Rossendale BOROUGH COUNCIL

ITEM NO. D1

Subject:	Annual Air Quality Report 2020		**Status:**	For Publication	
Report to:	Cabinet		**Date:**	1st December 2020	
Report of:	Public Protection Manager		**Portfolio Holder:**	Communities	
Key Decision:	☐ Forward Plan ☒		General Exception ☐	Special Urgency ☐	
Equality Impact Assessment:	Required:		No	Attached:	No
Biodiversity Impact Assessment	Required:		No	Attached:	No
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1.	**RECOMMENDATION(S)**
1.1	That the content of the report be noted in relation to the Annual Air Quality report

2. PURPOSE OF REPORT

2.1 This report is to provide an update on air quality in the Rossendale Borough Council area for 2020 and actions being taken to improve the quality.

3. BACKGROUND

3,1 The matters discussed in this report impact directly on the following corporate priorities:

- **A clean and green Rossendale:** our priority is to keep Rossendale clean and green for all of Rossendale's residents and visitors, and to take available opportunities to recycle and use energy from renewable sources more efficiently.
- **A proud, healthy and vibrant Rossendale:** our priority is to ensure that we are creating and maintaining a healthy and vibrant place for people to live and visit.

3.2 As recently as the nineties it was felt that air pollution was no longer a major health issue in the United Kingdom. Priority had been given to tackling the biggest individual sources of air pollution and legislation had made the great smogs of the fifties a thing of the past. As these major sources of emissions decreased, the relative contribution of smaller and more dispersed sources of air pollution has increased, which requires new types of action.

In more recent years' evidence has emerged that small particles emitted to the air from various sources, such as road transport, industry, agriculture and domestic fires, are still having a considerable effect on health. This type of air pollution is so small that it can't be seen by the naked eye, but can affect the respiratory system.

Public Health England (PHE) estimates that poor air quality contributes to around 4.4% of all deaths across Lancashire. However, air pollution is likely to contribute a small amount to the deaths of a larger number of exposed individuals rather than being solely responsible for the calculated figure of attributable deaths.

3.3 A report by the Royal College of Physicians in February 2017 estimates that all forms of air pollution account for around 40,000 deaths annually with an associated annual social cost of £22.6 billion.
The annual health cost to society of the impacts of particulate matter alone in the UK is estimated to be around £16 billion.

3.4 Air pollution reduces life expectancy by increasing deaths from heart disease, lung disease

and circulatory problems. The majority of health problems result from long-term exposure to air pollution. In addition, air pollution can reduce lung development in children, which may increase symptoms in those young people who develop conditions like asthma.

3.5 Local authorities have a central role in achieving improvements in air quality. District councils have responsibility for monitoring air quality. Where places are found that have pollution levels higher than the national air quality objectives the local authority must declare an Air Quality Management Area (AQMA) and then put together a plan to bring about improvements.

In Rossendale Borough Council this work is carried out by Environmental Health staff in the Public Protection Unit. However, the work to improve air quality is the responsibility of a wide range of services, organisations and individuals.

Improving the quality of the air across the borough is at the heart of the Councils Climate Change Strategy.

3.6 Every year an Annual Status Report is submitted to the Department for Environment, Food and Rural Affairs (DEFRA) detailing the current position regarding air quality within the Borough.

A copy is attached as Appendix 1.

3.7 In summary, air quality is monitored in 20 locations within Rossendale. There are 2 areas where pollution from vehicles has been higher than the health based objective for nitrogen dioxide (NO_2). These are:

- Manchester Road, Haslingden
- Bacup Road, Rawtenstall

As a result, AQMAs were declared in 2013 and action plans have been written to deal with the pollution.

3.8 Work completed or in progress to improve air quality includes:

COMPLETED

- In early 2019 the emerging Local Plan for the borough 2019-20134 was submitted to the Secretary of State for examination
- In March 2019 a planning group was set up to try and move forward with a rail link to Rossendale
- In April 2019 the council had a meeting with Highways England who discussed their new document titled ‘Strategy to Improve Air Quality ‘
- The Council supported National Clean Air day on 20th June 2019 and promoted it on social media channels
- In September 2019 the Council declared a Climate Emergency with the aim to become carbon neutral by 2030
- In September 2019 the latest section of the East Lancashire Cycleway Valley of Stone old railway tunnels at Stacksteads opened up to provide a safe off-road link for walkers and cyclists
- In November 2019 the Council hosted a discovery workshop developing and electric vehicle strategy plan hosted by Electric Blue. The session was open to the public

IN PROGRESS

- In July 2019 the old bus station which was located in the centre of the Rawtenstall Air Quality Management Area was demolished which should lead to an improvement in the air quality along Bacup Road during 2020/21
- Public electric charge points where installed and operational in Rossendale funded by Lancashire County Council.
- Further EV charge points will be installed on council owned sites by Dec 2020
- Work in progress to procure EV's for use by staff

4. RISK

4.1 There are no specific risk issues for members to consider arising from this report.

5. FINANCE

5.1 Any future financial implications arising will have to be assessed separately as part of the Council's budget setting and resource allocations

6. LEGAL

6.1 All legal implications are covered in the body of the report.

7. POLICY IMPLICATIONS AND CONSULTATION CARRIED OUT

7.1 Consultation has taken place with statutory officers.

8. CONCLUSION

8.1 Work to identify air quality problems will continue to be a priority for the Council's Public Protection Unit. However, success in improving the air that we breathe relies on action by a wide range of organisations and individuals. This includes transport providers, Lancashire County Council and internal departments. The improvement in air quality is an integral part of the Councils Climate Change Strategy and actions to reduce the council's carbon footprint will have a subsequent beneficial impact on the quality of the air that we breath.

No background papers

Appendix 1

Rossendale
BOROUGH COUNCIL

2020 Air Quality Annual Status Report (ASR)

In fulfilment of Part IV of the Environment Act 1995 Local Air Quality Management

September 2020

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Report Reference number	ASR2020
Date	September 2020

Executive Summary: Air Quality in Our Area

Air Quality in Rossendale Borough Council

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. Additionally, air pollution particularly affects the most vulnerable in society: children and older people, and those with heart and lung conditions. There is also often a strong correlation with equalities issues, because areas with poor air quality are also often the less affluent areas[1,2].

The annual health cost to society of the impacts of particulate matter alone in the UK is estimated to be around £16 billion[3].

The main issue for air pollution in Rossendale is with nitrogen dioxide which comes from road vehicle emissions. Nitrogen dioxide levels are measured across the borough at 20 non-automatic (passive) diffusion tube locations. There are two air quality management areas in the valley which were declared in 2013.

The government's current limit for the annual mean is 40 µg/m^3. During 2019 the air quality objective was breached at only one location which was outside the air quality management areas. This is tube 20 and the annual average was 46.6 µg/m^3 which has shown a slight decrease from 2018 when it was 47.9 µg/m^3. In 2019 three diffusion tubes were relocated into this area but all three tubes showed levels within the current limit. Tube 12 was 34.9 µg/m^3 , tube 18 was 27.9 µg/m^3 and tube 19 was 21.9 µg/m^3 . These results show that the air quality exceedance at tube 20 is more localised so because of this for 2020 monitoring purposes two of those tubes have been relocated closer to tube 20.

The air quality in the two air quality management areas was below the annual mean which is positive news and which will hopefully continue.

Actions to Improve Air Quality

A wide variety of things have happened in Rossendale during 2019 to improve and incorporate air quality which are summarised here.

[1] Environmental equity, air quality, socioeconomic status and respiratory health, 2010
[2] Air quality and social deprivation in the UK: an environmental inequalities analysis, 2006
[3] Defra. Abatement cost guidance for valuing changes in air quality, May 2013

In January 2019 Transport for the North produced its Strategic Transport Plan

https://transportforthenorth.com/70-b-blueprint-transform-north-economy/
https://transportforthenorth.com/onenorth/

In February 2019 the historic town hall building on Bacup Road was re-opened following extensive demolition and restoration of parts. This opens up the previous canyon that trapped air pollution along Bacup Road.

http://www.rossendalenews.org.uk/historic-town-hall-officially-re-opened-after-renovation-works/

In February 2019 the Council was successful in its joint bid to the Department for Transport for four new taxi charging points in Rossendale

http://www.rossendalenews.org.uk/green-progress-for-taxi-trips-in -rossendale/

In March 2019 the long awaited work on the new bus station started
http://www.rossendalenews.org.uk/ceremony-marks-progress-on-bus-station/

Photograph of the new bus station under construction in March 2019

In early 2019 the emerging Local Plan for the borough 2019-20134 was submitted to the Secretary of State for examination https://www.rossendale.gov.uk/localplan

The link to the Sustainability Appraisal and Strategic Environmental Assessment of the Rossendale Borough Council local plan is here
https://www.rossendale.gov.uk/downloads/file/14783/sustainability_appraisal_2018

In March 2019 a planning group was set up to try and move forward with a rail link to Rossendale
http://www.rossendalenews.org.uk/rail-link-on-track-as-planning-group-set-up/

In April 2019 the council had a meeting with Highways England who discussed their new document titled 'Strategy to Improve Air Quality ' which is available here

https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/634933/N160081_Air_Quality_Strategy_Final_V18.pdf

The Council supported National Clean Air day on 20th June 2019 and promoted it on social media channels.

The Council received a call from Highways England in July 2019 asking us to include two extra diffusion tubes at specific locations around the A56 in Haslingden. We agreed but their request was later withdrawn.

Also in July 2019 the old bus station which was located in the centre of the Rawtenstall Air Quality Management Area was demolished which should lead to an improvement in the air quality along Bacup Road

http://www.rossendalenews.org.uk/part-demolition-of-old-rawtenstall-bus-station-to-take-place-this-weekend/

In September 2019 the Council declared a Climate Emergency with the aim to become carbon neutral by 2030

http://www.rossendalenews.org.uk/4422-2/

Also in September 2019 the latest section of the East Lancashire Cycleway Valley of Stone old railway tunnels at Stacksteads opened up to provide a safe off-road link for walkers and cyclists

http://www.rossendalenews.org.uk/council-leader-delight-at-opening-of-new-cycleway/

In November 2019 the Council hosted a discovery workshop developing and electric vehicle strategy plan hosted by Electric Blue. The session was open to the public

http://www.rossendalenews.org.uk/council-leading-the-charge-for-electric-cars/

Also in November 2019 the new relocated bus station opened to the public. There are new traffic lights on this section of Bacup Road which will hopefully deter through vehicles from using Bacup Road as using Bocholt Way will now be more efficient and better for the environment. The work on this section of road finished in July 2019 when it was one way for a while and people commented that a one way system seemed to ease congestion. It's not been converted long term into one way but at least the addition of traffic lights will hopefully deter through traffic.

https://www.lancs.live/news/lancashire-news/rawtenstalls-much-anticipated-new-bus-17302090

Photograph of the new bus station on Bacup Road Rawtenstall which opened in November 2019

By the end of the year the first public electric charge points where installed and operational in Rossendale funded by Lancashire County Council. There are located at Kay Street Rawtenstall, top of Deardengate Haslingden and King Street Bacup.

This year also saw major supermarkets start to install electric charge points in customer car parks in Rossendale.

Photograph of the new electric charge points on Kay Street Rawtenstall

Conclusions and Priorities

Generally, the air quality is improving in the two AQMAs and the council will be looking at revocation of the AQMAs in the near future, if the level continues to fall.

The area we are going to have to focus on again in 2020 is the Grane Road area of Haslingden as again tube 20 showed an exceedance in 2019 of 46.6 µg/m^3. It has however slightly reduced from the 2018 figure of 47.8 µg/m^3

Two more tubes have been re-located into this area to give us a better understanding of the air quality levels in 2020 and will be reported on in the 2021 annual status report.

Rossendale Borough Council's priorities for the coming year are regenerating Rossendale, providing responsive and value for money local services and a clean and green Rossendale.

Local Engagement and How to get Involved

Thinking about air pollution on a worldwide or even country scale can be daunting because as individuals we can often feel insignificant. Yet if we all reduce the amount of fuel we use and the number of chemicals used at home, we will improve the quality of the air that we breathe and help the global and local problem. We can all contribute to improving the air quality by:

- Using public transport more
- Reducing car use and doing more car sharing https://liftshare.com/uk/community/sharedwheels
- Changing to an electric vehicle see https://www.gov.uk/plug-in-car-van-grants
- Cycling and walking where possible
- Using less chemicals in the home to reduce the toxic load on your internal air quality
- Not having garden bonfires and only burning smokeless fuel on domestic stoves as the whole of Rossendale is a smoke control area (except for a few outlying rural properties) see https://smokecontrol.defra.gov.uk/index.php

There is no local air quality action group to the knowledge of the writer however there is an active Clean Air Parents Network public Facebook group.

Client Earth are activist lawyers committed to securing a healthy planet. Their website is https://www.clientearth.org/

Further information on air quality and air pollution forecasts can be found on the DEFRA website UK Air Quality Information Resource following this link https://uk-air.defra.gov.uk/

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1 Local Air Quality Management

This report provides an overview of air quality in Rossendale Borough Council during 2019. It fulfils the requirements of Local Air Quality Management (LAQM) as set out in Part IV of the Environment Act (1995) and the relevant Policy and Technical Guidance documents.

The LAQM process places an obligation on all local authorities to regularly review and assess air quality in their areas, and to determine whether or not the air quality objectives are likely to be achieved. Where an exceedance is considered likely the local authority must declare an Air Quality Management Area (AQMA) and prepare an Air Quality Action Plan (AQAP) setting out the measures it intends to put in place in pursuit of the objectives. This Annual Status Report (ASR) is an annual requirement showing the strategies employed by Rossendale Borough Council to improve air quality and any progress that has been made.

The statutory air quality objectives applicable to LAQM in England can be found in Table E.1 in Appendix E.

2 Actions to Improve Air Quality

2.1 Air Quality Management Areas

Air Quality Management Areas (AQMAs) are declared when there is an exceedance or likely exceedance of an air quality objective. After declaration, the authority must prepare an Air Quality Action Plan (AQAP) within 12-18 months setting out measures it intends to put in place in pursuit of compliance with the objectives.

A summary of the two AQMAs declared by Rossendale Borough Council in 2013 can be found in Table 2.1. Further information related to AQMAs, including maps of AQMA boundaries are available online at https://www.rossendale.gov.uk/info/210168/environment/10763/air_quality_in_rossendale or https://uk-air.defra.gov.uk/aqma/list. Alternatively, see Appendix D: Map(s) of Monitoring Locations and AQMAs, which provides for a map of air quality monitoring locations in relation to the AQMAs and the locations across the borough.

Table 2.1 – Declared Air Quality Management Areas

AQMA Name	Date of Declaration	Pollutants and Air Quality Objectives	City / Town	One Line Description	Is air quality in the AQMA influenced by roads controlled by Highways England?	Level of Exceedance (maximum monitored/modelled concentration at a location of relevant exposure)				Action Plan		
						At Declaration		Now		Name	Date of Publication	Link
AQMA 1 Haslingden	08/01/2013	NO2 Annual Mean	Haslingden	An area comprising a number of residential properties on Haslingden Road	Yes	43	µg/m^3	32.3	µg/m^3	Air quality action plan	July 2016	https://www.rossendale.gov.uk/downloads/file/14091/air_quality_action_plan
AQMA 2 Rawtenstall	08/01/2013	NO2 Annual Mean	Rawtenstall	An area comprising residential property on Bacup Road	Yes	43	µg/m^3	32.3	µg/m^3	Air quality action Plan	July 2016	https://www.rossendale.gov.uk/downloads/file/14091/air_quality_action_plan

				Rawtenstall								

☒ **Rossendale Borough Council confirm the information on UK-Air regarding their AQMA(s) is up to date**

2.2 Progress and Impact of Measures to address Air Quality in Rossendale Borough Council

Defra's appraisal of last year's ASR concluded that the report was well structured, detailed and provided most of the information specified in the guidance. It commented that an overall map of the AQMAs would be a welcome addition and these have been attached in Appendix D. Also it noted that focus should be on DT20 to investigate the exceedance which has been done by relocating two diffusion tubes closer to it.

Rossendale Borough Council has taken forward a number of direct measures during the current reporting year of 2019 in pursuit of improving local air quality, see below. Details of all measures completed, in progress or planned are set out in Table 2.2.

Rossendale Borough Council expects the following measures to be completed over the course of the next reporting year: Further development of electric vehicle charging points within the borough. Procurement electric pool car for use of staff, application of a grant through Connecting east Lancashire for e-bikes for staff use. Rossendale Borough Council's priorities for the coming year in relation to climate change are efficient energy consumption, sustainable transport, working together in partnership and waste and the wider environment.

The principal challenges and barriers to implementation that Rossendale Borough Council anticipates facing are continuing reliance of the public on vehicle use for short journeys.

Rossendale Borough Council anticipates that the measures stated above on page I and in Table 2.2 will achieve continued compliance in both AQMAs.

As the County Council Lancashire lead on public health and have the responsibility for Highways and here's and update from them about their contribution to local air quality management during 2019:

Lancashire County Council Activity Update for Local Air Quality Management for the Annual Report

In Lancashire, the strongest evidence we have concerning the population health impacts of air pollution comes from Public Health England's Public Health Outcomes Framework. This Framework estimates 'the fraction of adult mortality attributable to particulate air pollution ($PM_{2.5}$)' each year. It shows that, while the overall mortality rate

from particulate air pollution in Lancashire-12 (4.0%) is lower than the England average (5.2%), air pollution is still a significant public health issue for the county.

Working with district councils, Lancashire County Council has an important role to play in taking action to reduce these health impacts of air pollution. Responsible for transport planning, network management, highway maintenance, public health and procuring local vehicle fleets, there are a number of ways LCC can support local and county wide efforts to improve air quality. In summary, the following activities are underway or in development:

1. Encouraging the use of sustainable forms of travel

- Lancashire's cycling and walking strategy, Actively Moving Forward, sets out an ambitious plan for increasing the number of people walking and cycling in the county by 2028. Through improving and increasing access to cycling and walking infrastructure, alongside training and promotional activities, it aims to significantly increase the amount of cycling and walking people do across the county.
- As part of Lancashire's cycling and walking strategy, work has now commenced on developing Local Cycling and Walking Infrastructure Plans (LCWIPs) for the five Lancashire Highway and Transport Masterplan areas. The Plans will include a network plan for cycling and walking infrastructure and a prioritised list of schemes for delivery over short, medium and long term timeframes. These plans will be used to support future infrastructure decisions and access new funding schemes as they become available.
- Connecting East Lancashire is a 'smarter travel choices' campaign designed to encourage healthier and greener ways of travelling in East Lancashire. A dedicated team of Business Travel Planners work with individuals and organisations across east Lancashire to support a shift towards more sustainable and active forms of travel.
- The Road Safety Team work with schools, workplaces and the community to encourage safe and sustainable modes of travel. Initiatives for schools are promoted though the Safer Travel Moodle and include: a series of cycling and walking safety training programmes; guidance and resources for teachers to encourage safe and active travel; and support for creating travel plans.

2. Supporting the transition to low emission vehicles

- The County Council is working with BP Chargemaster to deliver 150 electric vehicle charge points across the County. The charging network will be accessible to drivers

from all over the country, and will support local and national efforts to increase the number of drivers purchasing electric vehicles.

- The County Council is supporting six district councils with a low emission taxi infrastructure scheme. Funded by the Office for Low Emission Vehicles, the scheme will provide taxi drivers with access to 24 new rapid electric vehicle charge points across the six districts. This, alongside a series of promotional activities and suggested regulatory changes, is designed to produce a transition towards more low emission taxi vehicles across Lancashire.

3. Creating cleaner, healthier road networks

- Work to develop the next Local Transport Plan (LTP4) for Lancashire, Blackpool and Blackburn with Darwen is now underway. The Public Health team has submitted an evidence base to the process, highlighting transport related health challenges affecting the population of Lancashire and making recommendations about how local transport planning policy can make a contribution to addressing these. Air quality is one of the key themes of the evidence base and will be an identified priority in LTP4. The local Highways and Transport Masterplans will be refreshed to align with the priorities of LTP4, which will provide an opportunity to identify longer-term network solutions that address issues in AQMAs and have a positive impact on air quality generally.

- The Lancaster City Centre Movement Strategy is looking at how vehicular, public transport and pedestrian walking movements can be improved across the city. A key facet of the study is to examine what improvements can be implemented to prioritise public transport, reduce severance, improve air quality and effectively make the city centre a more welcoming environment for people. The intention is for a similar approach to be adopted as part of future Highways and Transport Masterplans.

- The County Council's vehicle fleet will be fitted with a driver behaviour tracking system to monitor and influence driver behaviour. The aim of the tracking system is to improve driver performance, reducing fuel costs, road accidents and vehicle emissions.

4. Embedding air quality into policy

- The County Council works with district planners to ensure air quality is a key consideration of Local Plans, alongside wider public health issues. It supports district councils in developing policies that seek to ensure new developments do not contribute to increasing levels of air pollutants and that requirements for appropriate mitigation are in place.

- The County Council, as part of its highways input into planning applications, actively encourages measures that aim to promote sustainable forms of travel. Working under the direction of the National Planning Policy Framework, the Council seeks measures that facilitate cycling and walking, increase the use of public transport and provide access to electric vehicle charge points. The County Council also seeks funding from developers, through section 106 contributions, to support existing bus services or to provide new bus services suitable to serve development sites once their built.

- The County Council is working with Lancaster and Birmingham Universities to develop evidence based guidance for the use of green infrastructure as an approach to mitigating the health impacts of road transport emissions. The guidance will enable organisations to introduce the most effective infrastructure at the most appropriate sites. In time, there may be opportunities for further projects around this work.

5. Raising awareness and increasing engagement

- The Lancashire Insight website provides information on the sources and health impacts of air pollution. Webpages include a Summary of Emissions Data, Monitoring of Air Quality and Health Impacts and an Air Quality and Health Dashboard.

- The County Council is the process of developing a clean air programme for schools. The toolkit will include: guidance and support for schools on developing a clean air strategy; lesson plans, activities and resources for teachers; provision of LCC's cycling and walking programmes; and resources for delivering a Clean Air Day event and creating a clean air banner.

Table 2.2 – Progress on Measures to Improve Air Quality

Measure No.	Measure	EU Category	EU Classification	Date Measure Introduced	Organisations involved	Funding Source	Key Performance Indicator	Reduction in Pollutant / Emission from Measure	Progress to Date	Estimated / Actual Completion Date	Comments / Barriers to implementation
1	Limit Council fleet use of Bacup Road for non-essential access	Traffic Management	Other	January 2019	Local Authority Fleet Management	NA	NA	NA	Borough Council fleet now do not use Bacup Road unless servicing the properties	January 2019	NA
2	No through access to HGVs or LDVs along Bacup Road unless deliveries	Traffic Management	Other	NA	NA	NA	NA	NA	NA	NA	Not deemed enforceable so this option will not be pursued
3	Road signage amended to reprioritise use of Bocholt Way and deprioritise Bocholt Way	Traffic Management	Other	Completed	Lancashire County Council	NA	NA	Reduced vehicle emissions	Completed September 2018	Completed September 2018	Completed September 2018
4	School travel plans to encourage alternative modes	Promoting Travel Alternatives	School Travel Plans	NA	Lancashire County Council	NA	NA	NA	NA	NA	Not pursued as the air quality in this area is again below actionable levels for another year
5	No through signage at road entry points to Haslingden	Traffic Management	Other	NA	Lancashire County Council	NA	NA	NA	NA	NA	Not pursued as the air quality in this area is again below actionable levels for another year
6	Apply Public Spaces Protection Orders to restrict idling on	Traffic Management	Anti-idling enforcement	NA	Lancashire County Council	NA	NA	NA	NA	NA	Not pursued as the air quality in this area is again below actionable levels for another year

	Manchester Road										

2.3 $PM_{2.5}$ – Local Authority Approach to Reducing Emissions and/or Concentrations

As detailed in Policy Guidance LAQM.PG16 (Chapter 7), local authorities are expected to work towards reducing emissions and/or concentrations of $PM_{2.5}$ (particulate matter with an aerodynamic diameter of 2.5µm or less). There is clear evidence that $PM_{2.5}$ has a significant impact on human health, including premature mortality, allergic reactions, and cardiovascular diseases.

Rossendale Borough Council do not currently measure for $PM_{2.5}$ however all the actions listed on page i and 2.2 will be reducing $PM_{2.5}$ as well as NO_2.

3 Air Quality Monitoring Data and Comparison with Air Quality Objectives and National Compliance

3.1 Summary of Monitoring Undertaken

3.1.1 Automatic Monitoring Sites

This section sets out what monitoring has taken place and how it compares with objectives.

Rossendale Borough Council undertook no automatic (continuous) monitoring at any sites during 2019.

3.1.2 Non-Automatic Monitoring Sites

Rossendale Borough Council undertook non- automatic (passive) monitoring of NO_2 at 20 sites during 2019. Table A.1 in Appendix A shows the details of the sites.

Maps showing the location of the monitoring sites are provided in Appendix D. Further details on Quality Assurance/Quality Control (QA/QC) for the diffusion tubes, including bias adjustments and any other adjustments applied (e.g. “annualisation” and/or distance correction), are included in Appendix C.

3.2 Individual Pollutants

The air quality monitoring results presented in this section are, where relevant, adjusted for bias[4], “annualisation” (where the data capture falls below 75%), and distance correction[5]. Further details on adjustments are provided in Appendix C.

3.2.1 Nitrogen Dioxide (NO_2)

Table A.2 in Appendix A compares the ratified and adjusted monitored NO_2 annual mean concentrations for the past 5 years with the air quality objective of 40µg/m^3. Note that the concentration data presented in Table A.2 represents the concentration at the location of the monitoring site, following the application of bias adjustment and annualisation, as required (i.e. the values are exclusive of any consideration to fall-off with distance adjustment).

[4] https://laqm.defra.gov.uk/bias-adjustment-factors/bias-adjustment.html
[5] Fall-off with distance correction criteria is provided in paragraph 7.77, LAQM.TG(16)

For diffusion tubes, the full 2019 dataset of monthly mean values is provided in Appendix B. Note that the concentration data presented in Table B.1 includes distance corrected values, only where relevant.

The graphs in Figure A.1 show the trends in NO_2 concentrations over the last 5 years of all the tubes. AQMA 1 which has diffusion tubes 3,5,6,7,8 and 9 are consistently below the 40µg/m^3 and the Council will be looking to revoke it in the future if the trend continues.

AQMA 2 which has diffusion tubes 1,4,13,14,15,16 and 17 has slightly higher levels of NO_2 but again all the tubes are under the 40µg/m^3 limit and have been for a number of years (with the exception of diffusion tube 17 which exceeded in 2018 and seems to be an anomaly)

The remaining tubes numbered 2, 10, 11, 12, 18, 19 and 20 which are measuring NO_2 at various locations across the borough are all under the 40µg/m^3 with the exception of diffusion tube 20 on Grane Road which will have additional tubes located near it during 2020 to get a better understanding of the air quality in that area.

3.2.2 Particulate Matter ($PM_{2.5}$)

Rossendale Borough Council do not currently measure for particulate matter $PM_{2.5}$

3.2.3 Sulphur Dioxide (SO_2)

Rossendale Borough Council do not measure for SO_2.

Appendix A: Monitoring Results

Table A.1 – Details of Non-Automatic Monitoring Sites

Site ID	Site Name	Site Type	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Pollutants Monitored	In AQMA?	Distance to Relevant Exposure (m) (1)	Distance to kerb of nearest road (m) (2)	Tube collocated with a Continuous Analyser?	Height (m)
DT1	93-95 Bacup Road Rawtenstall	Roadside	381394	422756	NO_2	YES AQMA 2	5	1	NO	1.8
DT2	235 Newchurch Road Stacksteads	Roadside	385579	421855	NO_2	No	0	4	NO	1.8
DT3	349 Manchester Road Haslingden	Roadside	379153	422234	NO_2	Yes AQMA 1	0	4	NO	1.8
DT4	83 Bacup Road Rawtenstall	Roadside	381325	422740	NO_2	Yes AQMA 2	20	3.5	NO	1.8
DT5	377 Manchester Road Haslingden	Roadside	379209	422171	NO_2	Yes AQMA 1	0	3	NO	1.8
DT6	359 Manchester Road Haslingden	Roadside	379175	422213	NO_2	YES AQMA 1	0	4	NO	1.8

DT7	364-366 Manchester Road Haslingden	Roadside	379193	422216	NO_2	YES AQMA 1	0	2	NO	1.8
DT8	Road sign near roundabout	Roadside	379197	422213	NO_2	YES AQMA 1	4	2	NO	1.8
DT9	363 Manchester Road Haslingden	Roadside	379183	422200	NO_2	YES AQMA 1	0	4	NO	1.8
DT10	2 Market Place Edenfield	Roadside	379983	419219	NO_2	NO	0	3.5	NO	1.8
DT11	632 Bacup Road Waterfoot	Roadside	383506	421766	NO_2	NO	0	2	NO	1.8
DT12	Rose Mount Grane Road Haslingden	Roadside	377528	422529	NO_2	NO	0	3	NO	1.8
DT13	30/32 Bacup Road Rawtenstall	Roadside	381377	422756	NO_2	YES AQMA 2	0	2	NO	1.8
DT14	24 Bacup Road Rawtenstall	Roadside	381358	422754	NO_2	YES AQMA 2	0	2	NO	1.8
DT15	22 Bacup Road Rawtenstall	Roadside	381350	422754	NO_2	YES AQMA 2	0	2	NO	1.8
DT16	2A Bacup Road Rawtenstall	Roadside	381161	422754	NO_2	YES AQMA 2	0	6	NO	1.8
DT17	1-3 Bacup Road Rawtenstall	Roadside	381121	422725	NO_2	YES AQMA 2	8	2	NO	1.8
DT18	222 Grane Road Haslingden	Roadside	378094	422560	NO_2	NO	0	3	NO	1.8

DT19	323 Grane Road Haslingden	Roadside	377761	422514	NO_2	NO	0	3	NO	1.8
DT20	264 Grane Road Haslingden	Roadside	377899	422488	NO_2	NO	0	2	NO	1.8

Notes:

(1) 0m if the monitoring site is at a location of exposure (e.g. installed on the façade of a residential property).

(2) N/A if not applicable.

Table A.2 – Annual Mean NO_2 Monitoring Results

Site ID	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Site Type	Monitoring Type	Valid Data Capture for Monitoring Period (%) (1)	Valid Data Capture 2019 (%) (2)	NO_2 Annual Mean Concentration (µg/m^3) (3) (4)				
							2015	2016	2017	2018	2019
DT1	381394	422756	Roadside	Diffusion Tube	100	100	33	32.9	36.9	33.3	32
DT2	385579	421855	Roadside	Diffusion Tube	100	100	28	31.4	28.7	30.2	29.3
DT3	379153	422234	Roadside	Diffusion Tube	100	100	23	35.2	34.9	31.9	27.3
DT4	381325	422740	Roadside	Diffusion Tube	100	100	NA	29.9	35.4	27.8	27.6
DT5	379209	422171	Roadside	Diffusion Tube	67	67	35	31.8	38.6	31.8	35.8
DT6	379175	422213	Roadside	Diffusion Tube	100	100	36	33.5	39.2	31.2	30.8
DT7	379193	422216	Roadside	Diffusion Tube	83	83	38	33.5	NA	**44.1**	32.3
DT8	379197	422213	Roadside	Diffusion Tube	100	100	29	27.1	31.4	27.6	25.7
DT9	379183	422200	Roadside	Diffusion Tube	100	100	36	30.2	38.7	33.7	31.6
DT10	379983	419219	Roadside	Diffusion Tube	100	100	36	34.6	NA	24.5 new location	25.6
DT11	383506	421766	Roadside	Diffusion Tube	100	100	32	**31.6**	NA	31.4 new location	34.9
DT12	377528	422529	Roadside	Diffusion Tube	100	100	35	**37.1**	NA	23.9 new location	34.9
DT13	381377	422756	Roadside	Diffusion Tube	92	92	24	**44.2** new location	**42.4**	**40.9**	32.2
DT14	381358	422754	Roadside	Diffusion Tube	92	92	36	38.9	**41.5**	36.8	31.9

DT15	381350	422754	Roadside	Diffusion Tube	100	100	37	**42.6**	**46.2**	39.6	32.2
DT16	381161	422754	Roadside	Diffusion Tube	100	100	22	30.6	33.8	28.4	26.6
DT17	381121	422725	Roadside	Diffusion Tube	58	58	33	30.6	NA	**47.2**	34.7
DT18	378094	422560	Roadside	Diffusion Tube	100	100	23	22.7	23.6	18.2 new location	27.9
DT19	377761	422514	Roadside	Diffusion Tube	100	100	27	30.1	30.4	24.6 new location	21.9
DT20	377899	422488	Roadside	Diffusion Tube	92	92	22	20.4	22.7	**47.8**	**46.6**

☒ **Diffusion tube data has been bias corrected**

☒ **Annualisation has been conducted where data capture is <75%**

☒ **Reported concentrations are those at the location of the monitoring site (bias adjusted and annualised, as required), i.e. prior to any fall-off with distance adjustment**

Notes:

Exceedances of the NO_2 annual mean objective of 40µg/m^3 are shown in **bold**.

NO_2 annual means exceeding 60µg/m^3, indicating a potential exceedance of the NO_2 1-hour mean objective are shown in **bold and underlined.**

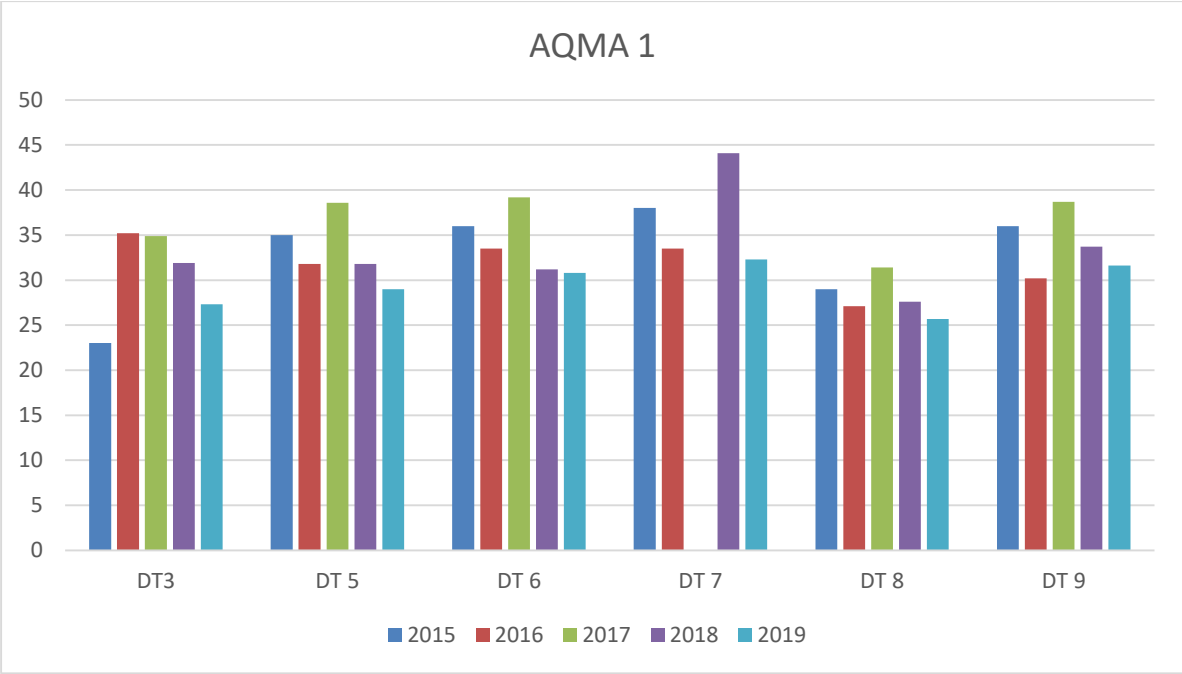
(1) Data capture for the monitoring period, in cases where monitoring was only carried out for part of the year.

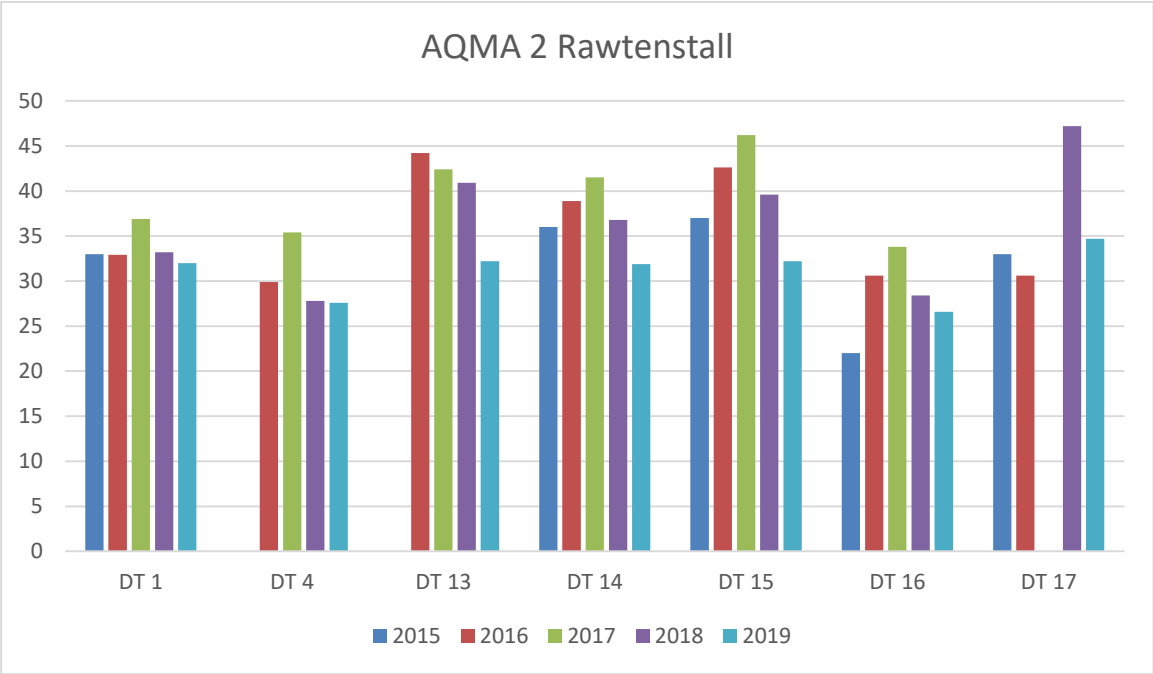
(2) Data capture for the full calendar year (e.g. if monitoring was carried out for 6 months, the maximum data capture for the full calendar year is 50%).

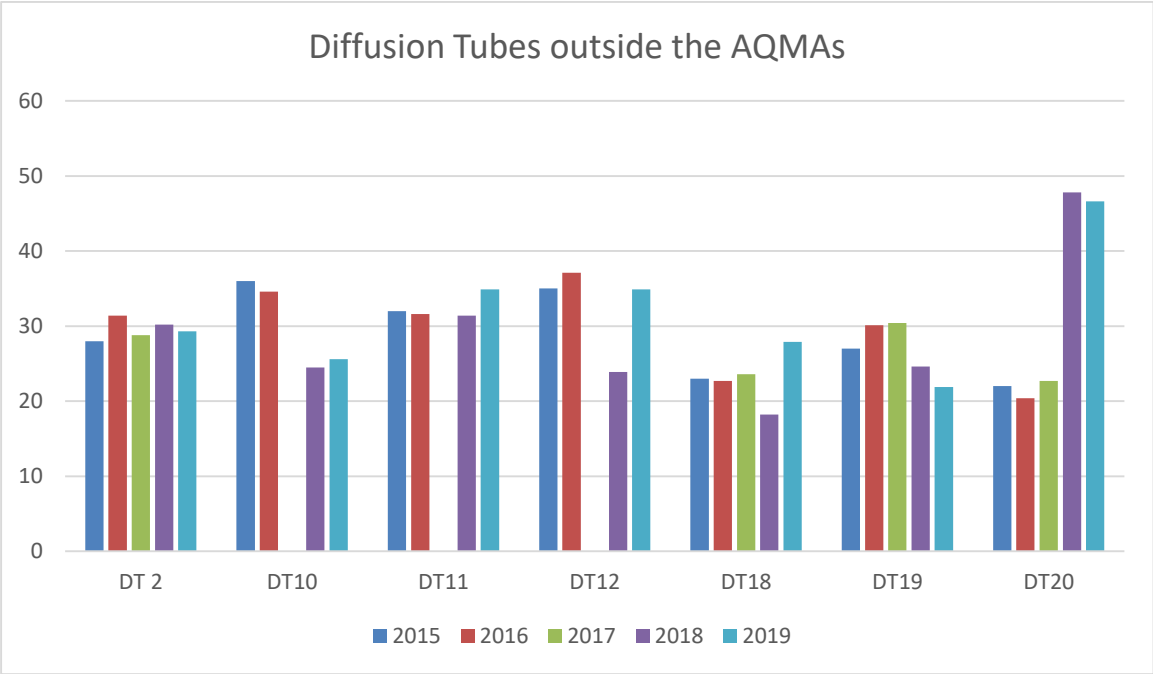
(3) Means for diffusion tubes have been corrected for bias. All means have been "annualised" as per Boxes 7.9 and 7.10 in LAQM.TG16 if valid data capture for the full calendar year is less than 75%. See Appendix C for details.

(4) Concentrations are those at the location of monitoring and not those following any fall-off with distance adjustment.

Figure A.1 – Trends in Annual Mean NO_2 Concentrations




AQMA 2 Rawtenstall
50
45
40
35
30
25
20
15
10
5
0
DT 1
DT 4
DT 13
DT 14
DT 15
DT 16
DT 17
2015
2016
2017
2018
2019


Diffusion Tubes outside the AQMAs
60
50
40
30
20
10
0
DT 2
DT10
DT11
DT12
DT18
DT19
DT20
2015
2016
2017
2018
2019

Appendix B: Full Monthly Diffusion Tube Results for 2019

Table B.1 - NO_2 Monthly Diffusion Tube Results - 2019

Site ID	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	NO_2 Mean Concentrations (µg/m^3)														
			Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual Mean		
															Raw Data	Bias Adjusted (0.75) and Annualised (1)	Distance Corrected to Nearest Exposure (2)
DT 1	381394	422756	54.1	51.7	42.7	41.5	44.9	35.0	31.3	34.6	42.8	44.0	45.3	48.2	43.0	32	-
DT 2	385579	421855	36.0	40.3	33.6	50.1	38.5	38.4	32.2	29.0	37.5	46.2	51.7	37.3	39.2	29.3	-
DT 3	379153	422234	50.5	49.3	35.6	31.1	28.5	23.1	23.7	30.4	37	43.2	44	40.7	36.4	27.3	-
DT 4	381325	422740	41.6	43.1	37.8	32.6	25.5	27.5	25.9	41.6	33.9	38.2	53.6	40.3	36.8	27.6	-
DT 5	379209	422171	Missing	53.8	missing	35.4	31	33.1	missing	32.1	missing	43.3	38.3	42.4	38.7	35.8	-
DT 6	379175	422213	49.1	57.1	37.9	37.2	31.6	34.8	35.1	36.8	39.5	44.8	48.6	44.3	41.4	30.8	-
DT 7	379193	422216	57.1	50.4	30.6	42.6	31.4	missing	32.9	29.9	missing	50	60.7	44.8	43.0	32.3	-
DT 8	379197	422213	42.2	46.1	30.4	26.2	25.7	26.9	25.7	26.5	31	40.4	47.7	41.3	34.2	25.7	-
DT 9	379183	422200	50.3	54.3	40.5	36.8	36.3	32.4	35.6	36.9	42.2	42.4	49.5	47.7	42.1	31.6	-

DT 10	379983	419219	43.2	47.5	30	28.7	26.5	29.3	25.8	24.4	31.5	36.1	47.3	38.7	34.1	25.6	-
DT 11	383506	421766	60.6	48.7	47.3	50.8	47.3	45.6	41.6	29.7	40.6	48.7	60.8	36.3	46.5	34.9	-
DT 12	377528	422529	52.7	44.2	35.2	31.2	26.6	29.4	27.4	28	33.5	38.9	41.8	36.9	34.7	34.9	-
DT 13	381377	422756	38.7	missing	54.1	36.7	26.9	33.4	35.9	35.9	46.9	51.6	61.3	51	42.9	32.2	-
DT 14	381358	422754	61.9	51.2	44.4	30	28.4	32.5	missing	30.9	42	47.2	58	41.9	42.6	31.9	-
DT 15	381350	422754	39.9	52.7	47.9	35.4	27.8	34.8	34.6	29.8	45.7	50	64.1	51.7	42.9	32.2	-
DT 16	381161	422747	27.8	50.3	40.7	26.5	22	28.4	27.8	33	36	40.4	43.3	48.6	35.4	26.6	-
DT 17	381121	422725	53.6	missing	missing	39.2	33.7	37.9	missing	43	missing	missing	63.6	52.9	46.3	34.7	-
DT 18	378094	422560	40.9	40.4	28.6	48.7	29.7	34.9	26.1	28.9	30.8	44.8	49	44.8	37.3	27.9	-
DT 19	377761	422514	37.8	32	25.4	35.4	23.4	26	20.1	18.3	27.3	34.2	44.2	26.5	29.2	21.9	-
DT 20	377899	422488	68	75	missing	66.9	56.2	58.1	29.4	51.5	63.4	71.9	80.2	62.8	62.1	**46.6**	-

☒ **Local bias adjustment factor used**

☒ **National bias adjustment factor used**

☒ **Annualisation has been conducted where data capture is <75%**

☒ **Where applicable, data has been distance corrected for relevant exposure in the final column**

Notes:

Exceedances of the NO_2 annual mean objective of 40µg/m^3 are shown in **bold**.

NO_2 annual means exceeding 60µg/m^3, indicating a potential exceedance of the NO_2 1-hour mean objective are shown in **bold and underlined.**

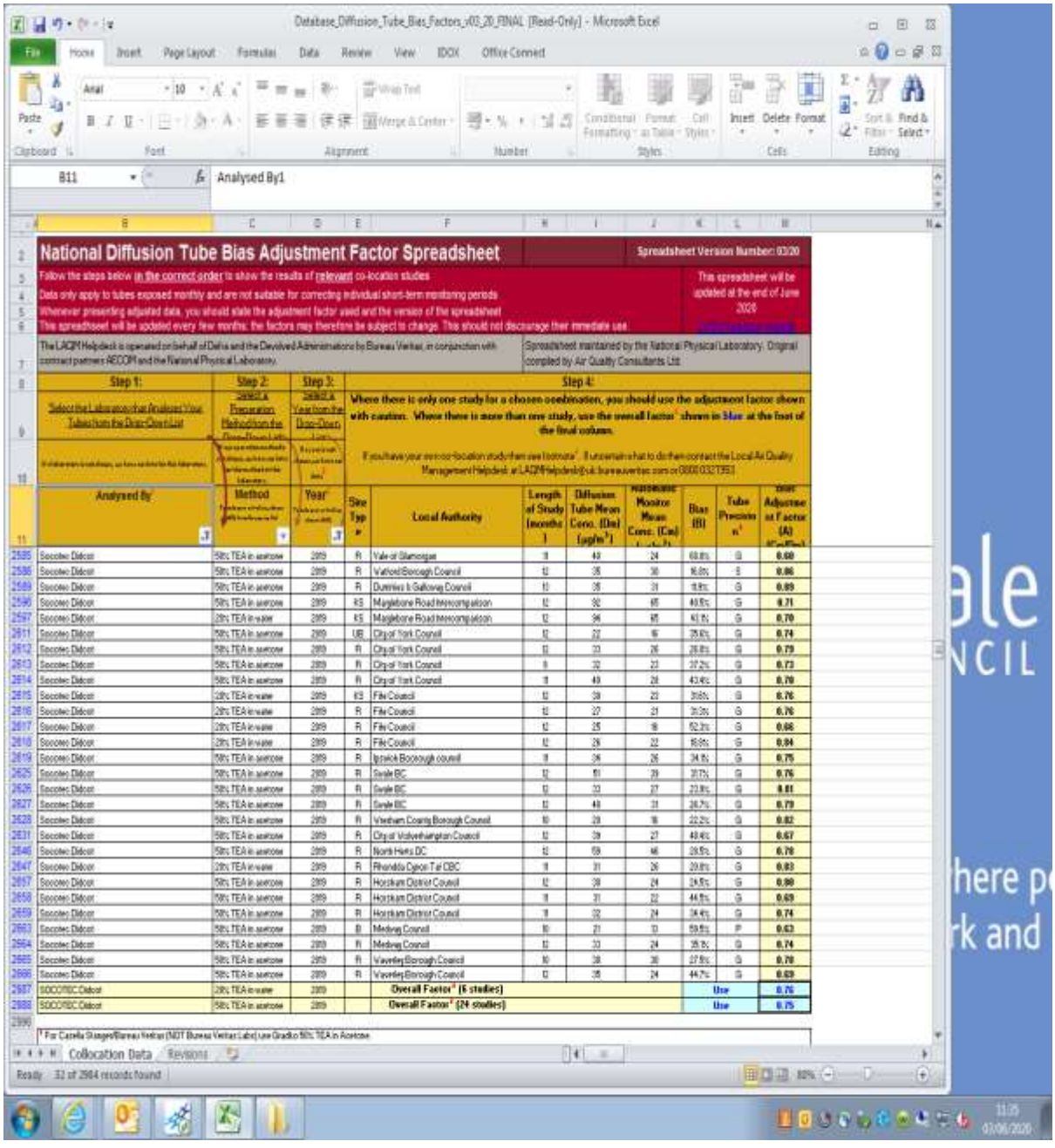
(1) See Appendix C for details on bias adjustment and annualisation.

(2) Distance corrected to nearest relevant public exposure.

Appendix C: Supporting Technical Information / Air Quality Monitoring Data QA/QC

The diffusion tubes are supplied and analysed by Socotec Didcot. The preparation method used is 50% TEA in Acetone. ESG follows the procedures set out in the Harmonisation Practical Guidance and participates in both AEA solution and The Workplace Analysis Scheme for Proficiency (WASP) tube analysis trials. In the last round of WASP the laboratory was rated 'good'.

The bias adjustment factor being applied to the annual mean for the diffusion tubes is 0.75. This came from the Review and Assessment Helpdesk website V03/20 spreadsheet.



Annualisation

Tube 5 only had 67% data capture so needed to be annualised and here is the working out using Preston and Salford Eccles data from the national network for background urban figures

Start date	End date	B1 Preston	DT5	B1 when D1 available
10 January 2019	6 February 2019	36.9		
6 February 2019	6 March 2019	29.0	53.8	29.0
6 March 2019	3 April 2019	20.3		
3 April 2019	1 May 2019	20.0	35.4	20.0
1 May 2019	5 June 2019	18.3	31.0	18.3
5 June 2019	2 July 2019	14.9	33.1	14.9
2 July 2019	7 August 2019	12.6		
7 August 2019	3 September 2019	14.0	32.1	14.0
3 September 2019	2 October 2019	20.4		
2 October 2019	6 November 2019	25.1	43.3	25.1
6 November 2019	4 December 2019	34.5	38.3	34.5
4 December 2019	8 January 2020	26.0	42.4	26.0
Average		22.6Am	36.5M	22.7Pm

Am/Pm 22.6/22.7= 0.99

Start date	End date	B1 Salford Eccles	DT5	B1 when D1 is available
10 January 2019	6 February 2019	38.8		
6 February 2019	6 March 2019	31.7	53.8	31.7
6 March 2019	3 April 2019	22.9		
3 April 2019	1 May 2019	24.0	35.4	24.0
1 May 2019	5 June 2019	18.2	31.0	18.2
5 June 2019	2 July 2019	17.9	33.1	17.9
2 July 2020	7 August 2020	14.9		
7 August 2020	3 September 2020	16.4	32.1	16.4
3 September 2019	2 October 2019	22.4		
2 October 2019	6 November 2019	28.5	43.3	28.5
6 November 2019	4 December 2019	39.2	38.3	39.2
4 December 2019	8 January 2019	28.7	42.4	28.7
Average		25.3Am	36.5M	25.6Pm

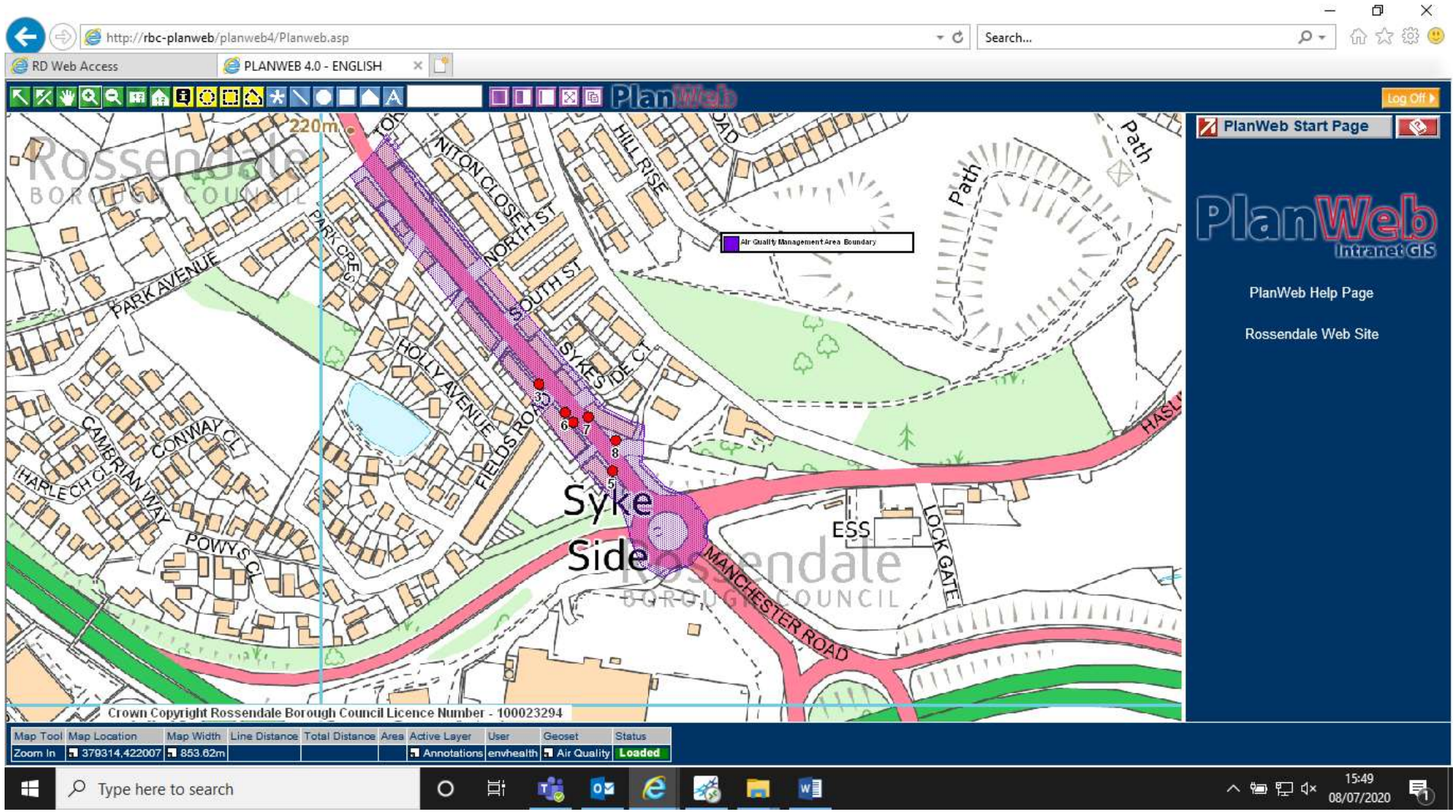
Am/Pm 25.3/25.6 =0.98

The average of 0.99 and 0.98 = Ra 0.98

Annualised average of D1 =M x Ra= 36.5 x 0.98 = 35.8

Appendix D: Map(s) of Monitoring Locations and AQMAs

AQMA 1 and diffusion tubes 3,5,6,7, 8 and 9


http://rbc-planweb/planweb4/Planweb.asp
Search...
RD Web Access
PLANWEB 4.0 - ENGLISH
PlanWeb
Log Off
220m
Air Quality Management Area Boundary
PARK AVENUE
PARK CRES
NITON CLOSE
NORTH ST
SOUTH ST
HILL RISE
Path
SYKESIDE CT
HOLLY AVENUE
FIELDS ROAD
CONWAY CL
CAMBRIAN WAY
HARLECH CL
POWYS CL
Syke Side
ESS
LOCK GATE
MANCHESTER ROAD
Rossendale BOROUGH COUNCIL
Crown Copyright Rossendale Borough Council Licence Number - 100023294
PlanWeb Start Page
PlanWeb Intranet GIS
PlanWeb Help Page
Rossendale Web Site
Map Tool | Map Location | Map Width | Line Distance | Total Distance | Area | Active Layer | User | Geoset | Status
Zoom In | 379314,422007 | 853.62m | | | | Annotations | envhealth | Air Quality | Loaded
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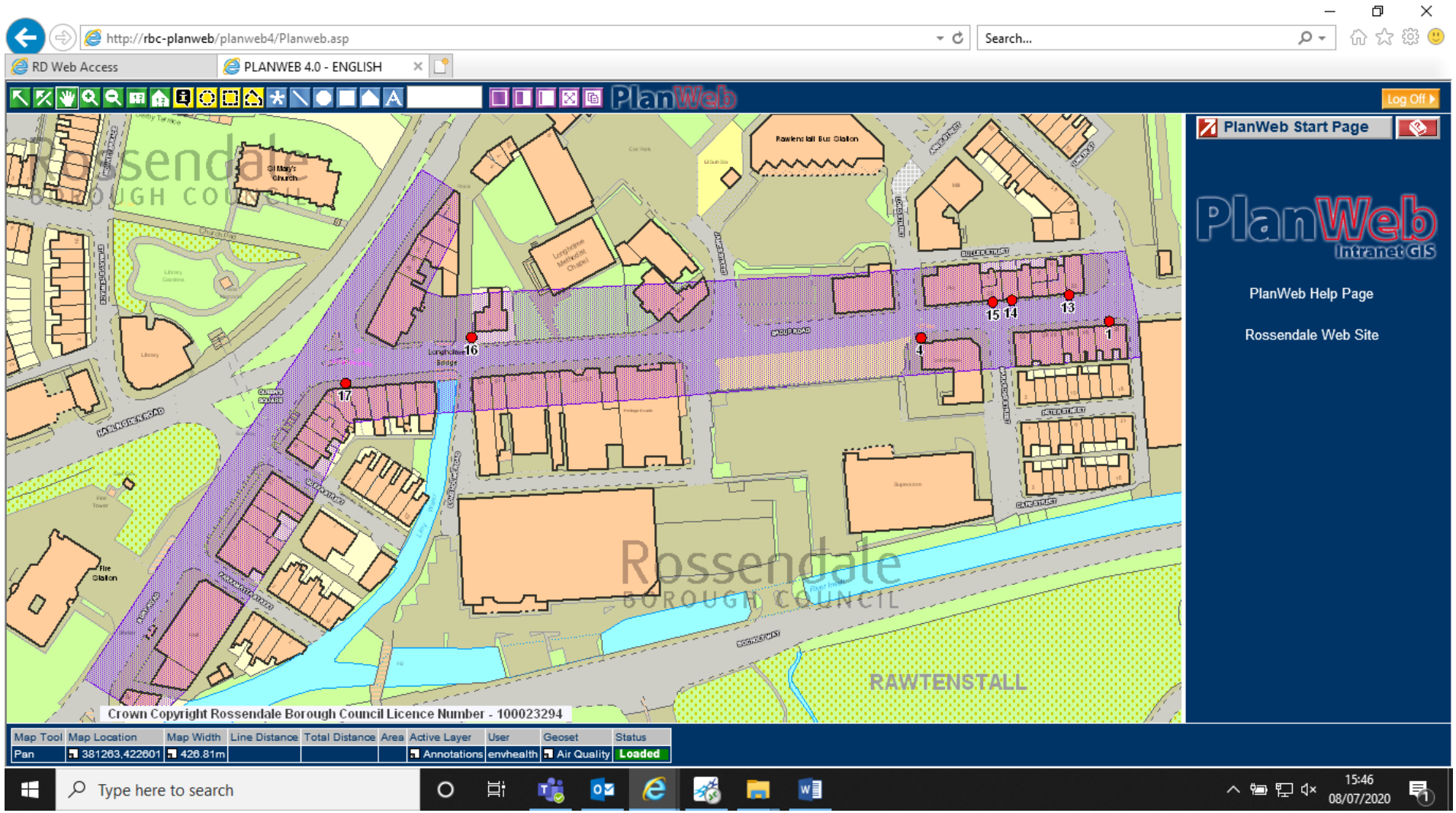
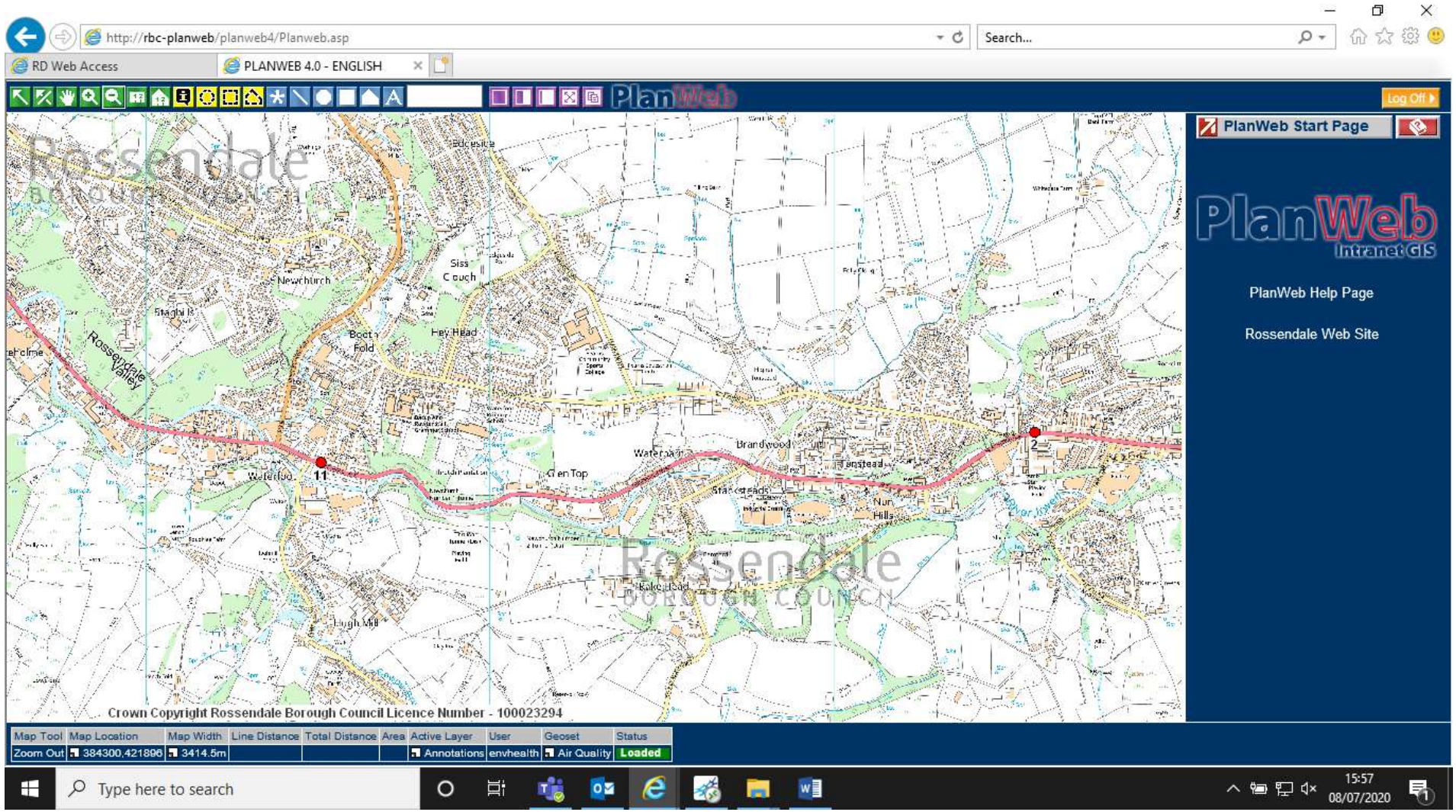
08/07/2020

AQMA 2 and location of diffusion tubes 1,4,13,14,15,16 and 17



Tubes 2 and 11 (outside the AQMAs)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Log Off
PlanWeb Start Page
PlanWeb Intranet GIS
PlanWeb Help Page
Rossendale Web Site
Crown Copyright Rossendale Borough Council Licence Number - 100023294
Map Tool | Map Location | Map Width | Line Distance | Total Distance | Area | Active Layer | User | Geoset | Status
Zoom Out | 384300,421896 | 3414.5m | | | | Annotations | envhealth | Air Quality | Loaded
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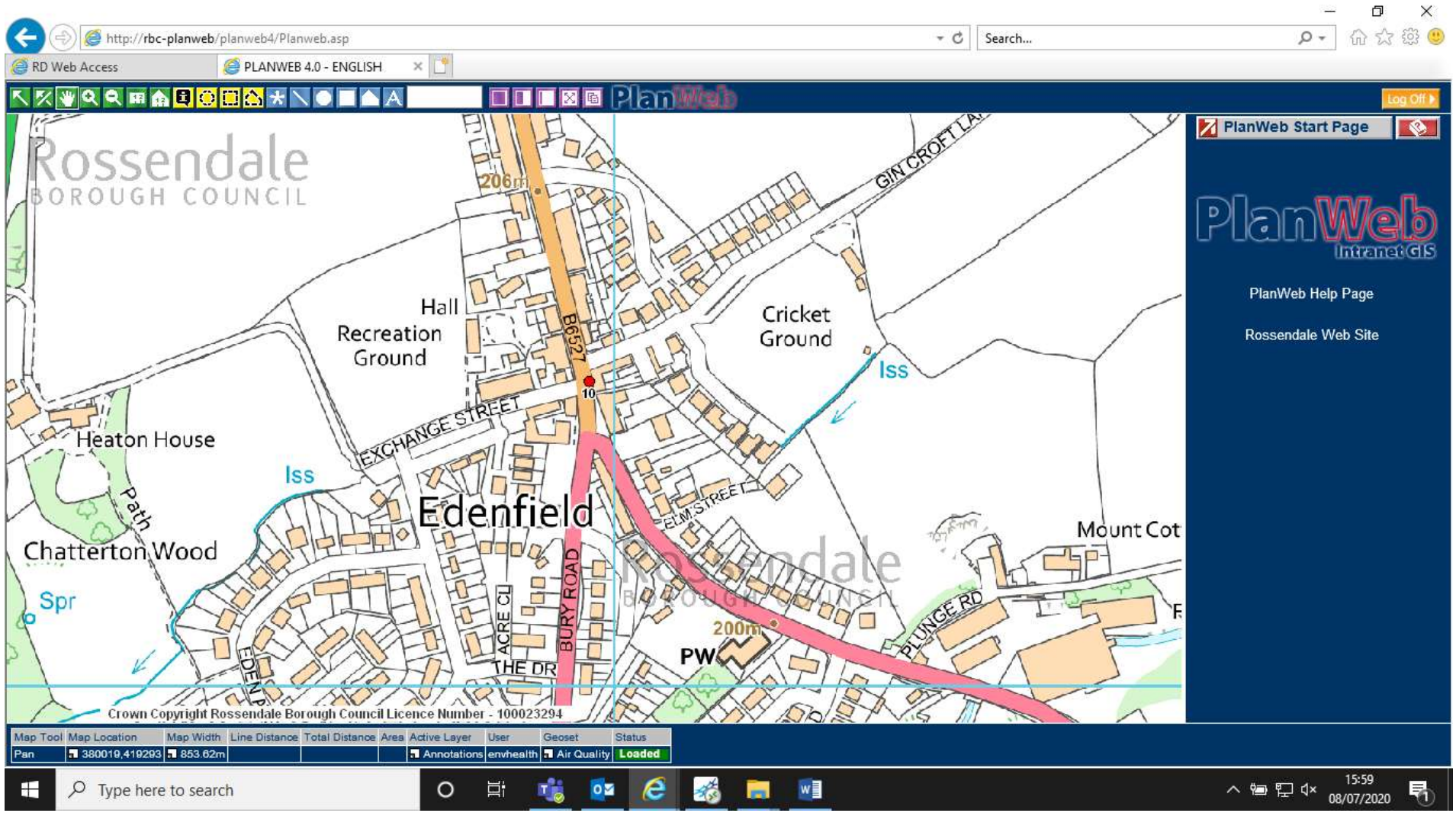
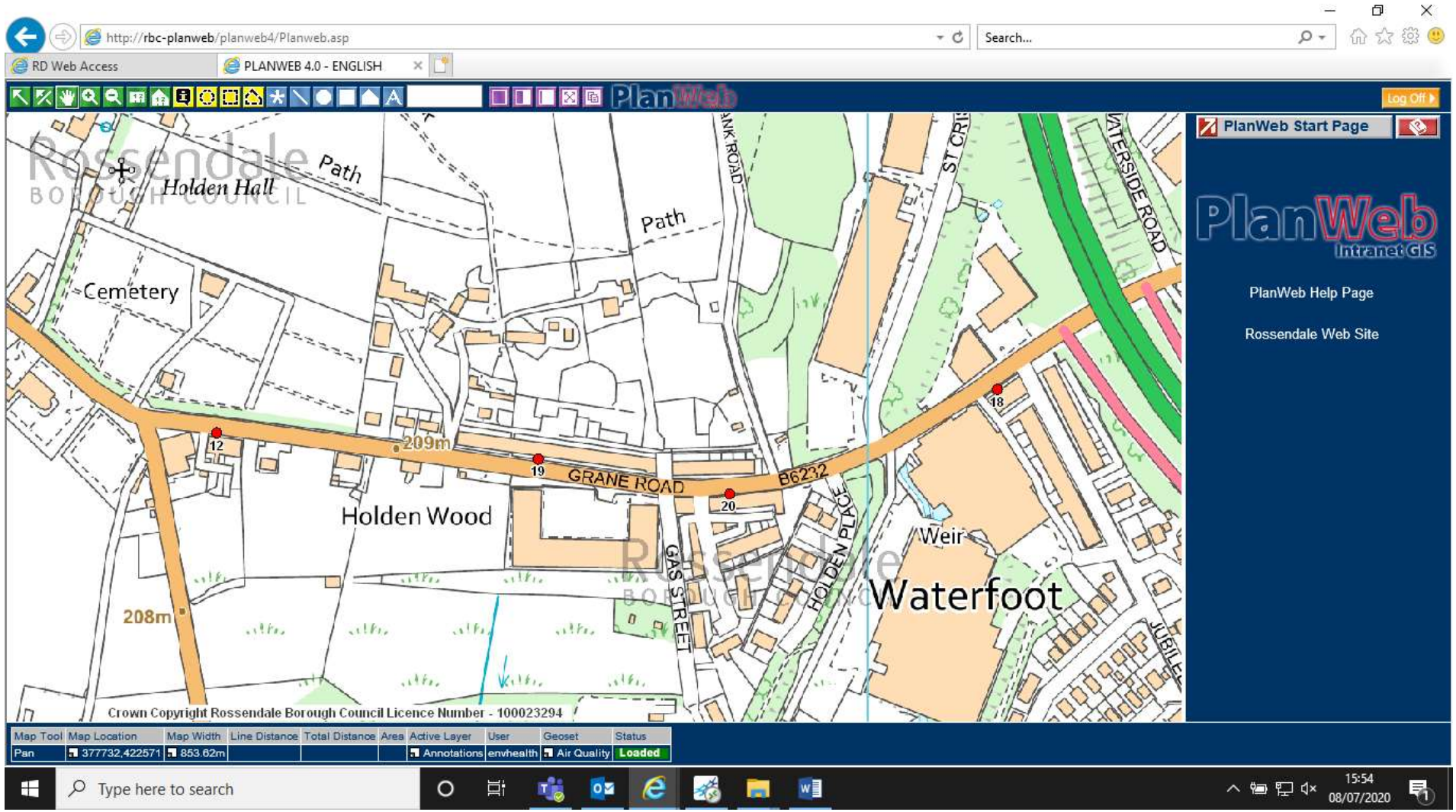
08/07/2020

Diffusion Tube 10 (outside the AQMAs)



Diffusion Tubes 12, 18, 19 and 20 in Haslingden (outside the AQMAs)


http://rbc-planweb/planweb4/Planweb.asp
Search...
RD Web Access
PLANWEB 4.0 - ENGLISH
PlanWeb
Log Off
PlanWeb Start Page
PlanWeb Intranet GIS
PlanWeb Help Page
Rossendale Web Site
Holden Hall
Path
Path
Cemetery
Holden Wood
GRANE ROAD
B6232
209m
208m
12
19
20
18
Weir
Waterfoot
GAS STREET
HOLDEN PLACE
Crown Copyright Rossendale Borough Council Licence Number - 100023294
Map Tool | Map Location | Map Width | Line Distance | Total Distance | Area | Active Layer | User | Geoset | Status
Pan | 377732,422571 | 853.62m | | | | Annotations | envhealth | Air Quality | Loaded
Type here to search
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08/07/2020

Appendix E: Summary of Air Quality Objectives in England

Table E.1 – Air Quality Objectives in England

Pollutant	Air Quality Objective[6]	
	Concentration	Measured as
Nitrogen Dioxide (NO_2)	200 µg/m^3 not to be exceeded more than 18 times a year	1-hour mean
	40 µg/m^3	Annual mean
Particulate Matter (PM_{10})	50 µg/m^3, not to be exceeded more than 35 times a year	24-hour mean
	40 µg/m^3	Annual mean
Sulphur Dioxide (SO_2)	350 µg/m^3, not to be exceeded more than 24 times a year	1-hour mean
	125 µg/m^3, not to be exceeded more than 3 times a year	24-hour mean
	266 µg/m^3, not to be exceeded more than 35 times a year	15-minute mean

[6] The units are in microgrammes of pollutant per cubic metre of air (µg/m^3).

Glossary of Terms

Abbreviation	Description
AQAP	Air Quality Action Plan - A detailed description of measures, outcomes, achievement dates and implementation methods, showing how the local authority intends to achieve air quality limit values'
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
ASR	Air quality Annual Status Report
Defra	Department for Environment, Food and Rural Affairs
DMRB	Design Manual for Roads and Bridges – Air quality screening tool produced by Highways England
EU	European Union
FDMS	Filter Dynamics Measurement System
LAQM	Local Air Quality Management
NO_2	Nitrogen Dioxide
NO_x	Nitrogen Oxides
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 or less
QA/QC	Quality Assurance and Quality Control
SO_2	Sulphur Dioxide