Mid Devon District Council
Annual Status Report 2020

Bureau Veritas

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2020 Air Quality Annual Status Report (ASR)

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

August 2020

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Executive Summary: Air Quality in Our Area

Air Quality in Mid Devon

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 source of air pollution in the district is road traffic emissions from major roads, notably the M5, A373, A361, A377, A396 and A3126. Traffic emissions are a major source of nitrogen dioxide (NO_2) and particulate matter of different size fractions (PM_{10} and $PM_{2.5}$). Other pollution sources such as commercial, industrial and domestic sources also make a contribution to pollutant concentrations.

Currently there are two Air Quality Management Areas (AQMAs) declared within the district. Both of these are related to traffic emissions; the Crediton AQMA has been designated for exceedances of the NO_2 annual mean objective as well as the PM_{10} 24-hour mean objective, and the Cullompton AQMA has been designated for exceedances of the NO_2 annual mean objective. All current AQMAs can be viewed online at https://uk-air.defra.gov.uk/aqma/local-authorities?la_id=283, details of the AQMAs are provided in Table 2.1 and boundary maps are presented in Appendix D.

A review of monitoring locations across the district was undertaken in 2019, following feedback from the 2018 ASR. Given the extent of new developments across the region and that a number of monitoring locations had been reporting below the NO_2 AQS objective for a few years, eight new diffusion tube monitoring sites were introduced and nine sites were removed. Additionally, as discussed in the 2019 ASR, there have been no exceedances of the PM_{10} AQS objective for the past five years. The council have therefore decommissioned the CM1 monitoring site and are going to revoke the AQMA for PM_{10}. PM_{10} will continue to be monitored within the district as four new indicative

[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

sensors were installed in late 2019 that monitor NO_2, PM_{10} and $PM_{2.5}$. The data at these locations will be reported on following a full year of monitoring data in next year's ASR, information on the site locations and latest data can be found here: https://www.airqualityengland.co.uk/local-authority/?la_id=225.

A review of the current AQAP was undertaken by Ricardo Energy and Environment in 2019 (draft) that considers: the relationship with the wider District and County Council policies; barriers to achieving current measures; a development/feasibility study; funding sources; and recommendations for improving the current AQAP. Recommendations proposed by the review included revoking the Crediton AQMA for PM_{10} and the establishment of an indicative monitoring network using AQMesh Sensors across the district.

Overall, monitored concentrations of NO_2 in 2019 have decreased across the district when compared to 2018. The eight additional monitoring sites in 2019 have also all reported significantly below the AQS Objective of 40µg/m^3. The maximum reporting location of the new sites was DT18 at 27.7µg/m^3. There were no exceedances of the AQS Objective in 2019 across all locations. There were two sites that reported within 10% of the NO_2 AQS objective, DT12 in the Cullompton AQMA (37.8µg/m^3) and DT20 in the Crediton AQMA (37.9µg/m^3), both of these sites have declined from 2018, where they exceeded the annual mean AQS objective. As both of these sites were within 10% of the objective, it is recommended that both the Cullompton and Crediton AQMA remain in place for NO_2.

Over the past five years, NO_2 annual mean concentrations in Cullompton AQMA (Site IDs DT8 – DT14) have remained relatively consistent for most sites, however 2019 reported a decrease across all locations. The bias adjustment factor changed from 0.89 to 0.83 between 2018 and 2019, therefore exacerbating the reduction in concentrations, however raw data also showed the same downward trend in monitored concentrations. The same trend was observed for NO_2 annual mean concentrations in Crediton AQMA (Site IDs DT16 – DT20). Less comparison is possible due to the relocation of multiple tubes, however all tubes with monitoring data available in 2018 have reported lower concentrations in 2019.

As no annual mean concentrations in excessive of 60µg/m^3 were monitoring within 2019, exceedances of the 1-hour mean objective are unlikely to have occurred at any monitoring locations.

Actions to Improve Air Quality

There is continued success in the ECO stars scheme; as of August 2019 there were 64 members in the ECO stars scheme (16 local) covering a total of 2,809 vehicles. The aim is to expand the scheme across Devon.

Additionally, two EV charging units have been installed at each leisure centre across the district, further units are to be installed to create an EV charging network across Mid Devon.

Other actions include a number of car share schemes that have been implemented within new developments; a consultation was held with Town Councils to provide a co-ordinated approach to enforcement of anti-idling and illegal parking; improved footpath and cycleway links between Cullompton town centre to Kingsmill Industrial Estate and Cromwells Meadow to the leisure centre in Crediton.

A review of the monitoring in the region was undertaken in 2019 by Ricardo Energy and Environment, whereby diffusion tubes were relocated to give greater understanding of air quality across the district.

To improve air quality in Cullompton, Mid Devon and Devon County Council (DDC) are supporting the implementation of a relief road that will link the B3181/Millenium Way roundabout with the Duke Street/Meadow Lane junction and is located between Cullompton town centre to the west and the M5 to the east.

Conclusions and Priorities

The NO_2 concentrations reported across the district have decreased from the last reporting year. There were no exceedances of the AQS Objective, however there were two sites that reported within 10% of the objective, DT12 in the Cullompton AQMA (37.8µg/m3) and DT20 in the Crediton AQMA (37.9µg/m3). Both of these sites have declined from 2018, where they exceeded the AQS objective.

The following actions are considered to be key priorities for Mid Devon District Council in 2020:

- Revoke the Crediton AQMA, declared for exceedance of the PM_{10} 24-hour mean AQS Objective, while retaining designation for the NO_2 annual mean;

- Continue to review the monitoring locations across the district to ensure a good understanding, particularly following a full year of data from the new AQMesh sensors; and
- Continue to deliver measures set out in the Mid Devon District Council AQAP (2017) alongside the additional measures that were added following the recent review of the AQAP.

Local Engagement and How to get Involved

Due to the main source of air pollution within Mid Devon being from transport sources, the public can get involved in helping reduce the release of air pollution and thus improving air quality within the district by looking at alternative means of travel. The following are possible alternatives to private travel that would contribute to improving air quality within the district:

Walk or cycle:

- Replacing a car journey by walking or cycling helps reduce traffic and traffic emissions. It has proven health and mental health benefits too. Walking or cycling to school can improve a child's concentration and makes children more alert, fit and healthy.

Take public transport or car share:

- For longer journeys, why not use public transport or car share? Car sharing can help combat congestion and help reduce pollution within urban areas, as well as save you money.

And if you have to use your car:

- Make sure your tyre pressures are correct (low tyre pressure increases fuel use and emissions).
- Think about whether you need to use the air conditioning. Using it increases fuel consumption by up to 30%, whereas driving with windows open only increases it by 5%.
- Using a roof rack on your car can increase fuel consumption by up to 30%. Bicycles are better attached to the back of the car.

- If you need to buy a car, check its fuel economy. With an ultra-low emission vehicle (ULEV) you will use less fuel and produce less exhaust emissions.

Table of Contents

List of Tables

List of Figures

1 Local Air Quality Management

This report provides an overview of air quality in Mid Devon District Council (MDDC) 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 Mid Devon District 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 AQMAs declared by Mid Devon District Council can be found in Table 2.1. Further information related to declared or revoked AQMAs, including maps of AQMA boundaries are available online at https://uk-air.defra.gov.uk/aqma/local-authorities?la_id=161. 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.

The Crediton AQMA is currently designated for exceedances of the NO_2 annual mean objective as well as the PM_{10} 24-hour mean objective. However, as discussed in the 2019 ASR, there have been no exceedances of the PM_{10} AQS objective for the past five years. The council have therefore decommissioned the monitoring site and are going to revoke the AQMA for PM_{10}. It is worth noting that PM_{10} will continue to be monitored within the District and four new indicative sensors were installed in 2019. The data at these locations will be reported on following a full year of monitoring data in next year's ASR.

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
Crediton AQMA	08/11/2014	NO_2 Annual Mean	Crediton	The majority of the built up area of Crediton.	YES	52.7	µg/m^3	37.9	µg/m^3	Mid Devon District Council Air Quality Action Plan	2017	https://www.middevon.gov.uk/media/345645/aqap-mid-devon-district-council-2017.pdf
Crediton AQMA	08/11/2014	PM_{10} 24 Hour Mean	Crediton	The majority of the built up area of Crediton.	YES	>35	Exceedances	8 as of 2018	Exceedances	Mid Devon District Council Air Quality Action Plan	2017	https://www.middevon.gov.uk/media/345645/aqap-mid-devon-district-council-2017.pdf

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
Cullompton AQMA	11/12/2006	NO_2 Annual Mean	Cullompton	An area encompassing the entire built-up area of the town of Cullompton.	YES	55.8	µg/m^3	37.4	µg/m^3	Mid Devon District Council Air Quality Action Plan	2017	https://www.middevon.gov.uk/media/345645/aqap-mid-devon-district-council-2017.pdf

Note: The NO_2 concentrations shown in the table above are from the monitoring sites, within the AQMAs, where the highest concentration was reported in the year of declaration and the current year. The maximum concentration will not necessarily be at the same monitoring site for both years. In 2019, the greatest exceedance was at Site DT20 in the Crediton AQMA and Site DT12 in the Cullompton AQMA

☒ **Mid Devon District 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 Mid Devon District Council

Defra's appraisal of last year's ASR concluded:

1. *Trends are clearly presented and discussed and a robust comparison with air quality objectives is provided.*
2. *The diffusion tube mapping is comprehensive and clearly demonstrates the monitoring network. AQMA boundaries are also clearly shown on the map.*
3. *Distance corrections were conducted for sites not representative of relevant exposure, example calculations could be provided in future reports.*
4. *The report makes links to Public Health Outcomes Framework.*
5. *The principal challenges and barriers to implementation of the Action Plan measures that Mid Devon District Council faces are clearly outlined. Which measures are currently active and funded are also made clear.*
6. *Comments from the previous appraisal are discussed and addressed.*
7. *The review of the monitoring strategy the Council is undertaking is encouraged due to the extent of new development proposed and the number of monitoring locations showing consistent low levels of NO_2.*
8. *The suggestion to move CM1 automatic monitor to another area is also supported.*
9. *It is agreed the Council should consider the revocation of the Crediton AQMA – declared for exceedance of the PM_{10} 24-hour mean AQO, as there has been no reported exceedance of either the 24-hour or annual mean PM_{10} AQO within the past five years, while retaining the Crediton AQMA for the NO_2 annual mean.*

To address the appraisal comments, the distance-correction calculation has been included in Appendix C. Additionally, given the extent of new development proposed in the district, a review of the NO_2 passive monitoring locations across the district was undertaken in 2018, and this led to the creation of eight new monitoring locations and removal of nine monitoring locations that have been reporting below the AQS objective for a few years. This will ensure that the Mid Devon District Council monitoring programme remains effective in identifying areas of potential concern and facilitating accurate mitigation measures to provide safe levels of air quality to its residents. The CM1 monitor was decommissioned following reporting consistently low results for PM_{10}, four new locations have been identified and indicative AQMesh monitors have been installed to monitor both PM_{10}, $PM_{2.5}$ and NO_2. Finally, Mid Devon District Council

is going to revoke the Crediton AQMA for PM_{10} following a review of the air quality monitoring across the region reporting consistently low concentrations. The Crediton AQMA will remain in place for NO_2.

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

More detail on these measures can be found in the respective Action Plan[4]. A review of Mid Devon's AQAP was undertaken by Ricardo Energy and Environment in 2019. Key completed measures are:

- A number of car share schemes have been delivered in new developments;
- Marketing campaign to reduce high street parking/promote car parks/raise awareness;
- Co-ordinated approach to enforcement of anti-idling and illegal parking, a consultation was held with Town Councils;
- Installation of two EV charging units at each leisure centre across the district, further units to be installed to create an EV charging network within Mid Devon;
- Improved footpath and cycleway links between Cullompton town centre and Kingsmill Industrial Estate; Cromwells Meadow to Leisure centre in Crediton; and
- A review of the monitoring in the region was undertaken in 2019 by Ricardo Energy and Environment, whereby diffusion tubes were relocated to give greater understanding of air quality across the district.

Mid Devon expects the following measures to be completed over the course of the next reporting year:

- Mid Devon commissioned an air quality study to analyse the impacts of the proposed Crediton traffic management schemes; and
- Development of Cullompton's Low Emission Strategy to help mitigate the impacts of the significant proposed developments. This will include

[4] https://www.middevon.gov.uk/media/345645/aqap-mid-devon-district-council-2017.pdf

consideration of a neighbourhood plan, development of a relief road, an anti-idling campaign and prevention of illegal parking on Fore street.

Mid Devon's priorities for the coming year are:

- To reduce heavy goods vehicle emissions by expanding the current Eco Stars scheme to all districts within Devon;
- To further improve the Electric Vehicle Charging Network through the installation of units at Council car parks; and
- To continue to monitor Mid Devon's two AQMAs and carry out mitigation strategies that will, in time lead to their revocation

The principal challenges and barriers to implementation that Mid Devon anticipates facing are:

- Stretches of road influenced by Highways England (e.g. stretches of the M5 are within close proximity of the Cullompton and Crediton AQMAs)
- Funding, in particular major infrastructure funding required to deliver the Eastern Relief Road in Cullompton and additional M5 junction

Mid Devon anticipates that the measures stated above and in Table 2.2 will achieve compliance in both the Crediton and Cullompton AQMAs, subject to progression with measures and availability of necessary funding.

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	Community Car sharing schemes	Alternatives to private vehicle use	Car and lift sharing schemes	2017/2018	Mid Devon District Council	Mid Devon District Council	Number of car share schemes delivered in new developments Usage rate	Low	s106 contribution allocated under Air Quality Pending release of funds To be considered for Garden Village s106 contribution allocated under Air Quality	Pending full release of funds and commencement of development	Lengthy Timescale
2	Community run and/or private E-bikes schemes	Alternatives to private vehicle use	Other	2017/2018	Mid Devon in partnership with Town Councils and Communities	Mid Devon in partnership with Town Councils and Communities	E-Bikes accepted and utilised as an alternative mode of transport by residents	Low	s106 contribution allocated under Air Quality Pending release of funds To be considered for Garden Village s106 contribution allocated under Air Quality	Pending securing funding from s106 or other funding source	Funding
3	Secure cycle parking facilities in Town Centres and at key transport hubs	Promoting Travel Alternatives	Promotion of cycling	2018/2019	Mid Devon District Council, Network Rail, Devon County Council	Mid Devon District Council, Network Rail, Devon County Council	Initial facility installed in Crediton	Low	s106 contribution allocated under Air Quality Pending release of funds To be considered for Garden Village s106 contribution allocated under Air Quality	Pending release of s106 funds	
4	Marketing campaign to reduce high street parking/promote car parks/raise awareness	Public Information	Leaflets, social media, internet, street posters	2017/2018	Mid Devon District Council and Town Councils	Mid Devon District Council and Town Councils	Increase in level of awareness of local air quality issues/change in behaviour	Low	s106 contribution allocated under Air Quality Pending release of funds To be considered for Garden Village s106 contribution allocated under Air Quality	2018/2019	Consultation with DCC and Town Councils required
5	Develop EV charging network	Promoting Low Emission Transport	Alternative	2017/2018	Mid Devon District Council	Mid Devon District Council	7 units to be installed across the district in the first phase	Low	2 EV charging units installed at each Leisure centre across the district Further units to be installed pending release of s106 funds – a number of Council owned parking areas are suitable for further installations Included in Local	Ongoing	

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
									Plan strategic developments		
6	Taxi Licensing conditions	Promoting Low Emission Transport	refuelling infrastructure	2017/2018	Mid Devon District Council	Mid Devon District Council	Policy review undertaken to develop ULEV taxi fleet and infrastructure	Low	Existing EURO engine standard emission/vehicle age requirements remain in place. Licensing policy is under review and will include provision of any enhancements	Ongoing	
7	Eastern Relief Road Cullompton and additional M5 junction	Traffic Management	Strategic	2017/2018	Mid Devon / DCC Highways	Mid Devon / DCC Highways	% reduction in traffic flows through Cullompton Reduction in congestion on minor roads	High	Local Plan submission Land allocated and preliminary design work undertaken	Pending funding and adoption of Local Plan	Major infrastructure funding required
8	Coordinated approach to enforcement of anti-idling, illegal parking	Traffic Management	highway improvements	2017/2018	Mid Devon / DCC	Mid Devon / DCC	Improved traffic flow at key pinch points Delivery of awareness raising campaign with drivers	Low	Update due later in 2019 as part of commissioned project to review barriers to progress existing AQAP measures – will include a review of approaches by other LAs		
9	Kingsmill Industrial site traffic management Cullompton Junction 28	Traffic management	Anti-idling enforcement and illegal parking	2017/2018	Mid Devon / DCC Highways	Mid Devon / DCC Highways	Improved traffic flows to/from industrial site	Low	Minor work on the junction has occurred and reports are positive for major transport company's access to motorway. This has resulted in reducing traffic backing up to enter motorway.	Ongoing	
10	Parking and traffic flow measures	Traffic management	Congestion management	2017/2018	Mid Devon / DCC	Mid Devon / DCC	Improved traffic flows Decrease in main street parking Increase use of Mid Devon car parks	Medium	Identified in the Crediton Feasibility Study	Ongoing	Introduces resident car parking rates which is often unfavourable
11	Cullompton/Wellington Rail link feasibility study	Traffic management	Congestion management	2017	Mid Devon and Somerset West and Taunton	Mid Devon and Somerset West and Taunton	Feasibility study completed	Medium	Mid Devon are working with partners to develop a strategic outline business case	Ongoing	
12	ECO Stars fleet management and recognition scheme	Transport Planning and Infrastructure	Public transport improvements-interchanges	Completed	Mid Devon District Council	Mid Devon District Council	% Increase in number of companies in the scheme	Low	As of August 2019 there were 64 members in the scheme (16 local)	Ongoing	

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
			stations and services						covering a total of 2,809 vehicles.		
13	Bus stop infrastructure	Transport Planning and Infrastructure	Vehicle	2017/2018	Mid Devon / DCC	Mid Devon / DCC	Change to mode of transport Increase in patronage	Medium	Early planning is considering a new bus interchange linking with a new railway station. Potential to move Falcon bus stop and incorporate into the Cullompton Relief Road Route.	Pending full release of funds	
14	Review of bus stop locations and routes	Transport Planning and Infrastructure	Public transport improvements-interchanges stations and services	2017/2018	Mid Devon / DCC	Mid Devon / DCC	Improved Traffic flow through centre of towns	Low	Improved bus set down/pick up points are outlined in the Crediton Feasibility study which will impact upon traffic flow (buses holding up general traffic).	2021	Pending agreement with DCC and Bus operators District wide
15	Improving footpath and cycling paths in major towns	Transport Planning and Infrastructure	Cycle and walking network	2017/2018	Town Councils / Mid Devon / DCC	Town Councils / Mid Devon / DCC	Connected pathway network Improved accessibility Reduction in short car journeys	Low	Initial network improvements identified in Neighbourhood plans s106 projects and Crediton Feasibility Study	Ongoing	
16	Road surfacing	Transport Planning and Infrastructure	Consideration given to lower polluting road surfacing within AQMA areas as opportunities arise	2018/2019	DCC	DCC	Areas of existing or new road network resurfaced	Low	A range of road surfaces have been put forward in the Crediton Feasibility study which will slow traffic and reduce pollutants	Ongoing	
17	Mid Devon Local Plan	Policy guidance and development control	Air Quality	Development Management Policies	Mid Devon District Council	Mid Devon District Council	Local Plan adopted	High	Supplementary Planning Document on Air Quality and Development adopted May 2008 COR14 (Cullompton) Promote the removal of through traffic by completing a relief road system and implementing air quality action plan initiatives; COR15 (Crediton) Promote a reduction of traffic on congested streets and improve local air	01/01/2018	

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
									quality by enhancing walking and cycling opportunities around the town, implementing air quality action plan initiatives, promoting improved public transport links and providing a link road between the A377 and Lords Meadow Industrial Area. Proposal to review and update SPD in 2020 – see full report		
18	Culm Valley Garden Village development and major infrastructure projects	Policy Guidance and Development Control	Air Quality Planning and Policy Guidance	2017-21	Mid Devon / DCC Highways	Mid Devon / DCC Highways	Public Health considerations incorporated in Master planning cycle	High	Public Health Devon and Mid Devon Public Health and Regulatory Services are stakeholders in the consultation and are strongly lobbying for measures that will mitigate air pollution such as good walk and cycle routes, electric vehicle infrastructure, good public transport connections to Cullompton/Exeter, open spaces and tree planting. Several key public health/planning documents have been forwarded to the Culm Valley Garden Village Project team.	01/01/2018	
19	Planning Policy DM8 Parking	Policy Guidance and Development Control	Other Policy	2017	Mid Devon District Council	Mid Devon District Council	Standards adopted for electric vehicle infrastructure	Medium	Subject to on-going Local Plan inspection process	Ongoing	
20	Planning Policy DM6 Transport and Air Quality	Policy Guidance and Development Control	Other Policy	2017	Mid Devon District Council	Mid Devon District Council	Low Emission and Transport Assessments completed Travel Plans	Medium	Subject to on-going Local Plan inspection process	Ongonig	
21	Planning Conditions on Tiverton Eastern Urban Extension	Policy Guidance and Development Control	Air Quality Planning and Policy Guidance	2017/2018	Mid Devon District Council	Mid Devon District Council	Air Quality Noise Emissions	N/A	Update requested from Area Planning officer	Ongoing	

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
22	Parking and traffic flow measures	Other Policy	Other Policy	2019	Mid Devon District Council	Mid Devon District Council	More detailed understanding of air quality in the district	N/A	Review phase	Ongoing	
23	Review of current monitoring in region	Policy Guidance and Development Control	Air Quality Planning and Policy Guidance	2019	Mid Devon District Council	Mid Devon District Council	Recommendations on setting targets and emissions reduction ambition for developers	N/A	Review phase	Ongoing	
24	Air quality assessment of Crediton traffic management schemes	Traffic Management	Other	2019	Mid Devon District Council	Mid Devon District Council	Improved traffic flow through centre of Crediton. Improved air quality	High	Planning phase	Ongoing	
25	Development of a Low Emission Strategy (LES) for Cullompton	Policy Guidance and Development Control	Low Emissions Strategy	2019	Mid Devon District Council	Mid Devon District Council	Improved air quality	High	Planning phase	Ongoing	

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.

The Defra 2019 background maps for Mid Devon District Council (2017 based)[5] show that all background concentrations of $PM_{2.5}$ are far below annual mean $PM_{2.5}$ AQS objective limit. The highest concentration is predicted to be 14.3µg/m^3 within the 1km x 1km grid square with the centroid grid reference of 302500, 107500. This grid square is located immediately to the east of Cullompton within close proximity to the M5.

The Public Health Outcomes Framework data tool[6] compiled by Public Heath England quantifies the mortality burden of $PM_{2.5}$ within England on a county and local authority scale. The latest available data shows that the 2018 fraction of mortality attributable to $PM_{2.5}$ pollution in Mid Devon is 3.5%, which is below the South West's average of 4.4% and the national average of 5.2%.

The Council operates a comprehensive section of their website[7] dedicated to air quality where information surrounding the use of bonfires, including a step-by-step guide to dealing with nuisances from persistent bonfire smoke, is accessible and easily digestible for the public.

LAQM.TG(16) Table A.1 Action toolbox presents a list of measures that can be implemented to help reduce concentrations of $PM_{2.5}$. The actions Mid Devon have taken, and will continue to take, have invariably also included benefits for the reduction of $PM_{2.5}$ pollution. Although not designed specifically for the reduction of $PM_{2.5}$, improvements in NO_2 concentrations will lead to a net reduction of $PM_{2.5}$ concentrations from combustion based sources where both pollutants arise. This is apparent for the

[5] Defra Background Mapping data for local authorities (2017-based), available online at https://uk-air.defra.gov.uk/data/laqm-background-maps?year=2017
[6] Public Health Outcomes Framework, Public Health England. data tool available online at https://fingertips.phe.org.uk/profile/public-health-outcomes-framework/data#page/3/gid/1000043/pat/6/par/E12000009/ati/201/are/E07000042/iid/30101/age/230/sex/4/cid/4/page-options/eng-vo-0_eng-do-0_ovw-do-0_cin-ci-4_car-do-0
[7] Mid Devon District Council, Bonfires and smoke nuisance, available online at https://www.middevon.gov.uk/residents/environment/bonfires-and-smoke-nuisance/

measures that are aimed at reducing car usage and also promoting the uptake of electric vehicles.

Mid Devon installed four indicative AQMesh sensors in September/October 2019 that will monitor $PM_{2.5}$, therefore improving understanding of the concentrations across the district. Whilst a full year of data is not yet available, the locations of the monitors and latest data can be found here: https://www.airqualityengland.co.uk/local-authority/?la_id=225.

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

In previous years, Mid Devon District Council undertook automatic (continuous) PM_{10} monitoring at one site; CM1 – Exeter Road, Crediton. The monitoring site reported 23.4µg/m^3 in the 2018 reporting year and had not recorded any exceedances of the AQS objective of 40µg/m^3 for the past five years. Additionally, exceedances of the 24-hour mean had not exceeded the permitted 35 per year for the past five years. The continuous monitor has therefore been decommissioned and there is no data available for 2019.

In replacement of the PM_{10} monitoring site an indicative monitoring network has been established across the district. The monitors are classified as *indicative* as they provide an understanding of the air quality across the district, therefore highlighting any potential pollution hotspots, however they do not comply with EU monitoring legislation. Four AQMesh sensors have been installed to monitor NO_2, PM_{10} and $PM_{2.5}$. These were installed in September/October 2019, therefore annual data is not yet available. Data and locations for the monitors can be viewed online[8] and will be reported in the 2021 ASR following a full year of monitoring.

3.1.2 Non-Automatic Monitoring Sites

Mid Devon District Council undertook non-automatic (passive) monitoring of NO_2 at 20 sites during 2019, this includes eight new monitoring site locations when compared to 2018. Table A.1 in Appendix A presents the details of all of the non-automatic monitoring sites. Following feedback from the appraisal of the 2019 ASR, a comprehensive review of monitoring sites was undertaken in 2018. A number of monitoring locations had reported low NO_2 concentrations for a number of years, therefore these tubes have been relocated to ascertain concentrations in areas that previously have not been monitored. The new locations were chosen to assess proposed new development in the area (e.g. Gerbera way, Cullompton: Future development planned in terms of Garden Village, Uplowman Road: New Housing

[8] https://www.airqualityengland.co.uk/local-authority/?la_id=225

development, Gornhay Orchard: planning proposed from Horsdon garage all the way up to Gornhay orchard, behind Blundells school). A summary of the removed tube locations, new tube locations and changes to the Site IDs from last year's ASR can be found in Appendix C, Table C.1.

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 all adjusted for bias[9] and distance correction[10] where necessary (Site ID DT12). All 2019 diffusion tubes had data capture in excess of 75%, therefore "annualisation" was not required at any sites. Further details on adjustments are provided in Appendix C.

3.2.1 Nitrogen Dioxide (NO_2)

Table A.2 in Appendix A compares the bias adjusted monitored NO_2 annual mean concentrations for the past five 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 (i.e. prior to any correction for distance).

The full diffusion tube 2019 dataset of monthly mean values is provided in Appendix B.

Concentrations of NO_2 are monitored at 20 diffusion tube sites across the district. In addition, four AQ Mesh machines were installed in Crediton and Cullompton during September/October 2019 to monitor NO_2, PM_{10} and $PM_{2.5}$. As a full year of data is not available for 2019, annual summary results have not been reported, but the latest data can be found here: https://www.airqualityengland.co.uk/local-authority/?la_id=225.

A comprehensive review of monitoring locations across the district was undertaken in 2018 that led to the relocation of eight diffusion tube sites and the removal of one further site. The eight new locations were chosen in order to improve understanding of air quality across the district, particularly close to boundaries of the AQMAs. The nine

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

locations that have been discontinued represent locations where reported concentrations of NO_2 had been low for a number of years and the NO_2 annual mean AQS objective had been continually met. Due to the review of monitoring locations, the Site IDs do not align to last year's ASR, a summary of changes is presented in Table C.1.

All 2019 diffusion tubes had sufficient data capture (>75%), therefore annualisation was not required at any sites. There were no exceedances of the AQS annual mean objective (40µg/m^3) for NO_2 reported at any of the monitoring sites. Furthermore, all 12 monitoring sites that also returned data in 2018 reported a decrease in concentrations, demonstrating an improvement in air quality across the district. The greatest reduction in NO_2 concentrations was at monitoring Site DT13, which reported a decline of 6.67µg/m^3 between 2018 and 2019. All of the eight new monitoring locations also reported well below the AQS objective, the highest reporting location of the new sites was DT18 at 27.7µg/m^3. There were two sites that reported within 10% of the NO_2 AQS objective, DT12 in the Cullompton AQMA (37.8µg/m^3) and DT20 in the Crediton AQMA (37.9µg/m^3), both of these sites have declined from 2018, where they exceeded the AQS objective. As DT12 is not located at a point of relevant public exposure, following the application of distance correction, DT12 reported 37.4µg/m^3. DT13 also exceeded the NO_2 AQS objective in 2018 but has now fallen below the limit, reporting 33.9µg/m^3 in 2019. Monitoring sites DT12 and DT13 are located within the centre of Cullompton, along B3181 / Fore Street, one of the main access roads in and out of the town centre where congestion can occur. Site DT20 is located along the A377, the main route through Crediton AQMA.

3.2.2 Particulate Matter (PM_{10})

Mid Devon District Council did not undertake PM_{10} monitoring in 2019.

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	Uplowman Road, Tiverton	Roadside	298374	113514	NO2	N	0	0	NO	2.5
DT2	Gornhay Orchard, Tiverton	Roadside	297404	113236	NO2	N	0	0	NO	2.45
DT3	Horsdon Terrace, Tiverton	Kerbside	296568	112787	NO2	N	0	4.7	NO	2
DT4	Leat Street, Tiverton	Roadside	295119	112725	NO2	N	2.3	0.8	NO	2.9
DT5	Market Place, Willand	Kerbside	303360	111293	NO2	N	6.2	6.2	NO	2.54
DT6	Silver Street/B3181, Willand	Roadside	303373	110348	NO2	N	1.8	0	NO	2.7
DT7	Willand Road, Cullompton	Kerbside	302151	108329	NO2	N	1.5	1.5	NO	2.55
DT8	1 Culm Lea, Cullompton	Kerbside	303005	107418	NO2	Y	3	3.4	NO	2.2
DT9	Gerbera Way, Cullompton	Kerbside	303040	107238	NO2	Y	4.2	2	NO	2.5
DT10	Police Station, Cullompton	Roadside	302187	107549	NO2	Y	1.3	1.6	NO	3
DT11	HSBC, Cullompton	Roadside	302050	107359	NO2	Y	0.1	0.8	NO	3.2

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)
DT12	8 Fore Street, Cullompton	Kerbside	302056	107296	NO2	Y	0.1	1.6	NO	3
DT13	45 Fore Street, Cullompton	Kerbside	302071	107199	NO2	Y	0.1	2.3	NO	2.8
DT14	Trumps Barn, Cullompton	Kerbside	301263	107560	NO2	Y	1.2	1.2	NO	2.5
DT15	Newton St Cyres	Roadside	287900	98061	NO2	N	0.5	0.87	NO	2.44
DT16	Bottom Exeter Road, Crediton	Kerbside	283986	99653	NO2	Y	0.4	1.5	NO	2.8
DT17	Top Exeter Road, Crediton	Roadside	283874	99943	NO2	Y	1.9	0.3	NO	2.7
DT18	Charlotte Street, Crediton	Kerbside	283845	100043	NO2	Y	1.3	1.4	NO	2.4
DT19	HSBC High Street, Crediton	Kerbside	283298	100285	NO2	Y	0	1.9	NO	3
DT20	Duke Of York, High Street, Crediton	Kerbside	282738	100377	NO2	Y	0	2.65	NO	2.2

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 [6]	298374	113514	Roadside	Diffusion Tube	100	100	-	-	-	-	9.9
DT2 [6]	297404	113236	Roadside	Diffusion Tube	100	100	-	-	-	-	8.7
DT3	296568	112787	Kerbside	Diffusion Tube	100	100	21.8	21.8	17.7	19.4	17.2
DT4	295119	112725	Roadside	Diffusion Tube	100	100	28.9	30.0	26.2	30.8	27.0
DT5 [6]	303360	111293	Kerbside	Diffusion Tube	100	100	-	-	-	-	22.6
DT6 [6]	303373	110348	Roadside	Diffusion Tube	100	100	-	-	-	-	20.3
DT7 [6]	302151	108329	Kerbside	Diffusion Tube	100	100	-	-	-	-	12.9
DT8	303005	107418	Kerbside	Diffusion Tube	100	100	-	16.7	15.7	17.8	15.6
DT9 [6]	303040	107238	Kerbside	Diffusion Tube	100	100	-	-	-	-	9.9
DT10	302187	107549	Roadside	Diffusion Tube	100	100	24.0	27.4	22.7	28.8	24.8
DT11	302050	107359	Roadside	Diffusion Tube	100	100		31.0	24.1	37.1	32.4
DT12	302056	107296	Kerbside	Diffusion Tube	100	100	38.5	**41.3**	37.0	**42.9**	37.8
DT13	302071	107199	Kerbside	Diffusion Tube	100	100	32.5	34.8	31.1	**40.6**	33.9
DT14 [6]	301263	107560	Kerbside	Diffusion Tube	92	92	-	-	-	-	15.9

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 ($\mu g/m^3$) (3) (4)				
							2015	2016	2017	2018	2019
DT15	287900	98061	Roadside	Diffusion Tube	100	100	-	-	-	32.1	28.9
DT16	283986	99653	Kerbside	Diffusion Tube	100	100	32.2	34.6	32.4	37.9	34.8
DT17	283874	99943	Roadside	Diffusion Tube	100	100	30.5	33.7	29.9	37.2	32.7
DT18 [6]	283845	100043	Kerbside	Diffusion Tube	100	100	-	-	-	-	27.7
DT19	283298	100285	Kerbside	Diffusion Tube	100	100	30.0	33.6	28.5	36.7	33.1
DT20	282738	100377	Kerbside	Diffusion Tube	100	100	36.1	39.5	37.8	**44.6**	37.9

☒ **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 $40\mu g/m^3$ are shown in **bold**.

NO_2 annual means exceeding $60\mu g/m^3$, 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.

(5) A review of monitoring locations was undertaken in 2018, therefore some diffusion tube Site IDs do not correspond to previous year's ASRs. Data is displayed for the same locations for comparison, even if the Site ID was different in previous reports.

(6) New location as of 2019

Figure A.1 – Trends in Annual Mean NO_2 Concentrations within the Cullompton AQMA

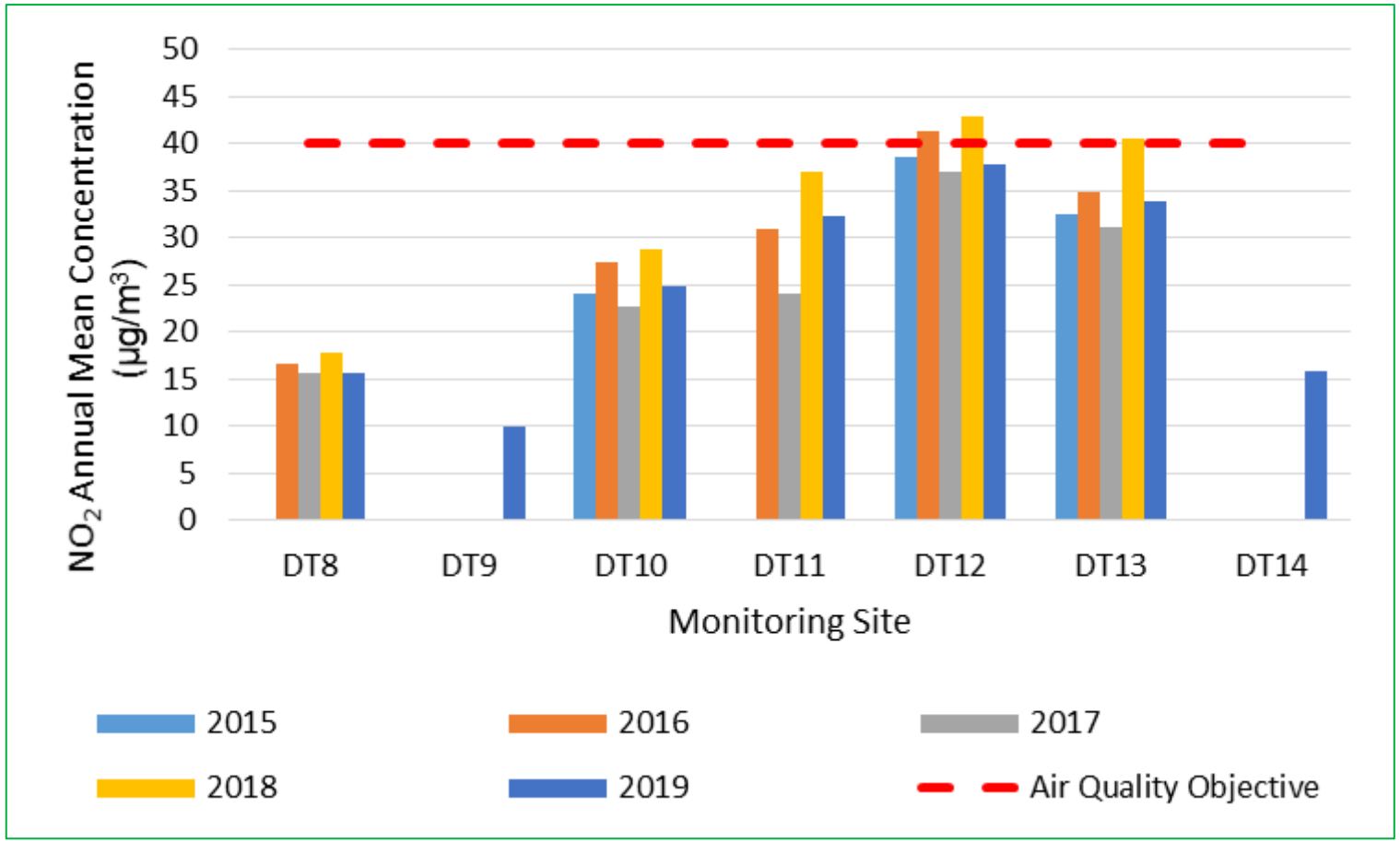


Figure A.2 – Trends in Annual Mean NO_2 Concentrations within the Crediton AQMA

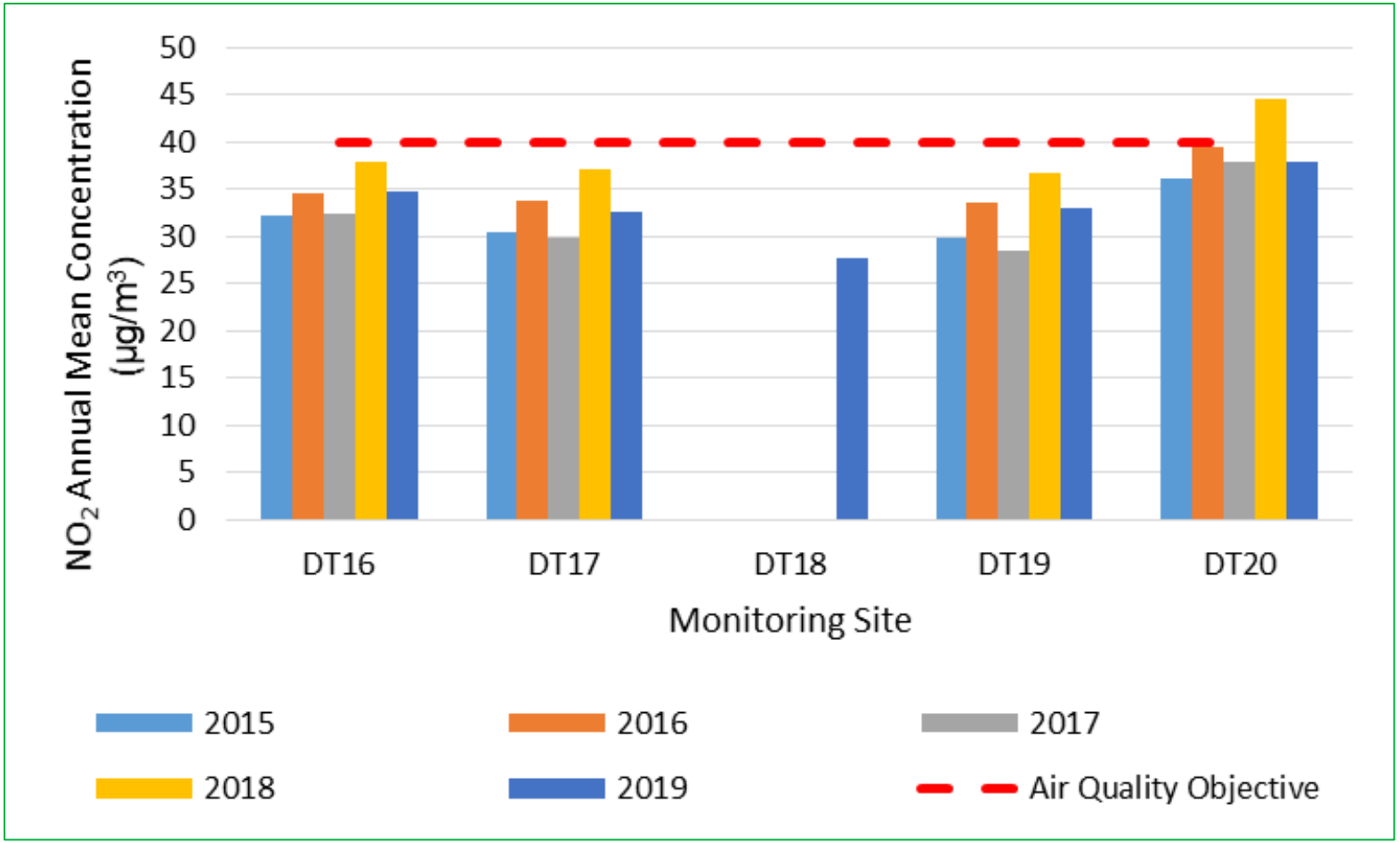
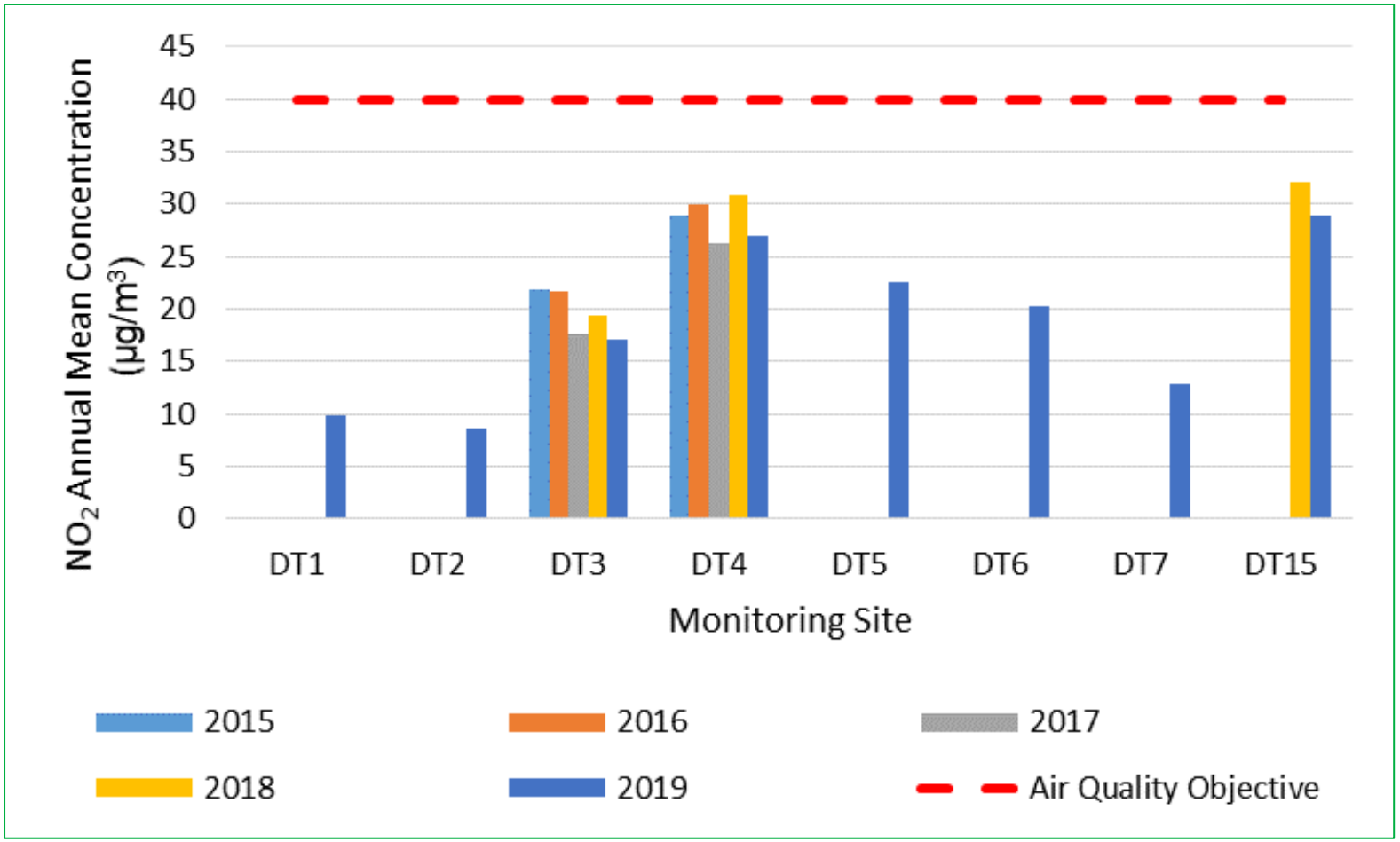


Figure A.3 – Trends in Annual Mean NO_2 Concentrations outside of declared AQMAs



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 (0.83) and Annualised (1)	Distance Corrected to Nearest Exposure (2)
DT1	298374	113514	16.4	15.2	9.5	14.0	10.7	9.0	9.8	8.6	10.1	13.3	16.5	10.6	12.0	9.9	
DT2	297404	113236	15.3	15.5	8.2	12.3	7.8	7.9	6.9	7.2	6.2	12.4	13.6	12.2	10.5	8.7	
DT3	296568	112787	29.0	25.8	19.3	18.4	19.6	17.3	16.5	14.9	17.8	22.5	23.5	23.7	20.7	17.2	
DT4	295119	112725	40.3	40.1	25.4	33.4	30.3	28.6	28.9	25.0	30.2	33.3	40.5	34.5	32.6	27.0	
DT5	303360	111293	36.8	30.1	27.5	26.6	25.2	23.7	20.8	24.5	25.1	24.8	34.5	27.8	27.3	22.6	
DT6	303373	110348	34.2	34.7	22.1	24.8	20.9	21.2	19.2	19.8	21.0	23.7	27.0	25.1	24.5	20.3	
DT7	302151	108329	15.9	21.6	9.9	19.0	13.6	13.1	15.0	10.7	14.7	16.0	20.1	17.1	15.6	12.9	
DT8	303005	107418	38.0	19.6	13.9	22.0	17.4	16.2	14.9	14.3	16.2	16.5	18.3	17.9	18.8	15.6	
DT9	303040	107238	16.9	14.9	9.2	14.1	11.7	8.8	9.3	9.5	10.6	11.7	14.6	12.5	12.0	9.9	
DT10	302187	107549	35.5	34.6	23.8	35.2	39.6	24.7	23.5	24.6	24.5	29.7	34.4	29.0	29.9	24.8	
DT11	302050	107359	44.6	43.2	33.2	43.7	41.7	36.1	35.4	29.8	38.2	38.3	47.0	36.7	39.0	32.4	
DT12	302056	107296	47.8	58.3	44.0	46.0	38.8	38.5	43.2	41.6	43.4	46.1	50.3	48.9	45.6	37.8	37.4
DT13	302071	107199	44.9	45.4	39.2	46.0	28.6	37.6	37.6	31.6	38.8	44.7	55.2	40.7	40.9	33.9	
DT14	301263	107560	25.9	25.7	19.9	17.9	16.7	Missing	16.2	13.7	16.0	17.5	21.6	19.1	19.1	15.9	
DT15	287900	98061	42.6	38.5	29.3	26.4	32.7	31.1	34.0	27.9	36.4	34.3	45.1	39.5	34.8	28.9	

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 (0.83) and Annualised (1)	Distance Corrected to Nearest Exposure (2)
DT16	283986	99653	43.3	46.5	36.4	44.7	38.5	43.1	37.6	37.4	40.0	47.4	45.1	43.1	41.9	34.8	
DT17	283874	99943	40.1	48.3	35.4	47.3	34.9	38.9	36.3	30.6	35.7	41.8	43.5	39.9	39.4	32.7	
DT18	283845	100043	37.4	40.1	28.1	40.0	31.5	31.7	30.0	24.5	30.4	35.9	37.8	32.5	33.3	27.7	
DT19	283298	100285	41.5	51.1	33.4	47.7	39.7	38.6	33.2	30.0	34.3	41.5	46.2	40.9	39.8	33.1	
DT20	282738	100377	51.6	63.4	42.7	51.4	42.5	37.5	34.2	36.0	42.1	45.5	49.3	52.3	45.7	37.9	

☐ **Local bias adjustment factor used**

☒ **National bias adjustment factor used**

☒ **Annualisation has been conducted where data capture is <75% - Annualisation was not necessary at any site during 2019**

☒ **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

Diffusion Tube Bias Adjustment Factors

The diffusion tube data has been corrected using a bias adjustment factor, which is an estimate of the difference between diffusion tube concentrations and continuous monitoring. Defra LAQM.TG(16) provides guidance with regard to the application of a bias adjustment factor to correct diffusion tube monitoring. Triplicate co-location studies can be used to determine a local bias factor based on the comparison of diffusion tube results with data taken from NO_x/NO_2 continuous analysers. Alternatively, the national database of diffusion tube co-location surveys provides bias factors for the relevant laboratory and preparation method.

With regard to the application of a bias adjustment factor for diffusion tubes, Defra LAQM.TG(16) and the LAQM Helpdesk[11] recommend the use of a local bias adjustment factor where available and relevant to diffusion tube sites.

Mid Devon District Council does not operate any continuous monitoring measuring NO_2 concentrations within the district and therefore a co-location study is not available to derive a local bias factor, thus the current version of the national bias adjustment factor spreadsheet[9] has been used.

Diffusion Tubes were supplied and analysed by Somerset Scientific Services utilising the 20% triethanolamine (TEA) in water preparation method. A bias adjustment factor of 0.83 for the year 2019 (based on 9 studies) has been derived from the national bias adjustment calculator[9] and applied to diffusion tube data collected within this period.

	Year				
	2015	2016	2017	2018	2019
National Bias Adjustment Factor used	0.87	0.92	0.87	0.89	0.83
Laboratory	Gradko	Gradko	Gradko	Somerset	Somerset

[11] Laqm.defra.gov.uk

QA/QC of Diffusion Tube Monitoring

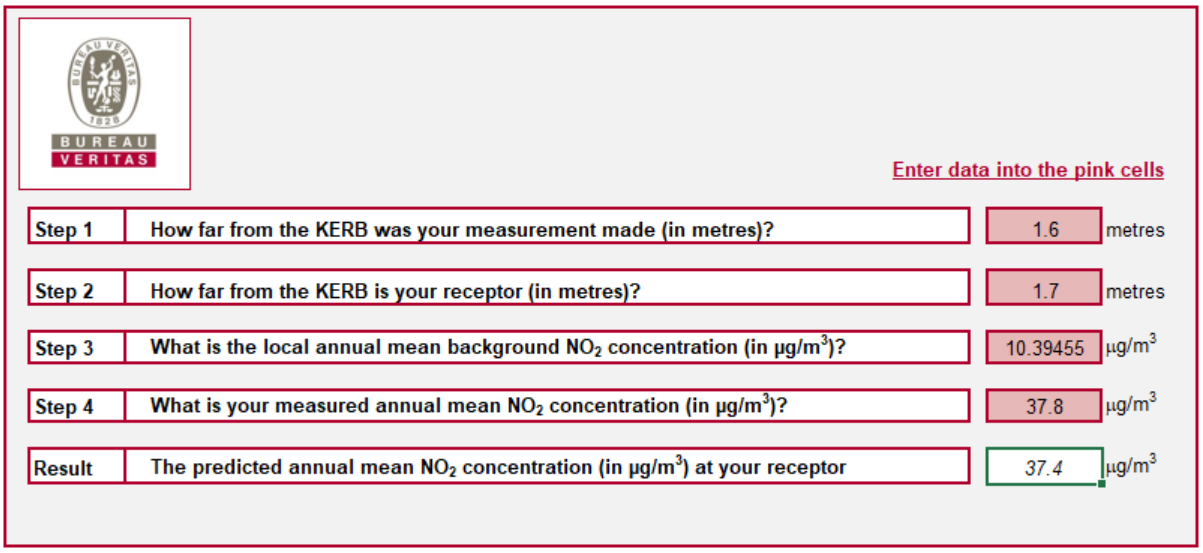
Somerset Scientific Services, operated by Somerset County Council, is a UKAS accredited laboratory and participates in the AIR-PT Scheme (a continuation of the Workplace Analysis Scheme for Proficiency (WASP) for NO_2 tube analysis and the Annual Field Inter-Comparison Exercise. These provide strict performance criteria for participating laboratories to meet, thereby ensuring NO_2 concentrations are reported to a high level of accuracy. The lab follows the procedures set out in the Harmonisation Practical Guidance.

In the 2019 AIR-PT results, AIR-PT AR030 (January to February 2019), AIR PT AR031 (April to May 2019), AIR PT AR033 (July to August 2019) and AIR PT AR034 (September to November 2019) Somerset Scientific Services scored 100%. The percentage score reflects the results deemed to be satisfactory based upon the z-score of $< \pm 2$.

Fall-off Distance Correction of Sites Exceeding the NO_2 Annual Mean Objective

The NO_2 fall-off with distance calculator is applied at monitoring locations where NO_2 annual mean concentrations exceed 36µg/m^3 (to account for inherent uncertainty in diffusion tube monitoring concentration data) and the location is not representative of annual mean exposure as per Box 1.1. There was only one monitoring site that required correction for distance, Site DT12, the NO_2 fall-off with distance calculator was used to estimate the NO_2 concentration at the nearest location with relevant exposure. The NO_2 fall-off with distance correction calculation for this location is shown in Figure C.1.

Figure C.1 – Fall-off with Distance Correction



Diffusion Tube Site ID changes 2018 – 2019

Table C.1 – Site ID Changes Following Review on Monitoring Locations

Site ID	Change in Location	
	2018	2019
DT1	Relocated	New Location
DT2	Renamed DT3	New Location
DT3	Renamed DT4	2018 DT2
DT4	Removed	2018 DT3
DT5	Relocated	New Location
DT6	Relocated	New Location
DT7	Relocated	New Location
DT8	No change	
DT9	Renamed DT10	New Location
DT10	Removed	2018 DT9
DT11	Removed	2018 DT12
DT12	Renamed DT11	2018 DT13
DT13	Renamed DT12	2018 DT14
DT14	Renamed DT13	New Location
DT15	Co-ordinates have changed to increase accuracy	
DT16	No change	
DT17	Removed	2018 DT18
DT18	Renamed DT17	New Location
DT19	No change	
DT20	No change	
DT21	Relocated	New Location

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

Figure D.1 - Monitoring Locations within the Crediton AQMA

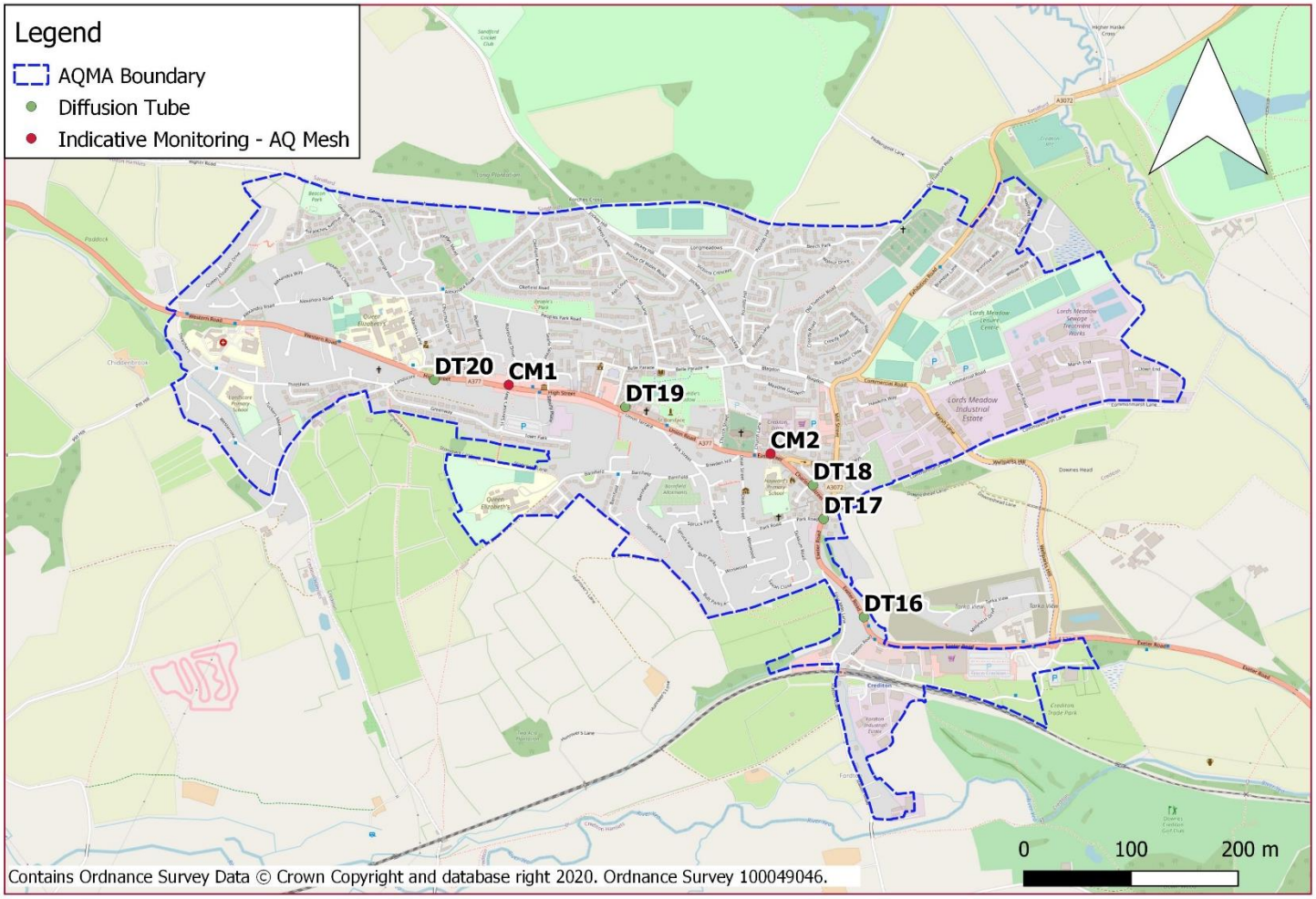


Figure D.2 - Cullompton AQMA Boundary

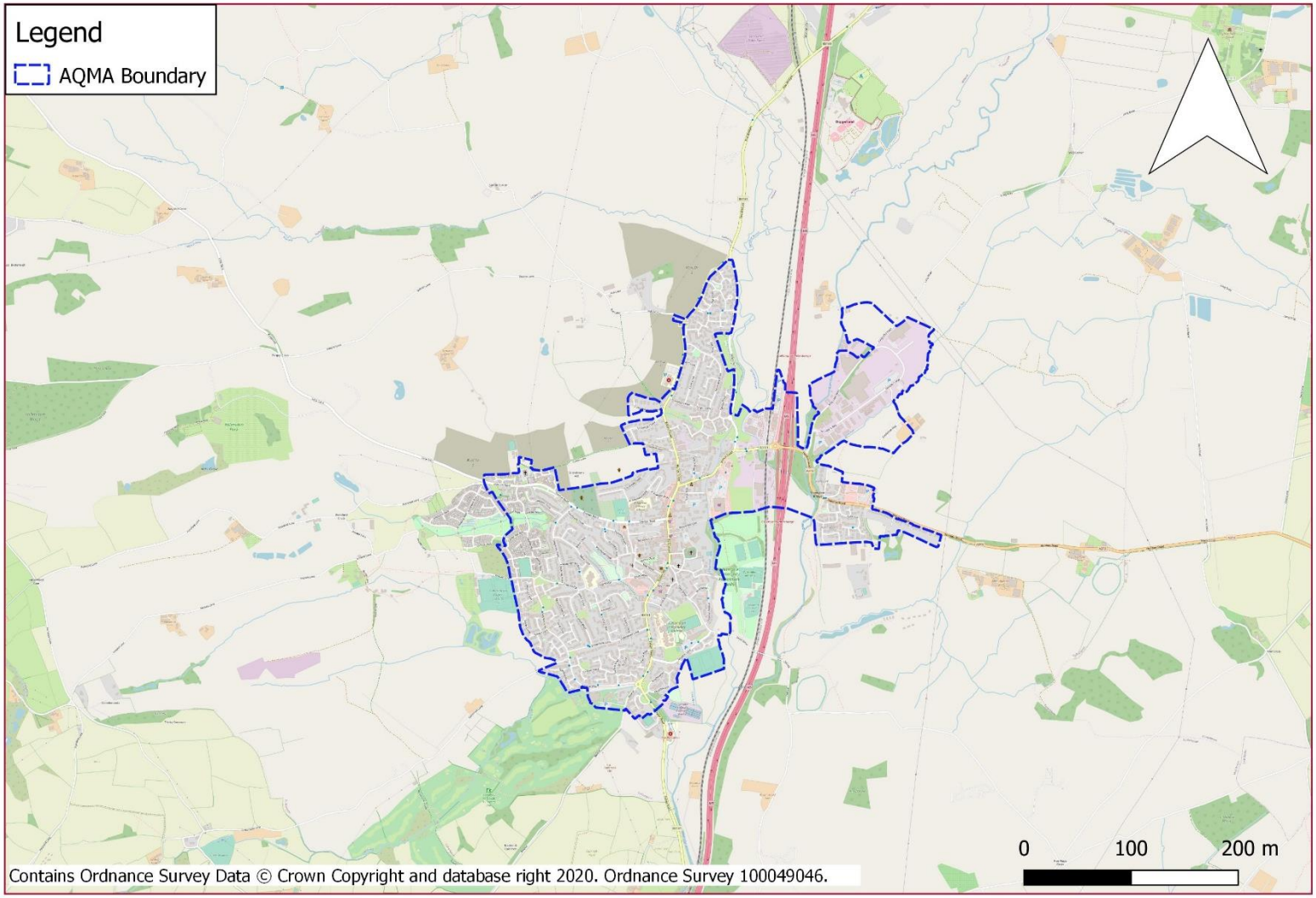


Figure D.3 - Monitoring Locations within the Cullompton AQMA - Eastern Boundary

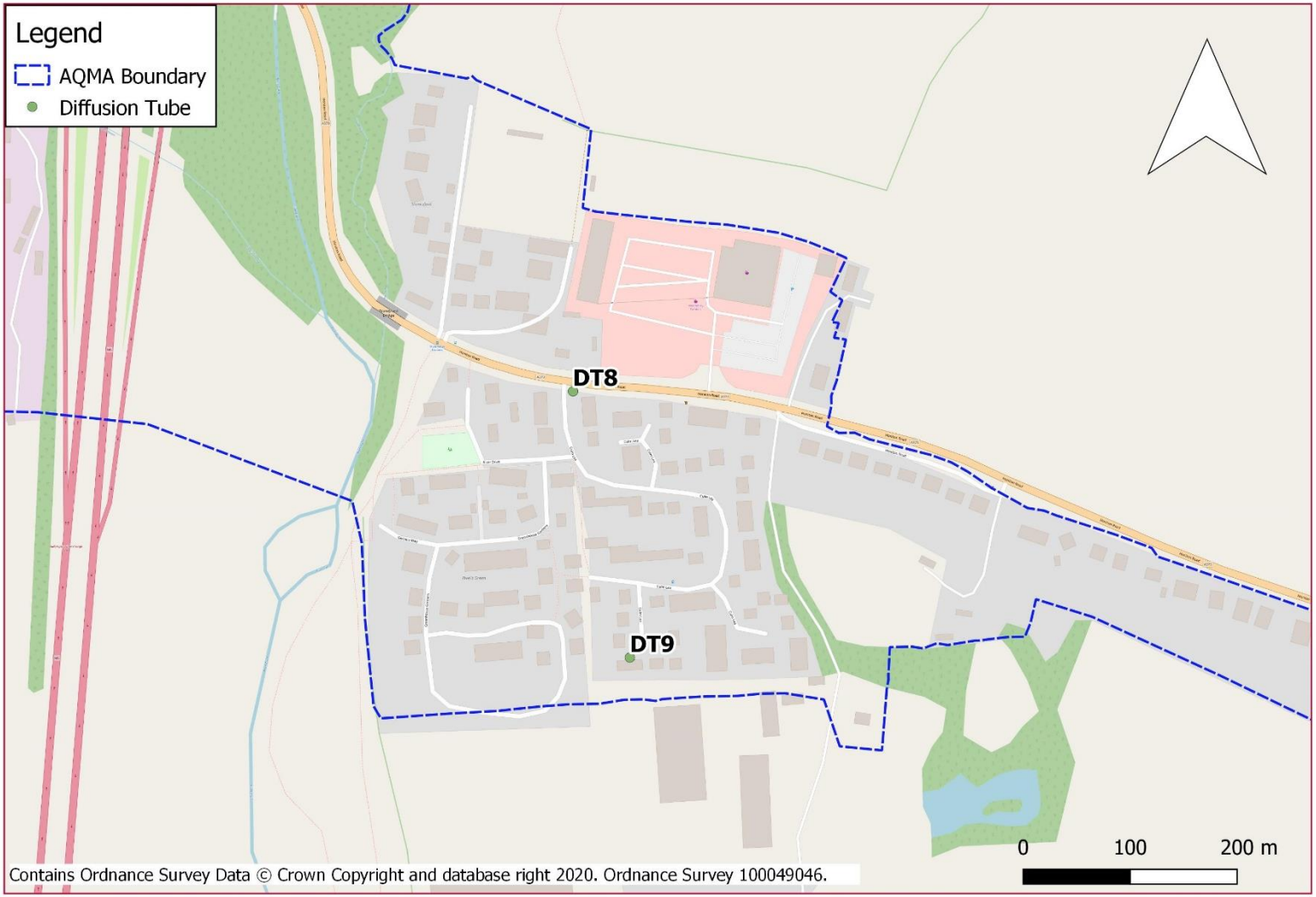


Figure D.4 – Monitoring Locations within the Cullompton AQMA – Fore Street

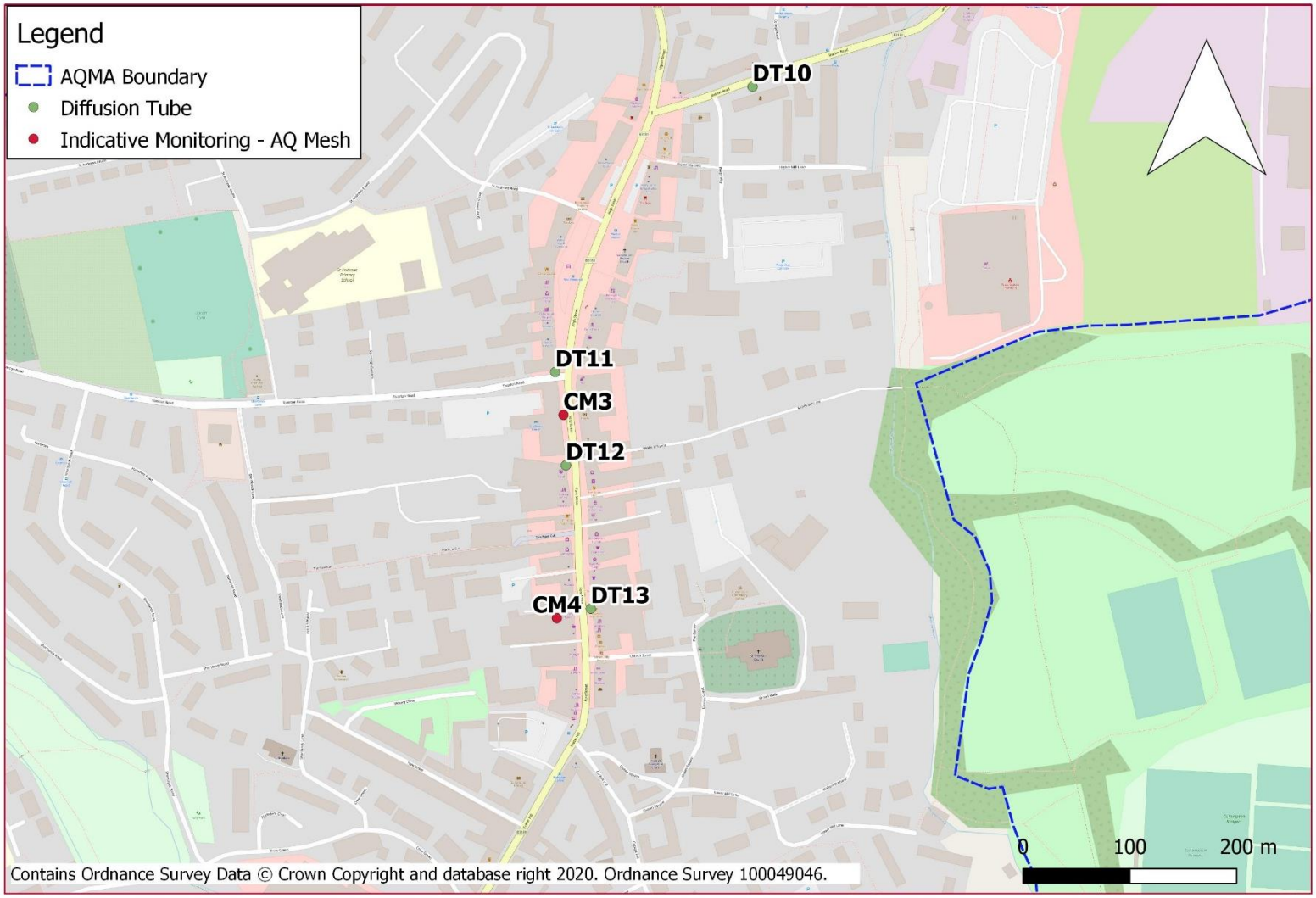


Figure D.5 - Monitoring Locations within the Cullompton AQMA and outside the AQMA - Eastern Boundary

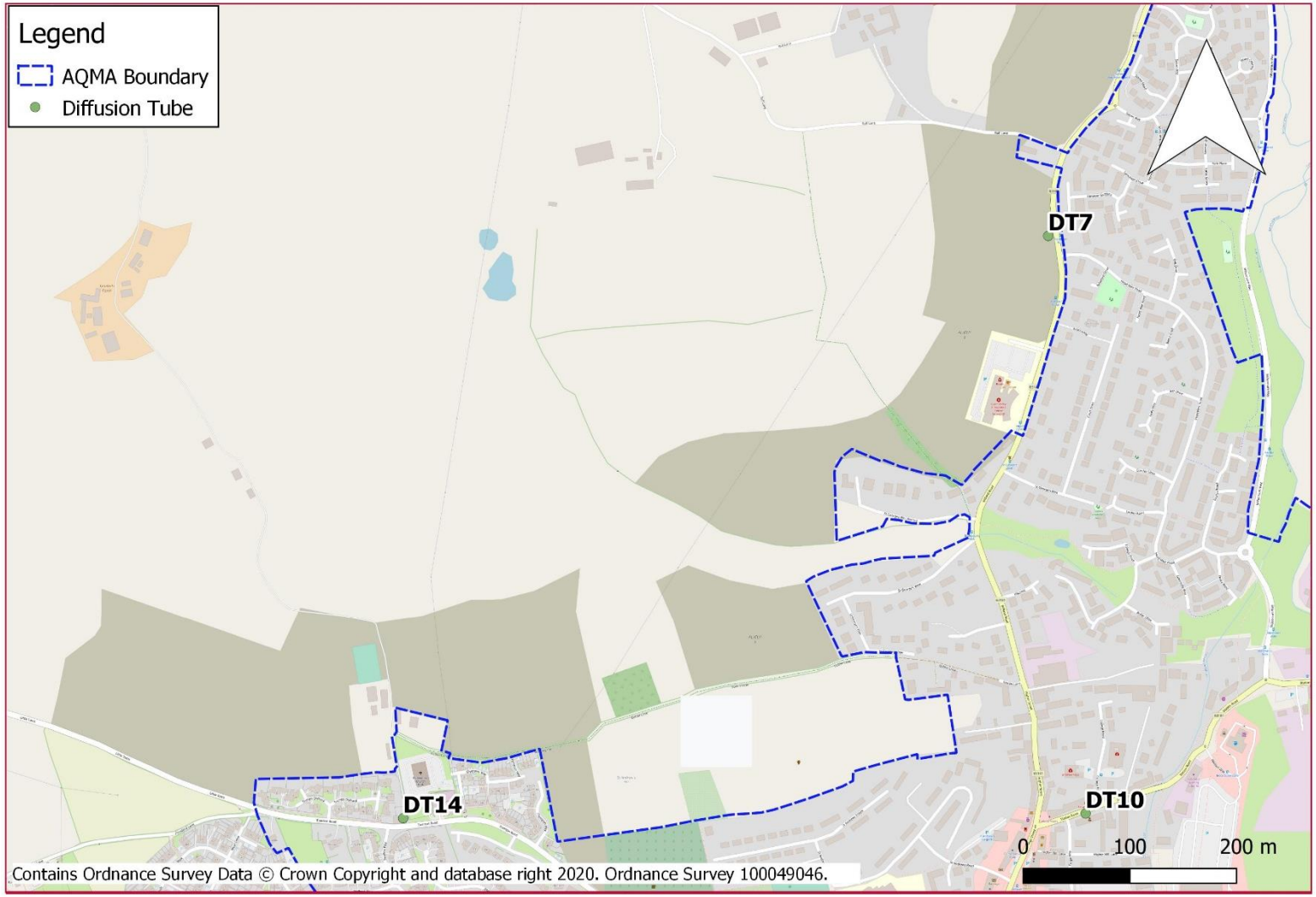


Figure D.6 - Monitoring Locations outside AQMAs - Willand

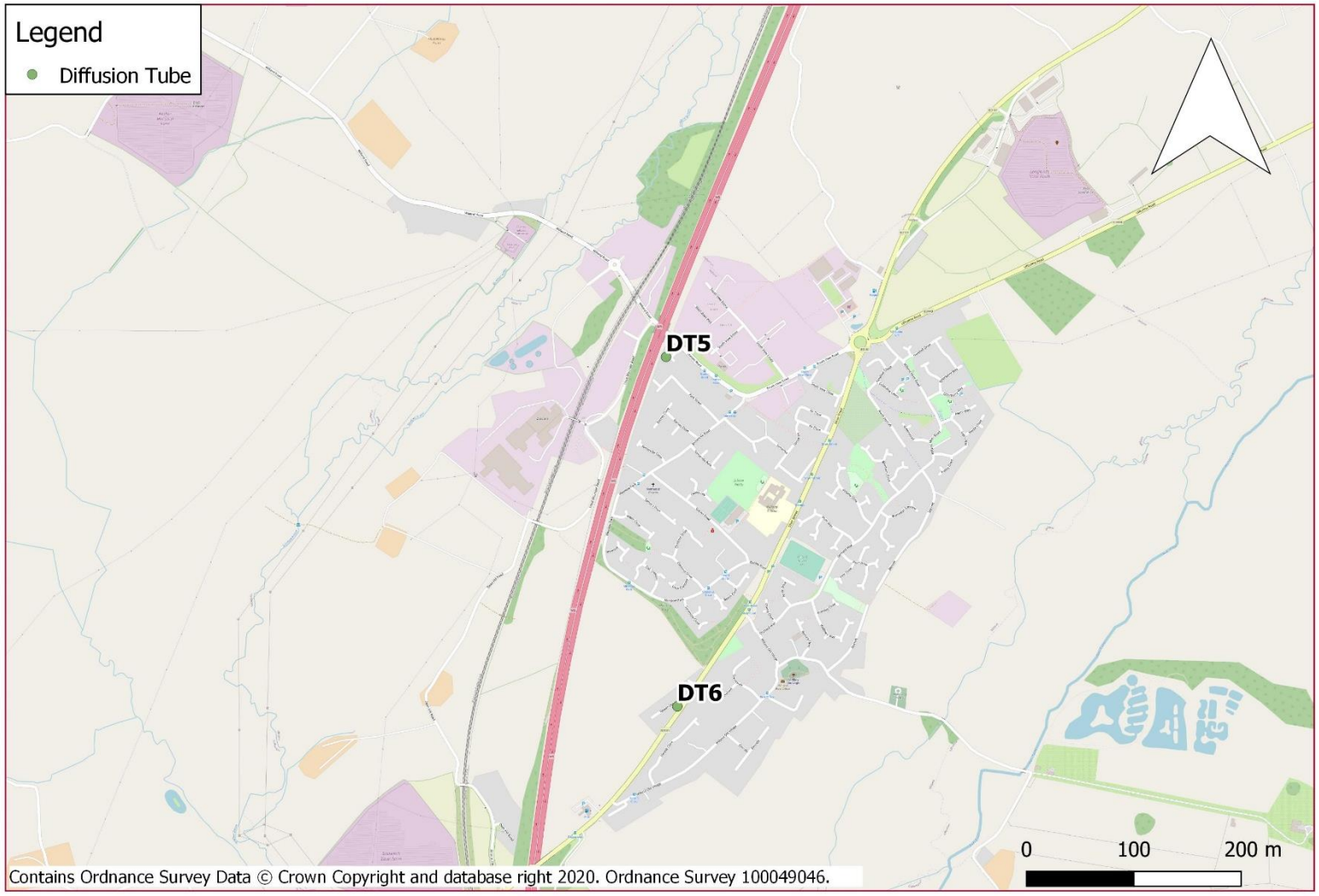


Figure D.7 - Monitoring Locations outside AQMAs - Tiverton

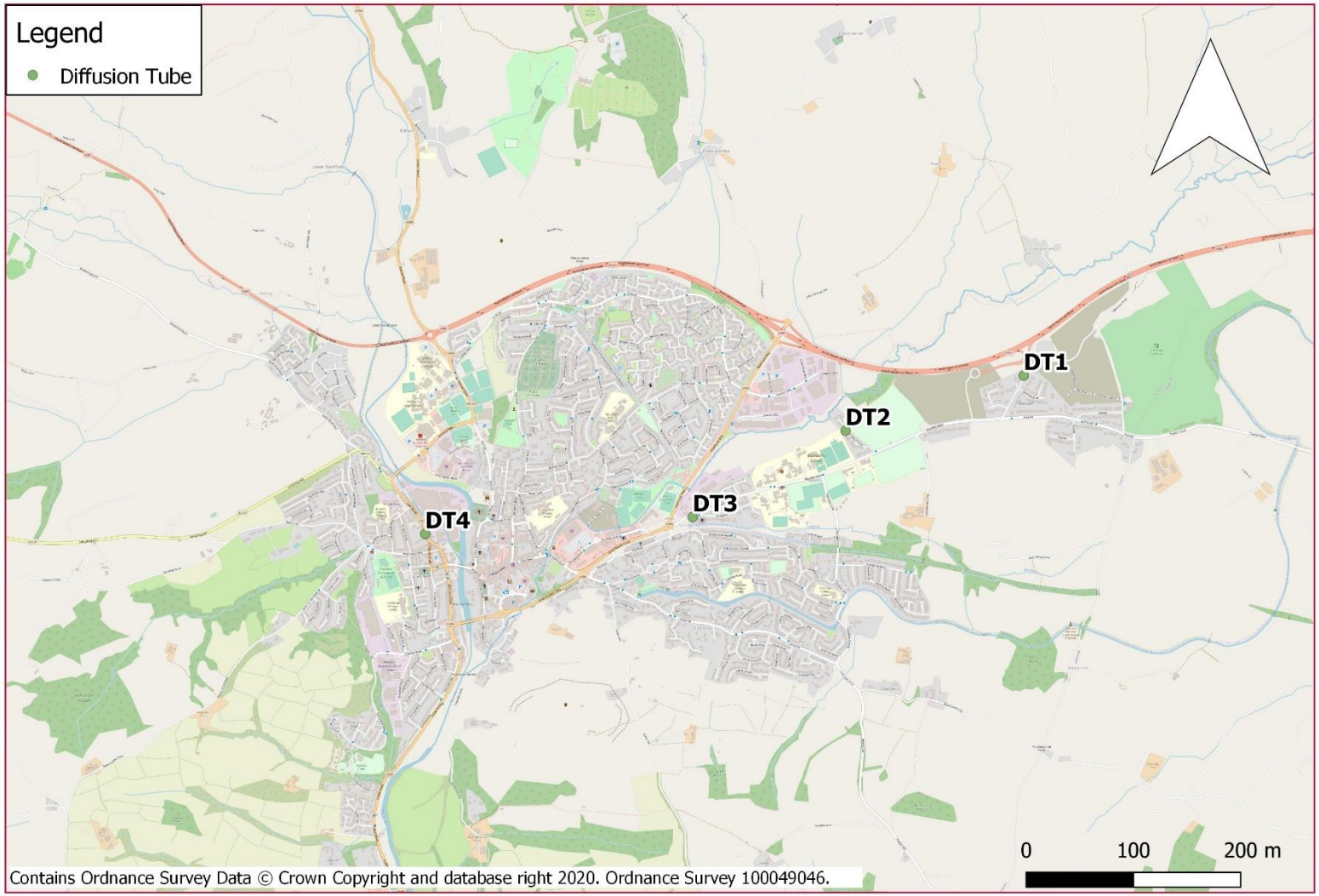


Figure D 8 - Monitoring Locations outside AQMAs – Newton St Cyres

Appendix E: Summary of Air Quality Objectives in England

Table E.1 – Air Quality Objectives in England

Pollutant	Air Quality Objective[12]	
	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

[12] 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
DDC	Devon District Council
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
MDDC	Mid Devon District Council
LAQM	Local Air Quality Management
MDDC	Mid Devon District Council
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

References

- Local Air Quality Management Technical Guidance LAQM.TG(16). February 2018. Published by Defra in partnership with the Scottish Government, Welsh Assembly Government and Department of the Environment Northern Ireland.
- Local Air Quality Management Policy Guidance LAQM.PG(16). May 2016. Published by Defra in partnership with the Scottish Government, Welsh.
- Mid Devon District Council 2019 Annual Status Report.
- Mid Devon District Council, 2017 Air Quality Action Plan
- Draft Review of Mid Devon District Council Air Quality Action Plan: Ricardo Energy and Environment
- National Diffusion Tube Bias Adjustment Factor Spreadsheet, version 06/20 published in June 2020.
- https://laqm.defra.gov.uk/assets/laqmno2performancedatauptonovember2019v1.pdf (AIR-PT-Rounds 24 to 34 (Jan 2018 - Nov 2019))
- NO_2 Fall-Off with Distance Calculator: https://laqm.defra.gov.uk/tools-monitoring-data/no2-falloff.html

Appendix F: Draft Review of Mid Devon District Council Air Quality Action Plan – Ricardo Energy & Environment

Ricardo
Energy & Environment

Review of Mid Devon District Council Air Quality Action Plan

Report for Mid Devon District Council

ED 12393 | Issue Number 1 | Date 02/07/2019

DRAFT

Please keep until final version for audit purposes

Customer:

Mid Devon District Council

Customer reference:

ED12393

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02 July 2019

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Table of contents

1 Introduction

Local authorities are required to conduct periodic reviews and assessments of air quality in their areas as part of the Local Air Quality Management (LAQM) process. If an authority identifies an air quality objective that will not be achieved, the local authority is required to declare an Air Quality Management Area (AQMA), and subsequently prepare an Air Quality Action Plan (AQAP). The AQAP should outline a package of local measures to improve air quality in an area in order to try and achieve the objectives.

The current MDDC AQAP was produced to try and reduce the concentrations of air pollutants, and exposure to air pollution for Mid Devon residents, and outlines air quality improvement actions that will be delivered between 2017-2021.

MDDC have commissioned Ricardo Energy & Environment to undertake a review of their current AQAP. This report includes:

- A review of the current AQAP, considering:
  - The relationship with the wider District and County Council policies; and
  - Identify any gaps and potential integration issues, considering existing policies and other Local Authority AQAP examples.
- A review of the implementation of existing measures and how to improve successful delivery:
  - Barriers and how to resolve them;
  - Development/feasibility study work; and
  - Funding sources.
- Recommendations for improvements to the AQAP in terms of measures, integration and implementation.

The review aims to assist MDDC in the implementation of its current air quality improvement measures. The report focusses on maximising the impact of measures in order to assist with the achievement of the air quality objectives and improving overall air quality in the district.

2 What makes an effective AQAP?

Air Quality Management Areas (AQMAs) are declared for locations where exceedances of the UK Air Quality Objectives are thought likely. Local authorities are required to develop an AQAP in response to the designation of an AQMA in their region which should identify and implement measures to improve air quality in the local area. An effective action plan will likely require effective collaboration between the local authority and external collaborators, including for example the Highways Authority (i.e. the county in two tier authorities), the Highways Agency where trunk roads are part of the AQMA, industry and environmental regulators. The success of an action plan is also likely dependent on collaboration between both air quality and land-use planning officers.

The 'Air Quality Action Plans: Interim Guidance for Local Authorities[1] set out ideas and methodologies for considering the various elements of an action plan. A more recent review of effectiveness of local authority action plans and future policy options for LAQM[2] was commissioned by Defra in 2013 and observed that:

- Little or no quantification of the measures (in terms of reductions in emissions or concentrations) has been carried out in any precise manner. Where quantification has been included, it has been based on broad categories (e.g. "high", "medium" and "low"). In some cases, an estimate of the impact of the measures is expressed in terms of reductions in traffic volumes, or expected reductions in NOx emissions, but as the geographic scale over which the measure(s) was implemented is not stated, it is difficult to estimate in any precise manner what the overall benefits have been.
- Authorities have been successful in implementing a wide range of measures, particularly within those areas for which the authority has direct control. There is, however, evidence that some major schemes have been withdrawn due to funding cuts or delays in Major Scheme Bids.
- There are a number of examples where the integration of the AQAP into the LTP process has proved very successful.

The successful implementation of measures was often aided by:

- The close involvement of stakeholders (both within and outside the local authority, as appropriate) and local politicians
- Incorporation of the AQAP into the LTP process

The key barriers to implementation were identified as:

- Concerns related to economic displacement (associated with a lack of political will and support)
- Lack of funding for large infrastructure projects
- Inadequate resources

[1] Air Quality Action Plans: Interim Guidance for Local Authorities. Available from: https://laqm.defra.gov.uk/assets/aqactionplansinterim.pdf
[2] Review of Effectiveness of Local Authority Action Plans and Future Policy Options for LAQM (2013). Available from: https://uk-air.defra.gov.uk/library/reports?report_id=760

The 'Air Quality and Climate Change Integration Guidance for Local Authorities'[3] document provided guidance to local authorities with regards to integrating their efforts to reduce the impacts of both air pollutants and greenhouse gases. The key benefits of integrating air quality and climate change policy were listed as:

1. Integrated policy is cheaper and more effective to implement as one set of policy measures can be designed to benefit both areas.
2. If policy is not integrated, unintentional trade-offs can occur – e.g. policy that benefits one area at the expense of another.
3. Climate benefits of policy decisions are felt in the future and distributed over the entire globe, whilst air quality benefits are felt 'here and now'.
4. Air quality benefits can help to convince climate change sceptics of the need for new policy measures and, vice-versa.

The guidance provides an indication of the air quality and climate impacts of typical measures (Table 2-1Table 3-1). Here 'Green' indicates a positive impact, 'Amber' indicates that the measure may or may not have a negative impact, depending on where or how it is installed and 'Red' indicates a likely negative impact.

Table 2-1: Common Measures and Their Impacts on Air Quality and Climate Change

Measure/technology	Measure type	Impact on air quality	Impact on climate change
Alternative fuels	Transport	Green	Green
Retrofit of exhaust abatement equipment	Transport	Green	Amber
Low emission zones	Transport	Green	Amber
Low emission strategies	Transport	Green	Green
Fleet management and driver training	Transport	Green	Green
Emissions related car parking charges	Transport	Amber	Green
Travel plans	Transport	Green	Green
Car clubs	Transport	Green	Green
Domestic energy efficiency	Built Environment	Green	Green
Commercial energy efficiency	Built Environment	Green	Green
Combined heat and power	Built Environment	Amber	Green
Biomass heat	Built Environment	Red	Green
Micro wind turbine	Built Environment	Neutral	Green
Solar	Built Environment	Green	Green
Heat pumps	Built Environment	Green	Neutral

[3]Air Quality and Climate Change Integration Guidance for Local Authorities, EPUK (2011). Available from: https://laqm.defra.gov.uk/assets/aqandccguidance.pdf

3 MDDC's Current Air Quality Action Plan

The Current AQAP presents an overview of the current status of air quality in the district, provides a summary of the projects completed following the previous action plan (2009 – 2015), confirms the priorities and drivers for air quality in the Council, introduces 11 priority areas for air quality and describes the measures to be taken forward under the new Plan. The following provides a summary of the key elements of the current AQAP.

3.1 Current Air Quality in Mid Devon

The main source of air pollution in the Mid Devon district is road traffic emissions from major roads, notably the M5, A373, A361, A377, A396 and A3126. Traffic emissions are a major source of nitrogen dioxide (NO_2) and particulate matter of different size fractions (PM_{10} and $PM_{2.5}$). Other pollution sources including commercial, industrial and domestic sources also contribute to pollutant concentrations.

Currently there are two AQMAs declared within the district. Both AQMAs are related to traffic emissions; the Crediton AQMA has been designated for exceedances of the NO_2 annual mean objective as well as the PM_{10} 24-hour mean objective and the Cullompton AQMA has been designated for exceedances of the NO_2 annual mean objective.

During 2018, three exceedances of the annual mean objective for NO_2 were reported within the district. Two exceedances were reported at monitoring locations within the Cullompton AQMA and one was reported within the Crediton AQMA. Three diffusion tubes located within the Crediton AQMA and one diffusion tube within the Cullompton AQMA reported annual mean NO_2 concentrations within 10% of the air quality objective (36 – 40 µg/m^3).

During 2018, PM_{10} concentrations measured within Crediton AQMA were well below the air quality objective. It was recently agreed that the council will consider the removal of the PM_{10} monitoring site and/or AQMA given that this monitoring location hasn't reported an exceedance of either the 24-hour and annual mean AQS objective limits for the past five years.

Figure 3-1: Location of AQMAs within the Mid Devon District boundary

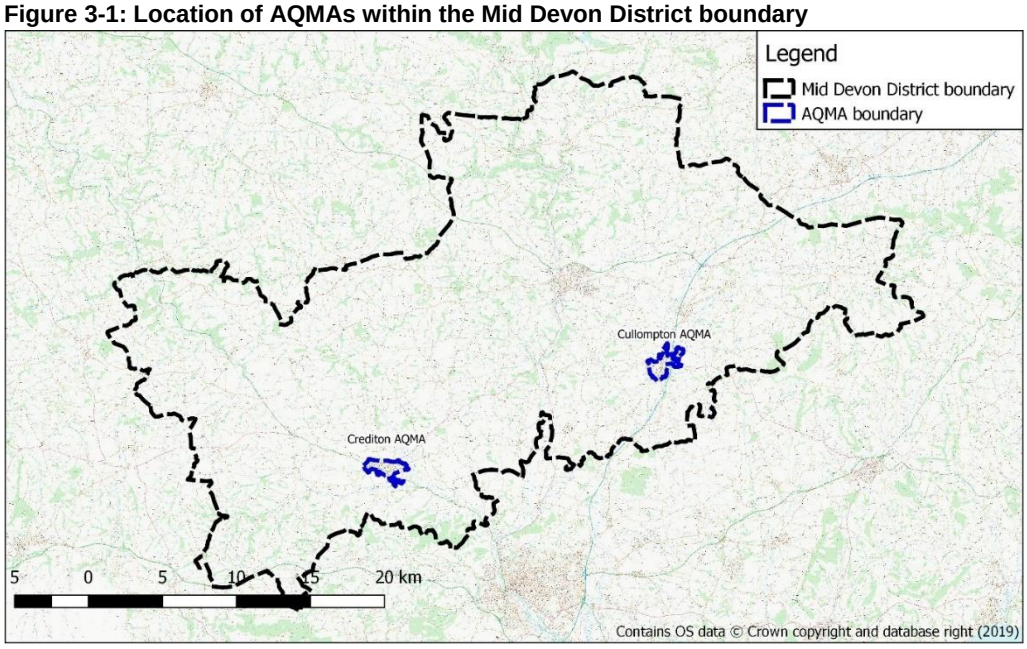


Figure 3-2: NO_2 diffusion tube and PM_{10} automatic monitoring locations within Crediton AQMA in 2018

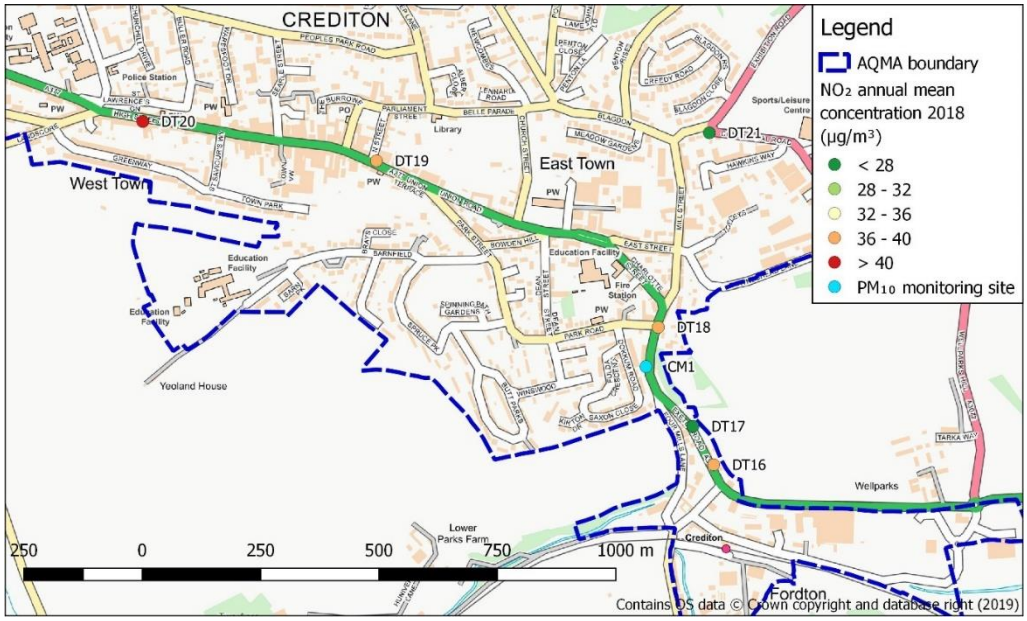
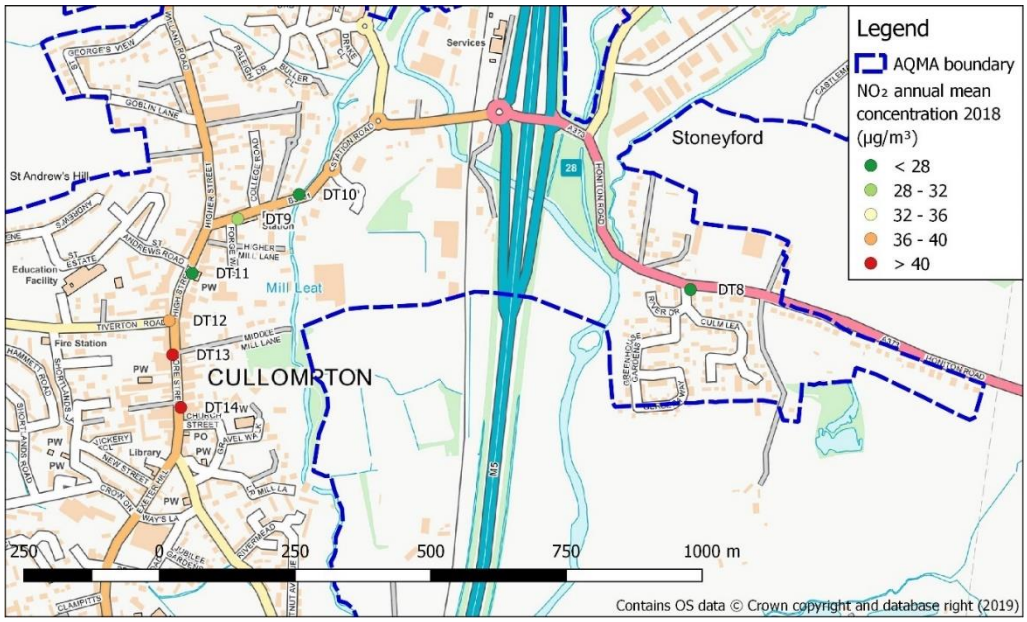


Figure 3-3: NO_2 diffusion tube monitoring locations within Cullompton AQMA in 2018



The air quality issues facing Mid Devon are typical for towns and cities in the UK, with high vehicle numbers accessing the area, and congested road networks resulting in NO_2 hotspots. Recent monitoring data does indicate improvements in ambient air quality – in particular, PM_{10} concentrations are now at level where it may be reasonable to remove the AQMA designation. However, NO_2 continues to present a challenge, and requires ongoing improvement in the management of emission sources. The current status of air quality is addressed in the current Plan, but there are opportunities for improvement, including confirmation of source apportionment data and how different vehicle types contribute to ambient pollutant concentrations represented by the monitoring data.

3.2 Measures delivered 2009 – 2015

The past two iterations of the AQAP have proposed a broad list of measures to address air quality issues in the district – many of which have been successfully implemented. The measures delivered between 2009 – 2015 are detailed in Table 3-1.

Table 3-1: Measures delivered to improve air quality in Mid Devon between 2009 – 2015

- The Lords Meadows Link Road at Crediton was completed in 2014. This provides an alternative route to Tiverton and was aimed at directing traffic flow away from Exeter Road.
- Extended bus services:
  - For a new Tesco superstore
  - Devon-wide concessionary bus pass scheme later replaced by National scheme
  - Enhanced evening bus services to Tiverton
  - New direct bus route to Exeter
- Taxi licensing – all vehicles offered for licensing for the first time must be no more than five years old from the date of first registration
- Sustainable school travel/School Travel Plans
- Traffic Management High Street, Crediton
- ECO Stars scheme – ongoing, targeting HGV & bus emissions reduction
- Crediton Milk Link Dairy boiler changed from heavy fuel to gas
- Cullompton Distributor Road – designed to provide relief to the town centre (ongoing)
- Town centre traffic management measures in Cullompton – including junction improvements, right turn ban Tiverton Rd/Fore St, parking management charges – 2013/2014)
- Introduction of Euro V buses along the Culm Valley – completed and now moving to Euro VI for new double-deckers
- Cullompton Railway Station reinstatement feasibility study

A provision for a Crediton town-bus 'loop' service was identified for delivery via existing Section 106 development funds. However, this was deemed as not being a viable service to maintain commercially and was withdrawn\reduced in 2015.

3.3 Priority Areas under Current AQAP

The key priorities of the current MDDC AQAP are detailed in Table 3-2.

Table 3-2: Current actions to improve air quality in Mid Devon between 2017 - 2021

1. To reduce heavy goods vehicle emissions by expanding the current Eco stars scheme to all the districts within Devon.
2. To work with Devon County Council and the key bus service providers to maximise patronage and link the bus routes more effectively.
3. To improve the Electric Vehicle Charging Network through the installation of units at Council car parks or other appropriate locations and within design specifications for future housing developments (home charging).
4. To work with key partners in re-establishing the Cullompton Rail Station. Mid Devon District Council is investing £40k for the commissioning of engineering design work for a new railway station at Cullompton. This funding matches a previous commitment by Taunton Deane Borough Council of £40k and, in addition, both Town Councils of Cullompton and Wellington have committed to contributing £10k each, providing the project with a £100k boost with which to push the work forward.

5. To support alternative forms of transport such as local car sharing schemes, e-bikes, cycles and local bus services that minimise personal car use.
6. To adopt Local Plan Policies (Low emission strategies) and monitor their implementation in all future development applications.
7. To expand and improve the local network of foot and cycle paths to facilitate a move towards walking or cycling as an alternative to car use for short to medium length journeys.
8. To pro-actively engage all stakeholders with responsibility and or/interest in the development of roads, transport and infrastructure to ensure air quality is central to planning and delivery.
9. To acknowledge that the car will remain the only alternative for some rural locations and to take this into consideration when making policy or undertaking measures that may directly or indirectly affect rural communities.
10. To continue to monitor Mid Devon's two AQMAs and carry out mitigation strategies that will result in their removal from the register
11. To work with strategic partners to deliver the Cullompton Eastern Relief Road and additional M5 junction.

3.4 Current measures

The measures currently put forward in the Plan are detailed in Table 3-3. The measures are largely designed to reduce emissions from vehicles, and can be grouped into the following themes:

- Measures to encourage alternative transport:
  - Community car sharing
  - E-bikes scheme
  - Secure cycle parking facilities
  - Improving footpath and cycling paths in major towns
  - Planning Policy DM8 Parking
  - Cullompton/ Wellington Rail Link Feasibility Study
  - Bus stop infrastructure
  - Review of bus stop locations and routes
- Measures to improved traffic management / road links:
  - School and community travel routes
  - Eastern Relief Road Cullompton and additional M5 junction
  - Kings Mill Industrial Site traffic management, Cullompton Junction 28
  - Explore alternative parking and traffic flow measures
  - Road surfacing
- Measures to support the uptake of Ultra Low Emission Vehicles (ULEVs):
  - Develop EV charging network
- Measures to reduce emissions from taxis and public transport:
  - Taxi licencing conditions
- Measures to reduce emissions from fleet vehicles:
  - ECO Stars fleet management and recognition scheme
- Measures to improve driving practices:

- Coordinated approach to enforcement of anti-idling

- Measures to minimise air quality impacts from development:
  - Mid Devon Local Plan
  - Culm Valley Garden Village development and major infrastructure projects
  - Planning Policy DM6 Transport and Air Quality
  - Planning conditions on Tiverton Eastern Urban extension

The measures cover a wide area, with a focus on key emission sources, including private vehicles and taxis. However, there are some areas that have not been addressed by the Plan, including emissions from industry and small-scale combustion sources, including wood burners and bonfires.

Table 3-3: Current MDDC AQAP measures

Measure Number	Measure	Detail
1	Community Car sharing schemes	Local Plan Part 3; Development management Policies – Policy DM6 identifies car club and car sharing schemes as a mitigation measure. Locations and s106 funds identified: Crediton (£30K), Cullompton (£30K)
2	E-bikes scheme	Initially looking at major centres to link new developments with town centres and transport hubs. Concept and design based upon Co-Bikes scheme in Exeter though could also include community run schemes. Awaiting s106 allocation or alternative funding source such as ERDF.
3	Secure cycle parking facilities in Town Centres and at key transport hubs	Locations and s106 identified: Crediton (£8K), Cullompton (£30K). Location in Tiverton under consideration to join town centre with Tiverton parkway railway station.
4	School and community travel routes	Will follow similar study carried out in Newton Abbot (Teignbridge Council). Looking to implement initially in Cullompton. S106 funds have been identified but not yet allocated.
5	Develop EV charging network	Policy DM8 of the Local Plan Part 3 identifies a minimum standard for the provision of EV infrastructure as recommended by the Low Emissions Strategic Partnership for 3-phase or accelerated electricity supply. Individual properties within new housing developments will have their own charging points. Currently there are s106 allocations for improving the EV charging network in Crediton (£100K) and Cullompton (£150K). A contract to install 7 charging points has been signed between MDDC and a private operator with installation due in 2017.
6	Taxi Licensing conditions	Policy to be updated again in 2018.
7	Eastern Relief Road Cullompton and additional M5 junction	Major infrastructure will be required to mitigate current high levels in the town centre and accommodate the increased traffic volumes arising from Cullompton's proposed growth. Consideration could be given to pedestrianizing the High Street.
8	Coordinated approach to enforcement of anti-idling	Concern identified by Town Council.
9	Kings Mill Industrial site traffic management Cullompton Junction 28	As the site will increase in size thus increasing volumes trying to leave/enter the M5 a range of initiatives are proposed to deal with the problem including no7 (ERR)
10	Explore alternative parking and traffic flow measures	Consultation with Town councils has identified a number of smaller measures that could alleviate congestion at Both Crediton and Cullompton. Further consultation with DCC/Highways will be required to look at feasibility.

11	Cullompton/ Wellington Rail link feasibility study	Land has been identified that will accommodate this infrastructure. A 'bus' hub built next to the Rail Station that links with new developments is proposed.
12	ECO Stars fleet management and recognition scheme	This program has good membership in Mid Devon but does require further expansion into Devon.
13	Bus stop infrastructure	S106 allocations in place for Copplestone bus infrastructure improvements that affects Crediton AQMA.(£177K)
14	Review of bus stop locations and routes	Review of Cullompton and Crediton services – includes frequency, location of bus stops, routes.
15	Improving footpath and cycling paths in major towns	Improved footpath and cycleway links between Cullompton town centre and Kingsmill Industrial Estate; Cromwells Meadow to Leisure centre in Crediton;
16	Road surfacing	Design consideration for relevant road links within both Cullompton and Crediton AQMAs. Could be managed on a contract by contract basis.
17	Mid Devon Local Plan	Waiting final approval by Inspector.
18	Culm Valley Garden Village development and major infrastructure projects	Includes planning policies which support improvements to local air quality levels including technical guidance on emissions assessment work and low emission strategies (Policy DM6).
19	Planning Policy DM8 Parking	Includes EV charging network, provision for cyclists and minimum parking limits.
20	Planning Policy DM6 Transport and Air Quality	Development proposals should be accompanied by an Integrated Transport Assessment, Travel Plan and Traffic Pollution Assessment, and Low Emission Assessment and any impact on the AQMA.
21	Planning conditions on Tiverton Eastern Urban extension	Major extension to the east of Tiverton requiring detailed Low Emission strategies from developers.

3.5 Additional work to support air quality in Mid Devon

Since publication of the current AQAP in 2017, several new areas of work are being taken forward to improve air quality in the Mid Devon District. In addition, The UK Government has responded to the latest research on the effects of $PM_{2.5}$, which indicates there is no real safe threshold for the pollutant, by outlining aims to reduce concentrations below the World Health Organisation's (WHO) recommended limit values by 2030. At present, MDDC is under no obligation to monitor $PM_{2.5}$ concentrations but is required to consider options for addressing emissions of $PM_{2.5}$ at a local level. The new work outlined in this section designed to target reductions in NO_2, will also have co-benefits for reducing concentrations of particulate matter.

MDDC have commissioned Ricardo Energy & Environment to carry out this work covering:

- Review of the district's current monitoring programme. Recommendations will be made with regards to the placement of monitoring locations across the district and potential locations for new low-cost sensors in both Crediton and Cullompton;
- Review of Mid Devon District Council's current planning policies;
- Air quality assessment of the proposed Crediton traffic management schemes; and
- Development of a Low Emission Strategy (LES) for Cullompton to manage the impacts of future development.

These new pieces of work can be considered actions for inclusion in the action plan and are summarised in Table 3-4: below.

Table 3-4: Progress on New Measures to Improve Air Quality in the Mid Devon District

No.	Measure	EU Category	EU Classification	Organisations involved and Funding Source	Planning Phase	Implementation Phase	Key Performance Indicator	Reduction in Pollutant / Emission from Measure	Progress to Date	Estimated / Actual Completion Date
1	Review of current monitoring in region	Other	Other	MDDC	2019	2019-2021	More detailed understanding of air quality in the district	N/A	Review Phase	Ongoing
2	Review of planning policies	Policy Guidance and Development Control	Air Quality Planning and Policy Guidance	MDDC	2019	2019-2021	Recommendations on setting targets and emissions reduction ambition for developers	N/A	Review Phase	Ongoing
3	Air quality assessment of Crediton traffic management schemes	Traffic Management	Other	MDDC	2019	2020-2021	Improved traffic flow through centre of Crediton. Improved air quality	High	Planning phase	Ongoing
4	Development of a Low LES for Cullompton	Policy Guidance and Development Control	Low Emissions Strategy	MDDC	2019	2020-2021	Improved air quality	High	Planning phase	Ongoing

3.5.1 Review of Current Monitoring in the Region

MDDC has commissioned Ricardo Energy & Environment to undertake a comprehensive review of the Councils air quality monitoring, reporting, assessments and planning documents to ensure that all current monitoring requirements are identified. The purpose of the monitoring review is to support MDDC with its ongoing diligence and help to ensure the Council is in full compliance with its environmental commitments and current UK legislation.

Feedback from Defra on the Councils 2018 Annual Status Report noted the requirement to review current monitoring locations given the extent of new infrastructure developments proposed. In addition, a number of monitoring locations have recorded low concentrations of NO_2 for a number of years. MDDC also expressed an interest in using a network of real-time air quality sensors to explore concentrations in more detail across the district – notably Crediton and Cullompton.

Recommendations proposed by the review include:

- Revoking the Crediton AQMA based on particulates. Particulate sensors may offer an alternative measurement methodology and provide better value for particulate measurements going forward.
- Retention of the AQMA declarations for annual mean NO_2 concentrations at Cullompton and Crediton.
- The establishment of a low-cost monitoring network using AQ Mesh Sensors across the district.

3.5.2 Review of Current Planning Policies

A significant amount of development, which has the potential to impact ambient air quality, has been proposed for Mid Devon. In recognition of this, MDDC has commissioned Ricardo Energy & Environment to review how air quality is being considered in its planning policies and guidance and how this can be strengthened. The document provides a review of the District's core planning policies in relation to LAQM, the AQAP and the AQMAs, and considers specific developed guidance.

This report provides a review of current MDDC planning policies and guidance, and other LA guidance and approaches, and offers recommendations on potential areas of improvement, including:

- Ensuring all relevant plans and policies developed by MDDC reflect the importance of addressing air quality issues in the district.
- Introducing a new system for classifying developments, which offers a user-friendly resource for developers and ensures risks to air quality are appropriately addressed.
- Ensuring developers are required to apply the latest technical guidance for air quality assessments.
- The development of a new emissions mitigation assessment based on the latest IGCB Air Quality Damage Costs and Emission Factor Toolkit.
- Ensuring a consistent approach to the determination of significance of air quality impacts, that requires the application of professional judgement in the interpretation air quality assessments.

3.5.3 Air Quality Impact of Proposed Crediton Traffic Management Scheme

Crediton is located on the A377 traffic route and provides one of the few link roads between Exeter and North Devon. As previously discussed, Crediton has one AQMA designated for exceedances of

the NO_2 annual mean objective as well as the PM_{10} 24-hour mean objective. One diffusion tube location showed exceedances for the NO_2 air quality objective in 2018 (Site 20: 44.6 µg/m^3). Site 16, 18 and 19 located within the Crediton AQMA reported annual mean NO_2 concentrations to be within 10% of the AQS objective (Site 16 – 37.9 µg/m^3, Site 18 – 37.2 µg/m^3, and Site 19 – 36.7 µg/m^3). Sites 16, 18, 19 and 20 are located adjacent to the A377 which is the main route through Crediton AQMA.

Crediton Town Council recently commissioned a study to define traffic management improvements for key roads in the town. The scheme has been developed in response to the further development planned in Crediton (as well as other edge of settlement land uses) and its implications for potential air quality issues in the High Street area. The potential reasons highlighted for causing poor air quality in the area include vehicle delay from bus stopping and layover, on-street parking, loading, pedestrian crossings, junction delays and HGV traffic, as well as other sources of pollution, like local industry. The town is situated on several commuter routes to Exeter and the M5. The proximity of the local industrial estate also increases the volume of HGVs on the roads. The recent addition of the Crediton Link Road has reduced traffic on East Street and Mill Street towards the south east of the town centre but has not significantly impacted traffic flow on the High Street.

The key aims of the new traffic management scheme to help address these issues are set out in the table below:

Table 3-5: Crediton Feasibility Study Aims

Walkability

- Improve ability to walk and cross the road
- Improve accessibility for disabled and people with pushchairs or mobility aids.

Air Quality / Environment

- Better manage air quality
- Improve cycle access
- Review storm drainage and climate change reliance
- Manage of the impact of HGV's and noise impacts

Traffic Behaviour

- Reduce traffic speed
- Create smoother traffic flow

Bus Movement

- Better manage location and operation of bus stops
- Improve bus stop waiting realm

Urban Realm

- Enhance public realm
- Improve natural landscaping through street trees and green landscaping
- Better manage current on-street parking stock
- Optimise frontage loading operation
- Review and better manage the ongoing maintenance burden

Design concepts presented for the following areas to address the above aims

- Western Gateway
- St Saviours Way / Searle St
- Searle St / North Street

- North Street / Market Street
- Union Road Area
- Church Lane / Holy Cross Area
- East Street / Haywoods Area

MDDC commissioned an air quality study to analyse the air quality impacts of the proposed scheme. The work will build on microsimulation traffic modelling of the scheme and assess air quality on a detailed spatial and temporal level. This work is planned for the second half of 2019.

3.5.4 Cullompton Low Emission Strategy

There is significant new development proposed for Cullompton including an extension to the North and West of the town and a completely new 'Garden City' to the East of the M5. This new development has the potential to increase the risk of further air quality exceedance issues in and around the town, which is already designated as an AQMA for NO_2. MDDC wish to explore the potential impact of these new developments on air quality in Cullompton and assess potential mitigation measures.

To support MDDC with this issue, Ricardo Energy and Environment have been commissioned to develop an emissions model and Low Emission Strategy (LES) for Cullompton to help mitigate the impact of the new developments. The following are measures that have already been identified to tackle air quality related issues in in Cullompton and be explored with the emissions model and LES:

- Consideration of a neighbourhood plan for the future developments. Including the integration of the new developments with the Town Centre by carefully planning the cycle and footpath network;
- Development of the new relief road;
- Implementation of an anti-idling campaign on Fore Street; and
- Prevent illegal parking on Fore Street.

This work will take place in the second half of 2019.

4 Appraisal

4.1 Assessment of measures within the AQAP

The following considers potential gaps and integration issues in the current AQAP, including barriers to implementation, how it relates to other Council policies and the potential for additional measures.

4.1.1 Barriers to action implementation

The progress to date of the 2017 AQAP measures and the barriers to implementation (if applicable) are summarised in Table 4-1:. The principal challenges and barriers to implementation identified by MDDC in the 2019 ASR are:

- **Influence**: Stretches of roads controlled by Highways England fall within the jurisdiction of Mid Devon District Council, and as a result influence air quality in the surrounding area. For instance, stretches of the M5 are within close proximity to Crediton and Cullompton AQMAs, and as a result, air quality within these areas are influenced by roads outside of the district's direct control. In these situations, it can be incredibly tough to deliver effective measures to help improve air quality. In light of this, Mid Devon District Council has acknowledged this influence and has made a focussed effort to strengthen ties with the surrounding local authorities and infrastructure operators, such as Highways England, with a view of improving regional air quality – a shared goal.

- **Funding**: The majority of the actions mentioned in the AQAP require funding to implement successfully. In particular, delivery of the Eastern Relief Road in Cullompton and additional M5 junction requires major infrastructure funding. Therefore, MDDC must utilise all options available for funding, prioritise measures and be cost effective to ensure the actions outlined in the AQAP are delivered. The Council anticipates that the measures stated in Table 4-1: will help ensure compliance is maintained for the forthcoming years in the Crediton and Cullompton AQMAs.

Table 4-1: Progress to date, expected schedule and barriers for implementation of current MDDC AQAP measures

Measure Number	Measure	Progress to Date	Estimated / Actual Completion Date	Assessment (green = good progress, amber = some progress, red = poor/little progress)
1	Community car sharing schemes	s106 contribution allocated and included in new housing travel plans.	Pending full release of funds and commencement of development.	
2	E-bikes scheme	Pending securing funding from s106 or other funding source.	Pending release of s106 funds.	
3	Secure cycle parking facilities in town	s106 allocated for Crediton railway station and Town centre.	Pending release of s106 funds.	

Measure Number	Measure	Progress to Date	Estimated / Actual Completion Date	Assessment (green = good progress, amber = some progress, red = poor/little progress)
	Centres and at key transport hubs	Included in Cullompton Master planning.		
4	School and community travel routes	Planning stage. Consultation with DCC and Town Councils required.	2018/19.	
5	Develop EV charging network	Contract with supplier signed.	Ongoing.	
6	Taxi Licensing conditions	Current policy updated 2017.	Ongoing.	
7	Eastern Relief Road Cullompton and additional M5 junction	Local Plan submission. Land allocated, and preliminary design work undertaken. Major infrastructure funding required.	Pending funding and adoption of Local Plan.	
8	Coordinated approach to enforcement of anti-idling	Initial consultation held with Town Councils.	2018.	
9	Kings Mill Industrial site traffic management Cullompton Junction 28	Local Plan submission	Ongoing.	
10	Explore alternative parking and traffic flow measures	Measures identified by Town Councils and MDDC. Introduces resident car parking rates which is often unfavourable.	Ongoing.	
11	Cullompton/ Wellington Rail link feasibility study	Joint project, £100K committed to study. Local Plan submission.	Ongoing.	
12	ECO Stars fleet management and	Continuing program.	Ongoing.	

Measure Number	Measure	Progress to Date	Estimated / Actual Completion Date	Assessment (green = good progress, amber = some progress, red = poor/little progress)
	recognition scheme			
13	Bus stop infrastructure	S106 contribution allocated.	Pending full release of funds.	
14	Review of bus stop locations and routes	Town Council consultation. Pending agreement with DCC and Bus operators.	2021.	
15	Improving footpath and cycling paths in major towns	Initial network improvements identified in Neighbourhood plans and s106 projects.	Ongoing.	
16	Road surfacing	Review phase.	Ongoing.	
17	Mid Devon Local Plan	Review phase completed.	Jan 2018	
18	Culm Valley Garden Village development and major infrastructure projects	Culm Village funding awarded by Central Government Steering group formed. Site and land secured.	Ongoing.	
19	Planning Policy DM8 Parking	Revised in Local Plan review 2017.	Ongoing.	
20	Planning Policy DM6 Transport and Air Quality	Revised in Local Plan review 2017.	Ongoing.	
21	Planning conditions on Tiverton Eastern Urban extension	Review phase.	Ongoing.	

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