows us to report nationally what the background NO2 concertation's are in Worcestershire. Capital cost of this system would be around £17,000 today with annual maintenance cost of £3,000 (single pollutant only). This system is officer time hungry to and is effectively a laboratory instrument inside a bespoke roadside case.

2.6 The second site employs a purpose-built electrochemical gas measuring system purchased by Wyre Forest District Council. This system is not as accurate as the other gas analyser and as of writing, is not approved for AQM work. Nevertheless, it provides real-time information on NO2 levels, particulate matter (PM10 and PM2.5) and ozone (O3). The equipment is deployed in the Blackwell Street/Horsefair area which was subject to significant road junction improvements in 2019. Prior to these changes this area had the

poorest air quality in Worcestershire and the equipment is being used to monitor the effectiveness of these improvements. The equipment will also be used to monitor the significant developments planned on the east side of Kidderminster over the forthcoming years and determine whether they have a detrimental effect on air quality at this location. The system has a capital cost of around £4,000 and annual maintenance and data harvesting cost is £2,500 per year.

2.7 These systems are compact, lightweight air pollution sensors that measure harmful gases and particle matter in real-time, including the main pollutants of concern (NO2 and PM10 and PM2.5). They are powered using internal batteries or via solar panel and can be attached to a lamp post at the required location making siting flexible and expedient without the requirement of street works consent and additional installation costs.

2.8 The sensors provide detailed air quality measurements in real-time and therefore can be used for a variety of purposes including identifying short term trends, tracking pollution hotspots, background concentration monitoring, investigating air quality around schools or other areas. These systems can also be used in isolation or deployed as a network across a wide area to provide a detailed picture and due to the immediacy of the data it has many practical applications in providing early warning though the app and website to advise persons who have respiratory problems of imminent risks due to poor air quality episodes. The data will also be publicly available and will be used in future campaigns around behaviour change and the promotion of active modes of travel.

2.9 As discussed in section 2.5, monitoring in real time for several pollutant types has been prohibitively expensive. However, the advent of this new technology is changing the landscape. ONS are keen on exploring the financial viability of this technology and is therefore seeking Cabinet's view on the merits of investment and its financial implication. The purpose of this report is to provide some background information on the technology, breakdown on cost and alternative funding options.

3. FINANCIAL IMPLICATIONS

3.1 During the course of 2022 other partner authorities also expressed a keen interest in developing their own enhanced data provision. This along with the timely announcement that DEFRA will allow grant bids for monitoring equipment as part of LOT 2 of this year's funding framework provides us with the opportunity to bid for funding.

3.2 Thus utilising the WRS Shared Service arrangements, a County wide air quality grant application to DEFRA to cover a significant proportion of such costs is currently being prepared. Should our bid be successful, Capital and revenue costs would be covered by DEFRA funding however a minimum of 10% match funding is expected of the successful applicant (this will be met by the District Councils in proportion to the number of sensors proposed for each Council area). DEFRA intend to monitor progress on project outcomes for 2 years following award however revenue budget support requested is for 3 years (4 years in total). Beyond the 4 years the Council has the option of funding the servicing and maintenance as the equipment has a life expectancy of between 10-15 yrs.

3.3 WRS have requested grand funding for 3 units on behalf of Bromsgrove to be located in strategic locations. Locations under consideration at the moment are Hagley, Worcester Road in Bromsgrove and Lickey End/Catshill.

3.4 **Cost breakdown (without grant funding)**

Capital investment cost + yr 1	**Cost**
3 units	£12,000
Annual data	£1,500
total	**£13,500**

Revenue (maintenance and data) after yr 1(per year)	
maintenance	£6,000
Annual data	£1,500
Total(Per year)	**£7,500**
Total (3 years)	**£22,500**

3.5 **Cost Breakdown (with successful grant funding)**

3 units(yr1)	**Cost**	**Match funding (10%) 2022-23 grant**
Capital Investment	£12,000	£1,200
Annual data	£1,500	£150
total	£13,500	**£1,350**

Revenue (maintenance and data) (3yrs)		
maintenance	£6,000	£600
Annual data	£1,500	£150
total	£7,500	**£750**
Total (3 years)	£22,500	**£2,250**

3.6 As detailed in paragraph 3.2, should the grant application to DEFRA be successful, 10% match funding would be required by each district council. At the point of writing, it is anticipated that WRS will be aware of the outcome of the bid in March 2023. It is therefore proposed that Cabinet recommend that a capital programme budget totalling £1,350 be incorporated into the Council's capital programme, and that an annual revenue budget totalling £750 (£2,250 over a three-year period) be incorporated in the Council's revenue budget as part of the Final Budget and Medium Term Financial Plan 2023/24 to 2025/26 report due to be presented to Cabinet and Council in February 2023.

4. LEGAL IMPLICATIONS

4.1 None identified

5. STRATEGIC PURPOSES - IMPLICATIONS

Relevant Strategic Purpose

5.1 Action on this proposal and the data from the units would help to support work to address the green thread at the Council.

Climate Change Implications

5.2 This proposal supports green initiatives and plans of the Council as it promotes active travel and other behaviour change projects which discourage travel though the use of motor vehicles.

6. OTHER IMPLICATIONS

Equalities and Diversity Implications

6.1 There are no equalities or diversity implications with this proposal.

Operational Implications

6.2 WRS will run and maintain the monitoring equipment on behalf of the authority including the provision of data access through the internet and via mobile app.

7. RISK MANAGEMENT

7.1 WRS are applying for DEFRA grant assistance for the capital cost of this proposal. Defra are seeking 10% minimum match funding which includes service, maintenance and data processing costs for a total of 4 years. Should the grant application fail in securing the necessary funds the council will need to fund their chosen proposal though the council Budget. The grant application was submitted on the 22nd of September 2022. It is anticipated that funding will be awarded to successful bidders in April 2023.

8. APPENDICES and BACKGROUND PAPERS

Appendix 1 – Images of monitoring equipment & screen shot of real time data feed

Appendix 1 - images of monitoring equipment & screen shot of real time data feed

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Screenshot of Website and live Feed