

## Update report on Salisbury Air Pollution Monitoring Citizen Science Project – 05/10/21

### Summary

The STC project on air pollution monitoring has been running for nine months and is currently a small group of interested individuals with 6 sensors deployed at 4 locations. The sensors chosen are those of the international “sensor community”, these use the most low cost and open architecture systems and are also used by Sustainable Calne. All of Salisbury’s sensors have been placed near individual’s homes. No sensor has been placed at possible high pollution sources such as the curb sides of major roads into Salisbury. One of the sensors appears to be operating differently than the others.

### The following have been observed:-

- Provided the current systems are not operating in conditions of high humidity the sensors have utility in providing spacial and temporal information on PM2.5 values.
- Despite the above limitation the sensors have been able to indicate when the local PM2.5 levels are likely to be harmful to vulnerable individuals and rarely the readings have suggested the levels would be harmful to all groups. These readings are in line with the the closest DEFRA systems.
- Most of Salisbury’s systems have operated with limited downtime and failure. However, the met sensor used does have some issues and in recent weeks one of the particle counters has had a problem. More robust systems might be available e.g. that of PurpleAir.
- In order to gain improved understanding of the PM2.5 air quality in Salisbury and surrounding villages a larger number of these sensors would need to be deployed including at more strategic locations. However, to use the data to best effect and accuracy they will need to work alongside a fully calibrated reference system.
- The nature of the readings and overall accuracy of the sensors means that they cannot currently be used for assessment of regulatory compliance, so the overall aim of the project has changed. However, there is utility in these sensors to offer early alert of harmful conditions and there are a number of ways to take the project forward.
- Some of the limitations identified could be improved but this could take time. The EU is investigating improving the utility of these devices (see FAIRMODE CT6 ).

### Thoughts going forward

- It would be good to raise awareness and get other citizens involved. To achieve this we could:
  - Advertise more widely
  - Get a website going
  - Get schools involved
  - Talk to council
- Work on improving the instrumentation and output could involve
  - Buying better or improving current systems
  - School/ youth projects to improve the current systems
  - Involvement of other parties eg Salisbury Reds
  - Keeping abreast of developments in the EU communities
  - Deploying some sensors at strategic locations such as curbs sides etc.

### Further thought

Adding more sensors does increase the overall cost of the programme and adds an eco-burden associated with the parts (PCBs and plastics) plus power to operate (small at this time) so there is a debate on when low cost stays low cost. However, adding a further 10 or so sensors should not be too onerous.

### Other information

I have been asked to talk about the project at the next Salisbury Air Quality Management meeting. I have not seen any TORs for this group.