



2018 Air Quality Annual Status Report (ASR)

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

September 2018

West Dorset District Council

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Executive Summary: Air Quality in Our Area

Air Quality in West Dorset District Council

Air pollution is associated with a number of adverse health impacts. It is recognised as a contributing factor in the onset of heart disease and cancer. Additionally, air pollution particularly affects the most vulnerable in society: children and older people, and those with heart and lung conditions. There is also often a strong correlation with equalities issues, because areas with poor air quality are also often the less affluent areas^{1,2}.

The annual health cost to society of the impacts of particulate matter alone in the UK is estimated to be around £16 billion³.

Air quality in West Dorset has been assessed and has been found to be broadly very good due to the predominantly rural environment. However, in certain locations - parts of Chideock, Dorchester and Bridport - air quality has been found to be close to, or exceeding the objective level for nitrogen dioxide (NO₂), the main source of pollution being from road traffic. This is due to vehicle emissions and other factors including type and number of vehicles; their speed; congestion and local topographical circumstances. As a result of this, an Air Quality Management Area, (AQMA), was declared in Chideock in 2007 and High East Street, Dorchester in 2009.

Conclusions and Priorities

Monitoring results for 2017 continue to exceed the annual objective for nitrogen dioxide in East Road, Bridport and Main Street, Chideock. There are no other exceedences of the air quality objectives in any other area of West Dorset. Areas that exceed the annual objective for nitrogen dioxide in Chideock are already within an Air Quality Management Area and an Action Plan is in place to improve air quality to comply with the objective. The Action Plan is considered out of date, by the council, the Chideock Parish Council and Defra. This is because the options listed within it

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

have been undertaken, or feasibly rejected. No improvement to the air quality has been noted since the AQMA's introduction in 2006. Work commenced in 2018 with Highways England to review this Plan. This will be reported on fully within the 2019 ASR.

There is no AQMA in Bridport. Following a Detailed Assessment of nitrogen dioxide in Bridport in 2011, the Council resolved not to declare an AQMA but continue monitoring to check future levels of NO₂ here. There are no plans to review this decision at present.

Results for 2017 in Dorchester show the annual mean for NO₂ was met at all monitoring locations both within and outside of the AQMA. West Dorset District Council will continue to monitor at these locations to establish if there is a downward trend that may indicate revoking the AQMA sometime in the next 2-3 years.

Further information about air quality in West Dorset is available at:

<https://www.dorsetforyou.gov.uk/environmental-health/pollution/air-quality-in-west-dorset.aspx>

West Dorset District Council are working proactively with Development Control and local businesses by way of the permitting regime and Dorset County Council to ensure that air quality is continually reviewed. In addition, West Dorset District Council are involved with monitoring for PM_{2.5} Dorset Public Health. This is a Pan-Dorset approach that is not about traditional local hot-spot air quality enforcement, but a multi-year air quality monitoring project that will investigate long-term population level exposure to background air pollution and identify the source of pollutants.

Local Engagement and How to get Involved

Dorset For You website <https://www.dorsetforyou.com/409048> includes measures the public can actively use to improve air quality within the area, these include matters such as interactive cycle maps, adult cycle training and walking routes and trails.

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With the recent publication of the Air quality: draft Clean Air Strategy 2018 the council would look to liaise with Dorset Public Health to undertake some education and awareness raising on the matters discussed within the Strategy. This may include the use of domestic stoves and the choices available to residents, and further work on from the recent Catchment Sensitive Farming (CSF) partnership's pilot study within Dorset work on reducing ammonia emissions from agriculture.

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1 Local Air Quality Management

This report provides an overview of air quality in West Dorset District Council during 2017. 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 West Dorset 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 West Dorset 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://www.dorsetforyou.gov.uk/airquality/west> . 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 AQMA(s).

Table 2.1 – Declared Air Quality Management Areas

[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 concentration at a location of relevant exposure)		Action Plan (inc. date of publication)
						At Declaration	Now	
AQMA Chideock	Declared May 2007, Amended March 2012	NO ₂ annual mean 40 µg/m ³	Chideock	Properties along the A35 in Chideock. The AQMA was amended in 2012.	YES	45.5 µg/m ³ (2006 bias adjusted annual mean)	61.83 µg/m ³ (2017 bias adjusted annual mean)	Chideock Air Quality Action Plan December 2008 https://www.dorsetforyou.gov.uk/environmental-health/pollution/air-quality-in-chideock.aspx
AQMA Dorchester	Declared May 2009	NO ₂ annual mean 40 µg/m ³	Dorchester	Residential properties along High East Street, Dorchester.	YES	43.0 µg/m ³ (2008 bias adjusted annual mean)	37.02 µg/m ³ (2017 bias adjusted annual mean)	Air Quality Action Plan Dorchester April 2011 https://www.dorsetforyou.gov.uk/environmental-health/pollution/air-quality-in-dorchester.aspx

West Dorset 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 West Dorset District Council

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

"The report is well structured, and provides most of the information specified in the Guidance, using the latest template.

1. *Table 2.2 provides measures in progress to improve air quality. The Table has not been updated since 2016, the text is exactly the same as the previous report, where it was also noted that there did not appear to be any update or review of measures within the action plan.*

2. *The main focus of the Annual Status Report, is to update the status of measures within the Action Plan.*

3. *There are no updates provided on any aspect of the Action Plan. Many measures are either completed or have not been updated to reflect progress since the previous update. It is not clear now how many of these measures remain active and part of current or future planned programmes.*

4. *It is an absolute requirement that the measures in Table 2.2 are reviewed and updated annually. If there is any doubt, the Council should refer to the latest Technical Guidance from Defra in LAQM TG(16). Chapter 3 of LAQM TG(16) provides a clear detailed explanation of the focus and required content within the ASR. This is also outlined within the ASR report Template.*

5. *Exceedances of the annual mean NO₂ objective continue to be recorded in Chideock (and Bridport), with no significant improvements in air quality being recorded at these locations.*

6. *It is almost 10years since the Chideock AQAP was issued. Based upon the lack of evidence of significant improvement in air quality in this AQMA, we recommend that this AQAP be reviewed at the earliest opportunity, in order to consider what further measures are required to deliver the required level of traffic generated emissions to achieve the air quality objective,.*

7. *Even though the exceedances at Bridport (sites 717 and 730) are only at a single property location, it is reported as representative of relevant exposure, and therefore requires to be declared as an AQMA.*

8. *This recommendation has been repeated several times without response by the Council. Paragraph 1.01 of TG16 states "Where a local authority identifies areas of non-compliance with the air quality objectives set out in Table 1.1, and there is relevant public exposure, there*

remains a statutory need to declare the geographic extent of non-compliance as an Air Quality Management Area (AQMA) and to draw up an action plan detailing remedial measures to address the problem.”

9. *There have been no exceedances within the Dorchester AQMA for the last two years. When pollution levels have fallen consistently below a level of 10% within the objective level ($36\mu\text{g}/\text{m}^3$), this AQMA should be considered for revocation.”*

It is accepted that West Dorset District Council had not made any updates to Table 2.2. or the Action Plans. Prior to submitting table 2.2, we advised Defra that this was the case, and that reviews were commencing in 2018 to update and review the table. However, it was requested that this was provided.

West Dorset District Council recorded results in 2016 within Dorchester AQMA that fell under the objective level, however, this was not a consistent <10% of that objective.

In May 2018, West Dorset District Council were invited by Highways England to take part in discussions along with Cornwall County Council to evaluate a feasibility study of traffic management options to deliver air quality improvements along the A38 in Tideford and the A35 in Chideock.

The study will consider potential physical changes to the traffic flows, that may have a positive impact upon the emissions within the two local authority areas including a consideration of how these measures may impact upon traffic management further along either road. It is hoped that this will be moved forward during 2018 and the findings provided within the 2019 ASR.

Highways England are engaging with local stakeholders on this matter.

Whilst the measures stated above and in Table 2.2 will help to contribute towards compliance, West Dorset District Council anticipates that further additional measures not yet prescribed will be required in subsequent years to achieve compliance and enable the revocation of Chideock AQMA and work has been commissioned in 2018 by the Highways Authority to look at additional measures not previously considered for this stretch of the A35.

This is supported by West Dorset District Council looking to seek advice from a suitable Air Quality Consultant to provide suggestions and advice for inclusion within a new Air Quality Action Plan.

Table 2.2 – Progress on Measures to Improve Air Quality

Measures within the blue section relate to Dorchester AQMA. Measures within the pink section relate to Chideock AQMA.

Measure No.	Measure	EU Category	EU Classification	Lead Authority	Planning Phase	Implementation Phase	Key Performance Indicator	Target Pollution Reduction in the AQMA	Progress to Date	Estimated Completion Date	Comments
1	Road Traffic Management To implement the Dorchester Transport & Environment Plan (DTEP)	Policy Guidance and Development Control	Regional Groups Co-ordinating programmes to develop Area wide Strategies to reduce emissions and improve air quality	DCC	May 2013 - Nov 2014	Phase 1 – Nov 2014 Phase 2 – Nov 2015.	Reduce air pollution, reduce congestion, reduce traffic noise, improve safety.	N/A	Following the scaling back of DTEP in 2014, the scheme delivers elements that include the deferred maintenance and improvement works, plus some environmental enhancements	Ongoing	DTEP measures have assisted with the reduction in NO ₂ within the AQMA, even with the restrictive measures that went forward. See: https://www.dorsetforyou.gov.uk/roads-highways-maintenance/highway-improvements/west-dorset/dorchester-transport-and-environment-plan-dtep-proposals.aspx
2	Road Traffic Management To undertake an air quality assessment of the proposed DTEP scheme	Policy Guidance and Development Control	Air Quality Planning and Policy Guidance	WDDC, DCC	2012		Quantify likely improvements on air quality.	N/A	Modelling of the scheme was undertaken by White Young Green in 2011. This showed that with the implementation of DTEP, air quality within High West Street and High East Street would reduce by 50% and 20% respectively. However further modelling will be required in 2013 to take into account of amendments in the scheme.	Completed 2013, outcome was amendments would improve NO ₂ .	No further modelling proposed at this time. Reductions are present, however, not to the amount as detailed within the model, due to scaling back of DTEP

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Measure No.	Measure	EU Category	EU Classification	Lead Authority	Planning Phase	Implementation Phase	Key Performance Indicator	Target Pollution Reduction in the AQMA	Progress to Date	Estimated Completion Date	Comments
3	Road Traffic Management A35 Weymouth Road Roundabout and Stinsford Roundabout improvements . The carriageway widths will be widened to 3 lanes on both A35 approaches and to 2 lanes on the approach from Dorchester.	Traffic Management	Strategic highway improvements, Re-prioritising road space away from cars, including Access management, Selective vehicle priority, bus priority, high vehicle occupancy lane	HA	Spring 2011	2012	Reduce congestion and delay, improve the flow on the Dorchester bypass, encourage use of the bypass instead of cutting through the town, improve safety.	N/A	Completed in May 2012. The roundabout has been increased from 50m to 56m and widened to provide traffic splitter islands for entry path curvature. A new additional lane has also been provided for left turn traffic from A35 to A354 Weymouth Road. The roundabout has been increased from 50m to 56m and widened to provide traffic splitter islands for entry path curvature. A new additional lane has also been provided for left turn traffic from A35 to A354 Weymouth Road.	Completed in May 2012.	Completed, no further need to consider in future ASRs
4	Road Traffic Management To promote and expand, where feasible, the Park & Ride services and investigate the potential for a new site in Dorchester.	Alternatives to Private Vehicle Use	Bus based Park & Ride	WDDC	2012, 2013	Temp park and ride July-Sept for the Olympic period. 2014 - Permanent site proposal through the Local Plan.	Reduce traffic in the town centre.	N/A	A new Park and Ride site south of Dorchester is being proposed through the emerging local plan will be linked to DTEP. This plan will be out for consultation in Oct13, with an aim to be adopted by Feb 2014. Permanent site not been implemented yet.		No Park and Ride Service is available in Dorchester any longer. No way to promote this scheme. Will not be considered further.

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Measure No.	Measure	EU Category	EU Classification	Lead Authority	Planning Phase	Implementation Phase	Key Performance Indicator	Target Pollution Reduction in the AQMA	Progress to Date	Estimated Completion Date	Comments
5	Road Traffic Management To investigate the improvement of signage to encourage the use of the Dorchester bypass rather than High West/East Street	Traffic Management	UTC, Congestion management, traffic reduction	HA	2012		Reduce traffic in the town centre, reduce congestion in the High Streets, reduce pollution.	N/A	Improved signage new road scheme was undertaken with the improvements undertaken in action 3. HA have no further plans to increase road traffic signs here. However will be reviewed when DTEP is in place. Linked to DTEP.	Unknown.	No known intention to put this forward. There has been a reduction in the NO2 levels in areas of Dorchester that would have been affected by this proposal.
6	Reduce Vehicle Emissions Replace older bus fleets with cleaner more efficient buses.	Promoting Low Emission Transport	Company Vehicle Procurement - Prioritising uptake of low emission vehicles	DCC	Ongoing	2011 – 2026	Reduction in emissions	N/A	May 2017 saw the introduction of 14 new Euro 6 Buses to be used between Weymouth and Dorchester.		
7	Reduce Vehicle Emissions Provision of Real Time Passenger Information on buses, at bus stops and other key locations, on the web and via text messaging along key routes, including Dorchester	Public Information	Via other mechanisms	DCC	2012	2012	Encourage better use of buses, potentially fewer car journeys, reduced CO2 emissions	N/A	This has been completed along the Dorchester/Weymouth corridor as part of the Weymouth Transport Package.	Completed 2012	

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Measure No.	Measure	EU Category	EU Classification	Lead Authority	Planning Phase	Implementation Phase	Key Performance Indicator	Target Pollution Reduction in the AQMA	Progress to Date	Estimated Completion Date	Comments
8	Reduce Vehicle Emissions The provision of real-time car park information in Dorchester	Public Information	Via other mechanisms	DCC, WDDC	2012	2015	Reduced journey time, reduced emissions and congestion	N/A	In July 2012 the Local Sustainable Transport Fund (LSTF), awarded DCC 200K for variable messaging signage and car parking guidance in Dorchester. This will be implemented from 2013.	Completed 2012	No Park and Ride Service is available in Dorchester any longer. No way to promote this scheme. Will not be considered further.
9	Reduce Vehicle Emissions Ensure that air pollution from DCC's own activities is reduced	Vehicle Fleet Efficiency	Driver training and ECO driving aids	DCC	Ongoing	Ongoing	Reduced CO ₂ emissions, potential financial savings	N/A	Expansion of the use of bio-diesel by County Council Fleet vehicles. Encouraging the uptake of clean, low carbon vehicles and fuels, including increasing the availability of low carbon fuels locally. Development of a safer driving policy for County Council staff, including fleet and lease drivers, that teaches and promotes safer eco-driving techniques.	Continual	

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Measure No.	Measure	EU Category	EU Classification	Lead Authority	Planning Phase	Implementation Phase	Key Performance Indicator	Target Pollution Reduction in the AQMA	Progress to Date	Estimated Completion Date	Comments
10	<p>Reduce Vehicle Emissions</p> <p>Ensure that air pollution from WDDC's own activities is reduced by: Continuing drive to better fuel efficiency, engine emission standards and emission controls on council owned and leased vehicles; Monitoring the implementation of the Carbon Management Plan to reduce emissions resulting from both business travel and travel to work.</p>	Vehicle Fleet Efficiency	Driver training and ECO driving aids	WDDC	Ongoing	Ongoing	Reduced pollution from WDDC vehicles, additional travel time	N/A	Through the CMP a car share scheme is in place. Other actions include the use of pool cars and bicycles for staff and flexible working practices.	Unknown	This continues and a larger emphasis has since been put in place for remote working due to the introduction of North Dorset District Council to the Partnership.
11	<p>Reduce Vehicle Emissions</p> <p>Continue promoting Carsharedorset</p>	Promoting Travel Alternatives	Other	DCC	N/A	Ongoing	Potential for reduced car ownership, reduced CO ₂ emissions, potential financial savings for users	N/A	DCC are continuing to promote carsharedorset and currently have over 3000 members and will be integrated with TravelDorset.	Unknown	
12	<p>Reduce Vehicle Emissions</p> <p>To explore working with larger vehicle operators in Dorchester to explore the feasibility of improving their own emissions and minimise vehicle movements.</p>	Promoting Low Emission Transport	Company Vehicle Procurement - Prioritising uptake of low emission vehicles	DCC			Reduced traffic in the town centre, reduced CO ₂ emissions	N/A	The Freight Strategy encompasses an overall but does not specifically target Dorchester.	Unknown	DCC were looking into this again early 2018, for assisting with improvements in Weymouth. This would have a positive effect to the West Dorset Area too.

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Measure No.	Measure	EU Category	EU Classification	Lead Authority	Planning Phase	Implementation Phase	Key Performance Indicator	Target Pollution Reduction in the AQMA	Progress to Date	Estimated Completion Date	Comments
13	Take account of Air Quality issues in tendering process (where relevant)	Policy Guidance and Development Control	Sustainable Procurement Guidance	DCC/WDDC	Ongoing	Ongoing	Protect air quality when letting contracts for goods and services	N/A	WDDC includes environmental performance in their procurement policy and practices		
14	Refer to AQMA as an issue in developing the Local Development Framework and in bringing forward Local Transport Plan improvement schemes	Policy Guidance and Development Control Traffic Management	Air Quality Planning and Policy Guidance Strategic highway improvements, Re-prioritising road space away from cars, including Access management, Selective vehicle priority, bus priority, high vehicle occupancy lane	WDDC (DC)	2012-2013	2014	Reduce the potential for increased air pollution from development	N/A	The current local plan was adopted by West Dorset District Council and by Weymouth & Portland Borough Council in October 2015. National policy requires a review of the plan every five years. This review needs to identify additional land capable of meeting housing needs. This means providing enough sites to enable the development of 15,880 homes by 2036.		Local Plan proposals are currently available to consultation
15	Ensure that the AQMA is taken into account as a material consideration in Development Control.	Policy Guidance and Development Control	Air Quality Planning and Policy Guidance	WDDC (DC)	Ongoing		Reduce the potential for increased air pollution from development	N/A	Air Quality is a material Planning consideration and is referred to in the current Local Plan.		Continues

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Measure No.	Measure	EU Category	EU Classification	Lead Authority	Planning Phase	Implementation Phase	Key Performance Indicator	Target Pollution Reduction in the AQMA	Progress to Date	Estimated Completion Date	Comments
16	To continue to monitor for NO2 in High East Street and Dorchester until the annual objective has been met and the AQMA revoked.	Public Information	Other	WDDC (EH)	Ongoing	Ongoing	Provide good air quality information. Be able to target specific areas of concern	N/A	Monitoring continues and there are no plans to make any changes		NO2 levels are now within AQO, but not within 10%
17	Road Traffic Management Detailed modelling of HGVs going through Chideock, including various HGV reduction scenarios.	Freight and Delivery Management	Route Management Plans/ Strategic routing strategy for HGV's	DCC, WDDC				N/A	Detailed air quality modelling concluded that removal the larger HGVs (A5 and A6) would reduce NO ₂ concentrations by approx 18%	Completed 2011	
18	Road Traffic Management Seek to secure voluntary agreement with Freight Transport Association (FTA) to encourage HGVs from using A35.	Freight and Delivery Management	Route Management Plans/ Strategic routing strategy for HGV's	HA				N/A	In 2011 the HA undertook a reliability study of using the alternative route – M3/A303. The findings have been sent to the FTA. WDDC have suggested that the Parish Council may wish to carry forward this work.	Ongoing	
19	Road Traffic Management Questionnaire to all members of the FTA to find out who uses the A35 and what would encourage them not to use the A35	Freight and Delivery Management	Route Management Plans/ Strategic routing strategy for HGV's	HA				N/A	Questionnaire sent out. 73% responded out of these use the A35 for local deliveries, cost and time were the major factors to encourage using the alternative route.	2012 completed	

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Measure No.	Measure	EU Category	EU Classification	Lead Authority	Planning Phase	Implementation Phase	Key Performance Indicator	Target Pollution Reduction in the AQMA	Progress to Date	Estimated Completion Date	Comments
20	Road Traffic Management Check routes taken by continental HGV's	Freight and Delivery Management	Route Management Plans/ Strategic routing strategy for HGV's	HA				N/A	Study undertaken by WDDC showed 27% HGV traffic not local, to target this group.	2011 completed	

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Measure No.	Measure	EU Category	EU Classification	Lead Authority	Planning Phase	Implementation Phase	Key Performance Indicator	Target Pollution Reduction in the AQMA	Progress to Date	Estimated Completion Date	Comments
21	<p>Road Traffic Management</p> <p>Review reliability of M3 / A303 and A31 / A35 routes between Southampton and Honiton (Issues: distance, journey times, fuel costs, carbon emissions).</p>	Freight and Delivery Management	Route Management Plans/ Strategic routing strategy for HGV's	HA				N/A	<p>Review has been completed. The results of the study concluded that:the A303 route is approximately 27 miles longer, the average journey times are very similar, ranging from 120 minutes to 127 minutes (this is an average for all vehicles). Over the 12 month period April 10 - March 11, the A303 route has been shown to be more reliable, with 82-83% of journeys 'on time', compared with 77-79% of journeys via the A31/A35. The alternative route could be approximately £20 cheaper for a freight vehicle on a return trip. Although the M3/A34/A303 is longer, the differences in the nature of the two routes mean that the M3/A34/A303 may have lower fuel consumption, which impacts upon the costs.</p>	2013 completed	

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Measure No.	Measure	EU Category	EU Classification	Lead Authority	Planning Phase	Implementation Phase	Key Performance Indicator	Target Pollution Reduction in the AQMA	Progress to Date	Estimated Completion Date	Comments
22	Road Traffic Management Publicity campaign to encourage HGVs from using the A35	Freight and Delivery Management	Route Management Plans/ Strategic routing strategy for HGV's	HA		Ongoing		N/A	The review in Action 17 has been provided to the Road Hauliers Association (RHA) and reported in their Journal.	Ongoing	
23	Road Traffic Management Voluntary HGV Survey to be undertaken in Chideock	Freight and Delivery Management	Route Management Plans/ Strategic routing strategy for HGV's	HA				N/A	Undertaken by WDDC. Identified the majority of HGV's driving through the village were local, however 27% were trans-regional.	Completed 2011	

All measures within the pink section of Table 2.2, will be reviewed in 2018 along with the Highways England's Feasibility Study

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.

Defra's national background maps have been used to identify the modelled PM_{2.5} concentrations for the calendar year 2017.

The average of Total PM_{2.5} of all 1116 locations (centre point of 1 km x 1 km grids) was 8.88µg/m³ (Min 7.56 µg/m³ and Max 11.20µg/m³).

PM_{2.5} concentrations are considered to be well below the EU Limit Value of 25 µg/m³.

West Dorset District Council is taking the following measures to address PM_{2.5}:

As part of a Pan-Dorset project, we are actively monitoring for PM_{2.5} in one location within our council area. This project is taking a different approach to local air quality, by carrying out a multi-year air quality study that will investigate long-term population level exposure to background levels of PM_{2.5} and identify the source of pollutants.

The project is funded and co-ordinated by colleagues in Public Health Dorset.

The monitoring methods will be by way of a number of AQMesh Pods, which will be collocated and referenced to an existing Real-Time analyser within Weymouth and Portland Borough Council. In addition, Omni Samplers will be used to collect physical samples of particulates and then analysed to establish the speciation of particles throughout our County.

The project's partners comprise:

Public Health Dorset

Weymouth and Portland Borough Council

West Dorset District Council

North Dorset District Council

Poole Borough Council

Bournemouth Borough Council

Purbeck District Council

Christchurch Borough Council

Southampton University

The AQMesh (<https://www.aqmesh.com>) have been in operation from early 2018 throughout Dorset. The project's initial duration is anticipated to be approximately 2 years.

In addition, the Council is taking the following measures to address PM_{2.5}:

- Inspection of processes under the LAPPC Regime.
- Liaise with Dorset County Council (the Highway Authority) with regards to improvements schemes on the road infrastructure as and when necessary
- The AQAP in place looks at measures to reduce the exposure of residents within the AQMAs to NO₂, however, these initiatives will have a positive effect on PM_{2.5} levels within our local authority.

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

3.1 Summary of Monitoring Undertaken

3.1.1 Automatic Monitoring Sites

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

West Dorset District Council ceased its automatic (continuous) monitoring for oxides of nitrogen at Chideock in 2016. The analyser was in operation within Main Street, Chideock, next to the A35 Trunk Road. Monitoring continued from January 2010 to December 2016.

The monitor was situated approximately 2m from the A35 trunk road in Main Street, Chideock. Due to location restrictions in Chideock the monitor was not situated in the worst case location, along the steep incline, westwards towards Lyme Regis. This is due to a lack of space and limited access to utilities. The monitor was located at a representative location regarding the distance of the monitor to the road and the distance from the road and receptors. However as this site is in an open location; the readings here represent background levels of nitrogen dioxide and are way below the annual mean objective.

Results from the analyser were used to calculate a local bias adjustment factor with a 95% confidence interval as an estimate of the uncertainty on the bias adjustment factor (source: <https://laqm.defra.gov.uk/bias-adjustment-factors/local-bias.html>).

When the results from the colocation study passed Defra's precision and accuracy test, then this was applied as the final bias adjustment factor to annual mean results from other NO₂ diffusion tube sites in Chideock. The data used to produce the local bias adjustment factor, (when applicable) was provided to Defra to be used within its calculation of the National Bias Adjustment Factor.

3.1.2 Non-Automatic Monitoring Sites

Continuous monitoring is a very expensive way of assessing air quality. The main pollutant of concern in the district is nitrogen dioxide and there is a way of monitoring this at a low cost. Passive diffusion tubes are relatively inexpensive and provide a

monthly average of NO₂ concentrations. Because of the low cost, they allow West Dorset to monitor NO₂ widely across the district.

Diffusion tubes are exposed for 4/5 week periods throughout the year at each monitoring site and are deployed using a holder and rubber collar method. They are located at a variety of sites, including kerbside sites, roadside sites or background sites and placed approximately 2m above ground level and positioned at locations representative of public exposure.

The tubes are supplied and analysed by Gradko International Ltd, and the preparation method used is 50% TEA in acetone.

Monitoring is currently undertaken in three areas of West Dorset where elevated levels of nitrogen dioxide had been identified. Monitoring was discontinued in Sherborne, Lyme Regis and Abbotsbury in 2010 as there had been no exceedences of the annual objective for the past 8 years.

Chideock - A small village in West Dorset, dwellings are situated either side of the A35 (trunk road) going through the village with dwellings immediately adjacent to a steep incline leaving the village going west. An air quality management area for NO₂ has been declared along the A35 as annual average NO₂ concentrations here exceed the annual objective concentration

Dorchester –The County Town of Dorset, with a population of approximately 19,000. WDDC have been monitoring nitrogen dioxide within the town centre, predominantly along the B3150 High East and High West Street where some exceedences of the AQO have been observed. Due to these exceedences an AQMA was declared on the 5th May 2009 along High East Street. It was decided to undertake further monitoring in High East Street in 2010 to assess the extent of the NO₂ levels, to extend the monitoring along High East and High West Street and to relocate monitoring sites to the routes predicted to be affected by the proposed Dorchester Transport & Environment Plan (DTEP) transport improvements.

Bridport - A market town located approximately 1km from the coast and 20km west of Dorchester. Annual average NO₂ concentrations adjacent to the A35 (trunk road) along East Road are monitored by WDDC and have been found to exceed the annual objective concentration at one dwelling located very close to the kerbside.

The study area in Bridport consists of the A35 along East Road on the eastern side of Bridport.

West Dorset District Council undertook non- automatic (passive) monitoring of NO₂ at 24 sites during 2017. Table A.1 in Appendix A shows the details of the sites.

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

3.2 Individual Pollutants

The air quality monitoring results presented in this section are, where relevant, adjusted for bias, “annualisation” and distance correction. Further details on adjustments are provided in Appendix C.

3.2.1 Nitrogen Dioxide (NO₂)

Table A.1 in Appendix A compares the ratified and adjusted monitored NO₂ annual mean concentrations for the past 5 years with the air quality objective of 40µg/m³.

For diffusion tubes, the full 2017 dataset of monthly mean values is provided in Appendix B.

Review of monitoring and results within Dorchester

Monitoring has continued at the same sites within the Dorchester AQMA and surrounding area, with the introduction of one tube within the AQMA – 741 Tom Browns – located towards the end of the AQMA. There are no intentions to change these locations throughout 2018/2019.

West Dorset District Council have noted a reduction in levels of NO₂, generally. However, the reduction has not yet achieved a consistent level of below 10% of the Objective at monitoring within the AQMA.

The AQMA cannot therefore be considered for revocation at this time.

Please see Appendix A, and Figure A1 for these data.

Review of monitoring and results within Bridport

Bridport's monitoring locations have not changed. It is noted by West Dorset District Council that Defra do not accept the Elected Members decision not to declare an AQMA for the two locations that represent relevant exposure 730 and 717.

Results do show a small reduction the two locations which exceed the AQO, and officers will continue to advise that our statutory functions with respect to declaration of an AQMA for that one dwelling be fulfilled.

Please see Appendix A, and Figure A3 for these data.

Review of monitoring and results within Chideock.

West Dorset District Council identified anomalies with the results from September 2017's diffusion tube monitoring. The Laboratory results suggested that there had been occasions where tubes had been transposed.

The laboratory were contacted and the matter investigated by both the analysts and the council. From this, it is in the opinion of WDDC that there has been an error with either deploying or labelling the tubes prior to deployment and the council does not have confidence in using the September 2017 data for the 2017 annual mean calculations for nitrogen dioxide.

The Quality Assurance and Quality Control Procedures for diffusion tubes were reviewed (last undertaken in 2014). A new procedure (in line with Defra Guidance) was trialled for the deployment of the diffusion tubes, by a new team then implemented. This is provided for inclusion within the QA/QC Section for further transparency, as the council have been criticised on this point.

Further evaluation of the results for the purposes of the ASR highlighted that there had been additional months where tubes had been incorrectly deployed. These were easily identified and those results updated. Both sets of results have been provided within the QA/QC Section of this ASR.

Fortunately, each location had more than 9 months data recorded, and therefore the annualisation procedure within TG(16) was not needed to be undertaken

Only a small change in the monitoring within Chideock, the co-location diffusion tubes which were deployed in tandem with the real time analyser were removed.

Overall, WDDC does not see a significant change in the annual mean results within this monitoring location.

Please see Appendix A, and Figure A2 for these data.

3.2.2 Particulate Matter (PM₁₀)

West Dorset District Council do not carry out any monitoring for PM₁₀

3.2.3 Particulate Matter (PM_{2.5})

Whilst West Dorset District Council has started monitoring as part of a joint project with Dorset Public Health, as discussed above.

3.2.4 Sulphur Dioxide (SO₂)

West Dorset District Council do not carry out any monitoring for SO₂

Appendix A: Monitoring Results

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

Site ID	Site Name	Site Type	X OS Grid Ref	Y OS Grid Ref	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)
711	Dorchester High West Street	Roadside	369121	90739	NO ₂	N	Y - on Façade	2m	N	2.5
712	Dorchester Trinity Street	Roadside	369171	90711	NO ₂	N	Y - on Façade	2m	N	2.5
713	Dorchester High East Street 2	Roadside	369484	90759	NO ₂	Y	Y – on façade	2m	N	2.5
714	Dorchester High East Street 1	Roadside	369387	90742	NO ₂	Y	Y – on façade	2m	N	2.5
715	Dorchester The Grove	Roadside	368907	90739	NO ₂	N	Y (2m)	2m	N	2.5

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716	Dorchester Maumbury Road	Roadside	368948	90089	NO ₂	N	Y – on façade	2m	N	2.5
718	Dorchester Church Street	Roadside	369381	90698	NO ₂	N	Y – on façade	2m	N	2.5
719	Dorchester Bridport Road	Roadside	368815	90636	NO ₂	N	Y (2m)	2m	N	2.5
720	Dorchester Borough Gardens	Background	368982	90453	NO ₂	N	5m	N/A	N	2.5
721	Dorchester High West Street 2	Roadside	368982	90706	NO ₂	N	Y – on façade	3m	N	2.5
741	Dorchester Tom Browns	Roadside	369468	90756	NO ₂	Y	Y – on façade	2.5	N	2.5
717	Bridport East Road 1	Roadside	347557	93023	NO ₂	N	Y – Representative of public exposure	2m	N	2.5

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730	Bridport East Road 2	Roadside	347612	93050	NO ₂	N	Y – Representative of public exposure	2m	N	2.5
731	Bridport East Road	Roadside	347277	92867	NO ₂	N	N – 14m	4m	N	2
732	Bridport Askers Mead	Roadside	347262	92873	NO ₂	N	Y (2m)	2m	N	2.5
733	Dorchester Great Western Road	Roadside	369002	90275	NO ₂	N	Y – on façade	2m	N	2.5
734	Bridport East Road 4	Roadside	347489	92989	NO ₂	N	Y (1.5m)	2m	N	2.5
722	Chideock Main Street	Roadside	342364	92814	NO ₂	N	Y (2m)	1.5m	N	2
723	Chideock St Giles Church	Roadside	342151	92869	NO ₂	N	Y – Representative of public exposure	2m	N	2
724	Chideock	Roadside	342190	92840	NO ₂	Y	Y – on façade	1m	N	2.5

	Duck Street									
725	Chideock George Inn	Kerbside	342486	92791	NO ₂	N	Y – Representative of public exposure	0m	N	2
726	Chideock Village Hall	Roadside	342015	92887	NO ₂	Y	Y – Representative of public exposure	2m	N	2.5
727	Chideock Main Street	Roadside	341946	92908	NO ₂	Y	Y – on façade	1m	N	2
728	Chideock Main Street	Roadside	342025	92894	NO ₂	N	Y – Representative of public exposure	1.5m	N	2
738	Greenhills	Roadside	341678	93040	NO ₂	Y	3.5m	17m	N	2.5

Notes:

- (1) 0m if the monitoring site is at a location of exposure (e.g. installed on/adjacent to the façade of a residential property).
(2) N/A if not applicable.

Table A.1 – Annual Mean NO₂ Monitoring Results

e ID	Site Type	Monitoring Type	Valid Data Capture for Monitoring Period (%) ⁽¹⁾	Valid Data Capture 2017 (%) ⁽²⁾	NO ₂ Annual Mean Concentration (µg/m ³) ⁽³⁾				
					2013	2014	2015	2016	2017
Chideock	Roadside	Automatic		n/a	13.21	11.32	10.31	10.9	N/A
711	Roadside	Diffusion Tube		91.67	40.1	38.2	34.4	34.2	36.6
712	Roadside	Diffusion Tube		91.67	32.3	30.0	31.1	29.3	30.7
713	Roadside	Diffusion Tube		100	32.6	34.0	32.0	33.5	31.4
714	Roadside	Diffusion Tube		100	37.5	46.7	38.4	37.9	37
715	Roadside	Diffusion Tube		91.67	35.6	37.3	34.7	33.9	32.8
716	Roadside	Diffusion Tube		75.00	28.3	29.9	27.5	29.0	27.5
718	Roadside	Diffusion Tube		100	22.2	21.3	18.8	20.5	19.3
719	Roadside	Diffusion Tube		100	26.5	24.8	22.4	25.6	22
720	Background	Diffusion Tube		83.33	13.2	11.6	11.3	11.4	14.6
721	Roadside	Diffusion Tube		100	35.8	31.0	28.7	30.7	29
741	Roadside	Diffusion Tube		33.33					38.87
717	Roadside	Diffusion Tube		100	43.1	41.7	42.7	47.6	44.2
730	Roadside	Diffusion Tube		91.67	64.6	58.5	53.0	51.5	46.4
731	Roadside	Diffusion		91.67	33.0	32.5	33.2	31.5	28.8

		Tube							
732	Roadside	Diffusion Tube		100	35.0	37.8	35.1	34.0	32
733	Roadside	Diffusion Tube		100	31.9	28.9	28.0	28.2	23.8
734	Roadside	Diffusion Tube		100	34.5	32.2	32.5	32.3	27.9
722	Roadside	Diffusion Tube		83.33	19.5	26.8	16.8	19.7	23
723	Roadside	Diffusion Tube		N/A	25.8	22.9	20.8		
724	Roadside	Diffusion Tube		91.67	42.9	36.7	36.7	47.7	41.9
725	Kerbside	Diffusion Tube		91.67	27.2	26.2	23.1	25.5	28.2
726	Roadside	Diffusion Tube		91.67	45.4	41.8	39.2	47.8	40.9
727	Roadside	Diffusion Tube		91.67	55.3	53.0	50.0	58.9	56.5
728	Roadside	Diffusion Tube		91.67	29.4	25.6	23.4	27.0	26.7
738	Roadside	Diffusion Tube		91.67				20.5	17.9

Diffusion tube data has been bias corrected

Annualisation has been conducted where data capture is <75%

Notes:

Exceedances of the NO₂ annual mean objective of 40µg/m³ are shown in **bold**.

NO₂ annual means exceeding 60µg/m³, indicating a potential exceedance of the NO₂ 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.

Figure A.1 – Trends in Annual Mean NO₂ Concentrations: Dorchester

General downward reduction shown in the Diffusion Tube results from the Dorchester Survey:

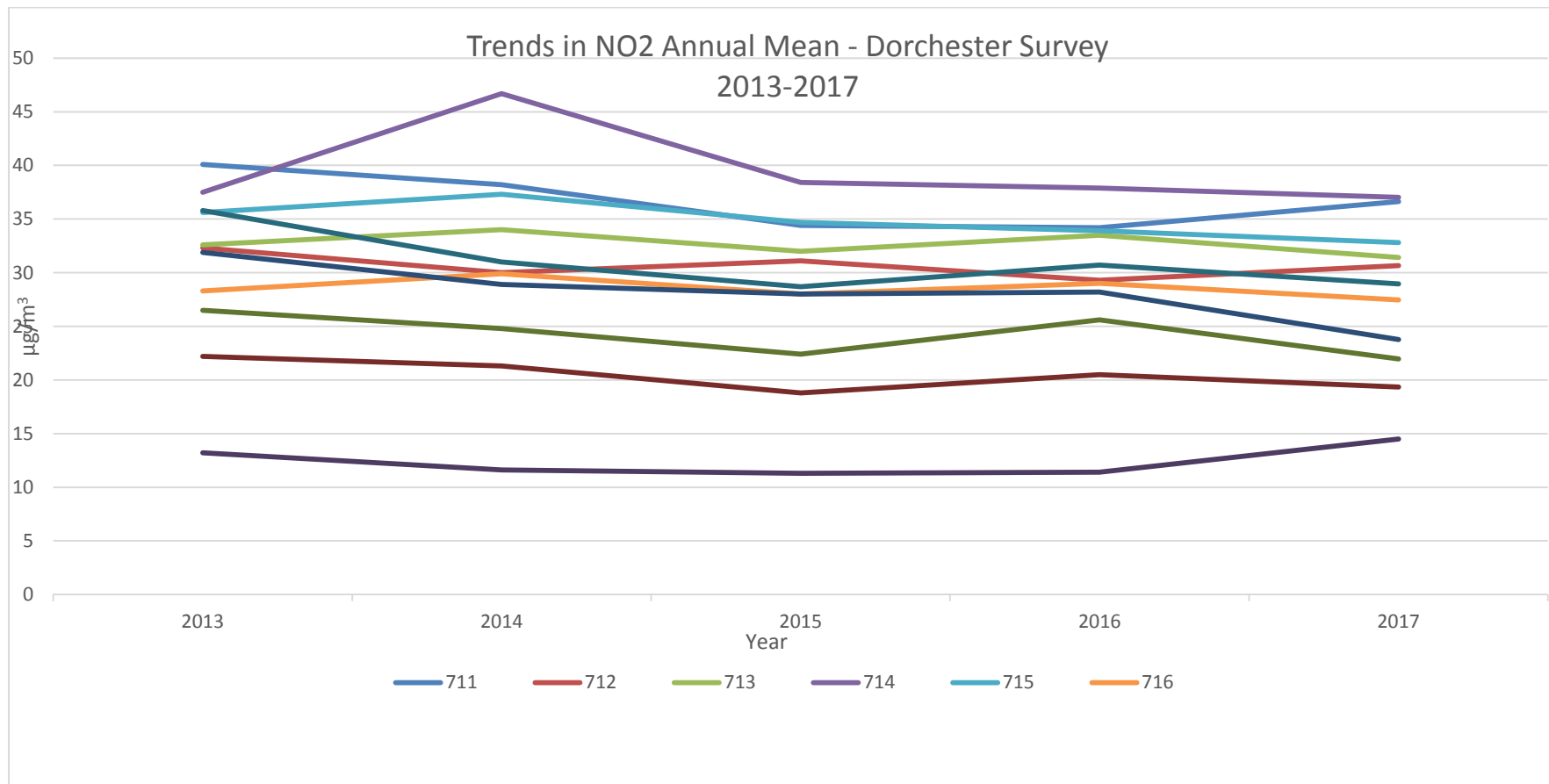


Figure A.2 – Trends in Annual Mean NO₂ Concentrations: Chideock

After an increase in NO₂ levels 2015-2016, levels seem to have started to drop again, shown in the Diffusion Tube results from the Chideock Survey:

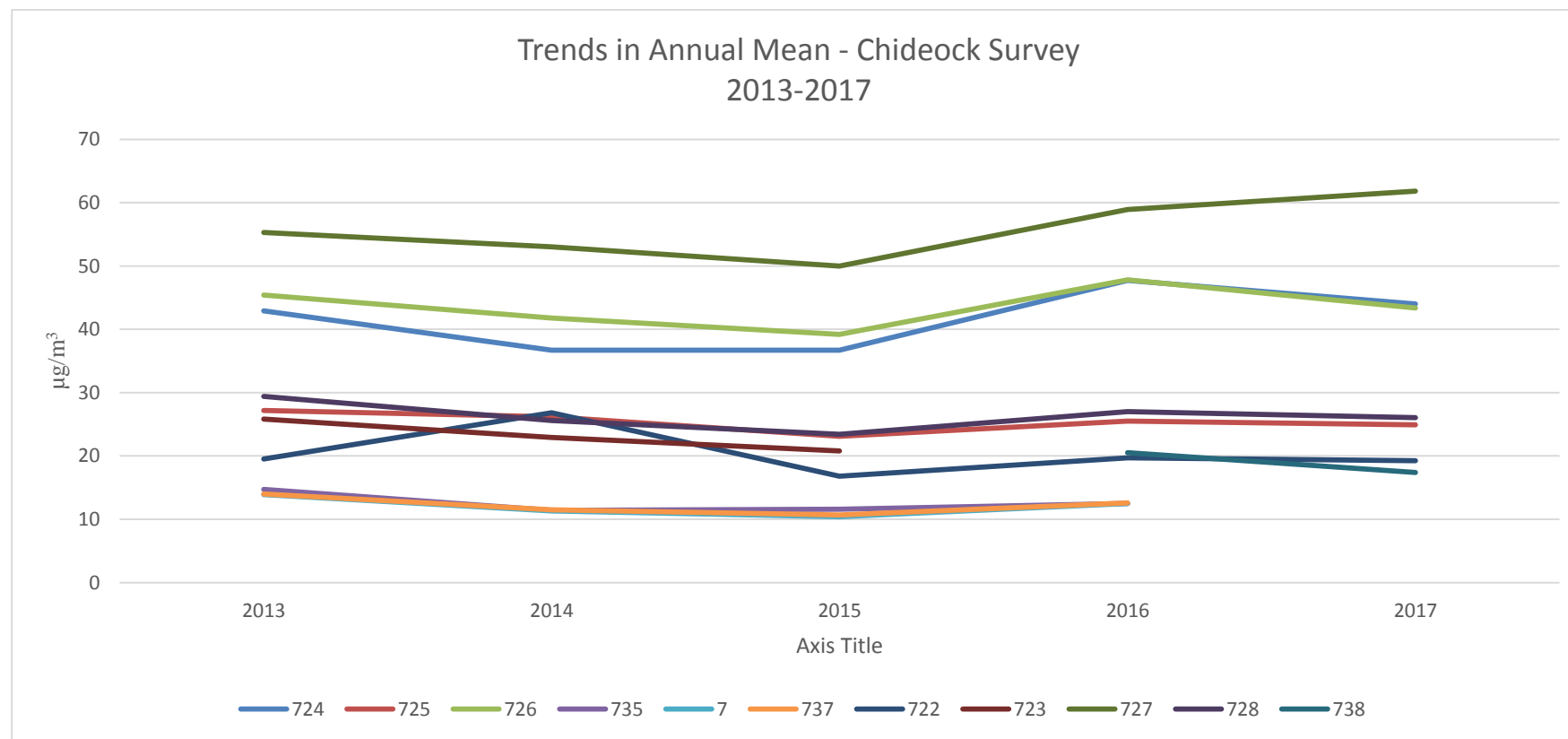
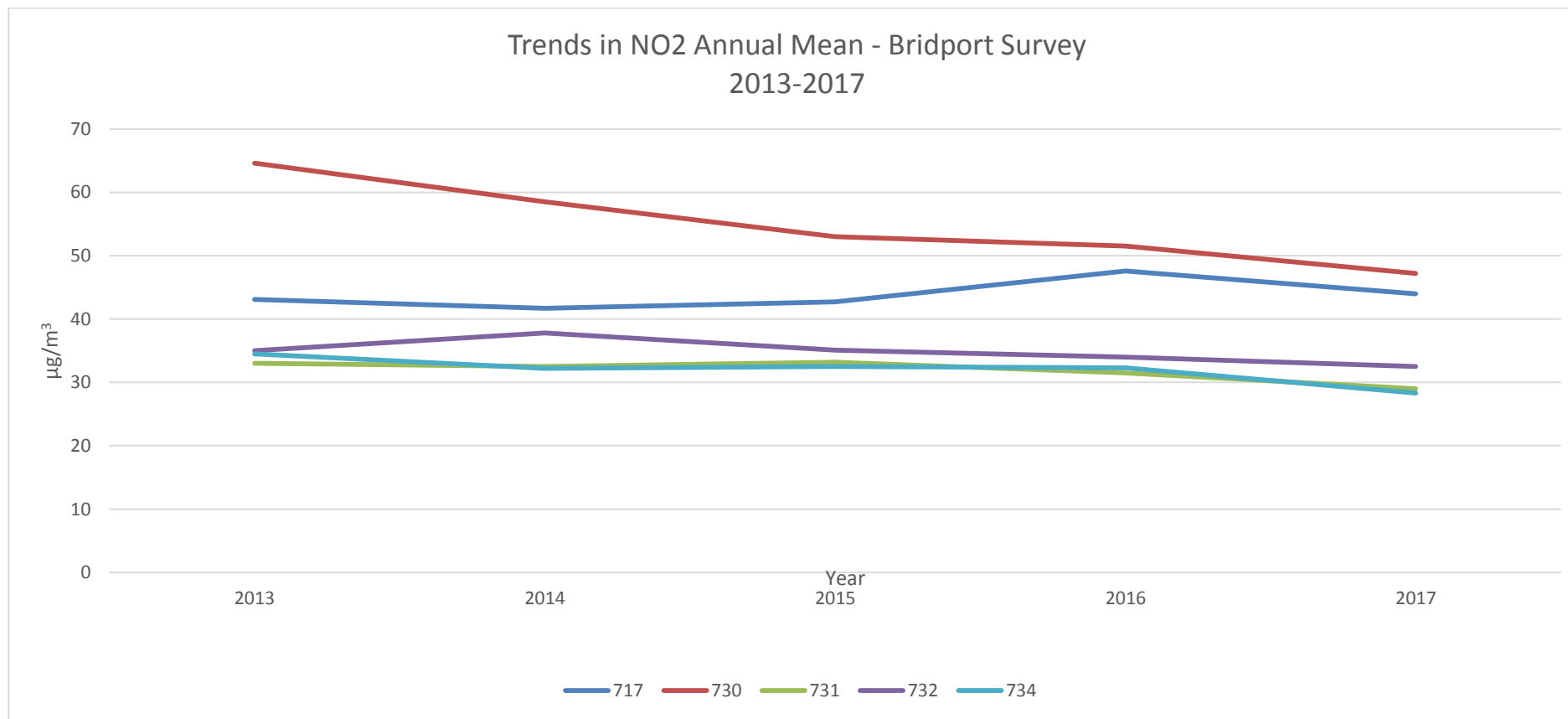


Figure A.3 – Trends in Annual Mean NO₂ Concentrations: Bridport

General downward reduction shown in the Diffusion Tube results from the Bridport Survey:



Appendix B: Full Monthly Diffusion Tube Results for 2017

Table B.1 – NO₂ Monthly Diffusion Tube Results - 2017

Site ID	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 (0.96) and Annualised ⁽¹⁾	Distance Corrected to Nearest Exposure ⁽²⁾
Dorch High West St 1 711	m	39.0	41.6	46.8	35.4	37.1	30.8	37.9	43.3	34.6	37.2	36.2	38.2	36.63	36.63
Dorch Trinity Street 712	37.2	33.9	34.5	33.7	22.8	29.9	24.8	27.0	47.6	m	34.0	31.1	31.9	30.66	30.66
Dorch High East St 2 713	44.8	31.4	37.8	30.7	31.1	35.4	29.8	32.8	34.4	32.0	32.8	32.1	32.7	31.43	31.43
Dorch High East St 1 714	48.9	47.9	44.0	30.9	37.9	49.9	40.0	43.4	12.5	42.5	32.8	42.6	38.6	37.02	37.02
Dorch The Grove 715	35.6	37.8	29.1	33.9	31.3	35.7	32.9	33.6	m	36.7	40.1	30.6	34.2	32.81	32.81
Dorch Maumbury Road 716	36.6	27.5	27.6	26.2	23.3	m	25.2	30.4	m	m	36.6	32.0	28.6	27.45	27.45
Dorch Great Western Rd 733	34.8	23.4	m	23.0	21.2	20.5	19.6	20.6	32.5	26.5	31.9	28.2	24.7	23.76	23.76
Dorch Church Street 718	32.0	20.6	20.1	21.5	17.9	16.8	15.2	17.9	27.6	18.5	25.0	20.5	20.1	19.34	19.34
Dorch Bridport Road 719	41.9	23.3	25.1	26.2	23.3	21.4	18.4	19.8	23.2	22.2	25.4	23.4	22.9	21.96	21.96
Dorch Borough Gardens 720	19.1	15.0	11.6	8.4	M	13.2	6.5	8.0	27.6	32.1	m	13.6	15.1	14.50	14.50

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Dorch High West St 2 721	50.3	35.1	29.8	32.7	28.0	26.6	25.2	29.4	24.5	33.3	38.1	29.2	30.2	28.96	28.96
Dorch Tom Browns 741	-	-	-	-	-	-	-	-	17.3	25.1	41.1	36.4	30.95	40.48	40.48
Bridport East Road 717	43.6	44.7	42.6	45.7	53.3	49.7	42.4	53.9	22.6	62.0	47.6	42.1	45.9	44.02	44.02
Bridport East Road 2 730	57.9	49.0	m	53.2	63.4	55.0	51.5	55.5	28.1	42.5	43.9	41.1	49.2	47.23	47.23
Bridport East Road 731	33.2	28.4	29.9	28.8	33.5	36.6	28.4	m	29.1	31.1	28.3	25.5	30.3	29.04	29.04
Bridport Askers Mead 732	39.5	31.4	32.3	42.6	31.5	37.0	30.4	32.9	26.1	34.5	37.4	30.3	33.8	32.47	32.47
Bridport East Road 4 734	33.9	26.1	32.7	24.0	25.5	33.0	25.6	34.9	25.5	31.6	32.1	29.2	29.5	28.32	28.32
Hope Cottage 722	24.5	19.5	m	20.4	21.6	20.2	16.3	20.9	m	16.8	23.3	16.8	20.0	19.23	19.23
Greenhill 738	25.1	20.7	19.5	17.3	21.5	16.1	10.9	16.9	m	15.9	19.2	16.2	18.1	17.38	17.38
Chideock Duck St 724	45.7	44.8	41.2	45.2	49.1	52.2	42.7	55.8	m	41.4	40.3	m	45.9	44.02	44.02
George Inn 725	33.0	25.2	25.5	27.3	25.0	23.7	20.7	25.9	m	25.9	29.5	23.7	25.9	24.91	24.91
Chideock Village Hall 726	46.6	39.6	48.0	40.8	46.8	51.0	41.5	50.0	m	47.4	47.1	38.5	45.2	43.38	43.38
Chideock Whitecroft 727	59.7	47.4	57.0	80.2	65.2	72.8	63.9	78.4	m	70.6	59.8	53.6	64.4	61.83	61.83
Chideock Warren House 728	27.6	25.6	28.0	33.0	30.3	27.9	23.2	27.6	m	22.8	28.4	24.0	27.1	26.04	26.04

Local bias adjustment factor used

National bias adjustment factor used

Annualisation has been conducted where data capture is <75%

Where applicable, data has been distance corrected for relevant exposure

Notes:

Exceedances of the NO₂ annual mean objective of 40µg/m³ are shown in **bold**.

NO₂ annual means exceeding 60µg/m³, indicating a potential exceedance of the NO₂ 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

QA/QC of Diffusion Tube Monitoring

The UKAS accredited laboratory, Gradko International Limited supply and analyse the diffusion tubes, which are a preparation of 50% TEA (triethanolamin) / Acetone. Tubes are handled in accordance with the instruction within LAQM.TG(16), 7.185.

Gradko International participate in the AIR/WASP NO₂ Proficiency Testing Scheme. In the four periods assessed in 2018 the laboratory received a score of 100%.

<http://laqm.defra.gov.uk/diffusion-tubes/qa-qc-framework.html>

For the purposes of Local Air Quality Management, tube precision is separated into two categories, “Good” or “Poor”, tubes are considered to have good precision where the coefficient of variation of duplicate or triplicate diffusion tubes for eight or more periods during the year is less than 20% and the average CV of all monitoring periods is less than 10%.

The results of precision testing show that Gradko International had “Good” precision for 23 out of 25 studies for 2017. <http://laqm.defra.gov.uk/diffusion-tubes/precision.html>

Review of Data prior to calculating Annual Mean for Chideock

As mentioned, errors with officer deployment of diffusion tubes resulted in a new internal procedure being trialled and introduced. Also, a review of the data collected was undertaken, as the results from monitoring within Chideock looked fundamentally incorrect.

The raw data from the diffusion tubes were as follows:

Unadjusted results - not corrected for council deployment errors										
2017	Hope Cottage 722	Greenhill 738	ChideockD uck St 724	George Inn 725	ChideockVi llage Hall 726	Chideock Whitcroft 727	Chideock Warren House 728	ChideockP ost Office 735	ChideockP ost Office 736	ChideockP ost Office 737
Jan	59.7	25.1	45.7	33.0	46.6	24.5	27.6	18.8	17.9	17.5
Feb	47.4	20.7	44.8	25.2	39.6	19.5	25.6	14.7	13.5	13.5
Mar	m	19.5	41.2	25.5	48.0	57.0	28.0	13.1	12.7	11.2
Apr	20.4	17.3	45.2	27.3	40.8	80.2	33.0	12.5	13.0	11.2
May	21.6	21.5	49.1	25.0	46.8	65.2	30.3	10.5	11.5	11.1
Jun	20.2	16.1	52.2	23.7	51.0	72.8	27.9	11.0	10.3	10.6
Jul	16.3	10.9	42.7	20.7	41.5	63.9	23.2	-	-	-
Aug	20.9	16.9	55.8	25.9	50.0	78.4	27.6	-	-	-
Sept	35.5	31.2	23.2	70.7	18.7	26.3	35.5	-	-	-
Oct	16.8	15.9	41.4	25.9	47.4	70.6	22.8	-	-	-
Nov	23.3	19.2	40.3	29.5	47.1	59.8	28.4			
Dec	16.8	16.2	m	23.7	38.5	53.6	24.0			
Average	38.2	20.6	45.7	28.3	42.5	39.0	25.8			
Bias Adjusted	36.7	19.8	43.9	27.2	40.8	37.5	24.7			

For January and February, it was obvious to West Dorset District Council, that tubes 722 and 727 were deployed incorrectly.

In September, there were a number of erroneous data that , after email correspondence with the lab, were decided to be discounted from the calculations for the annual mean. The October results were considered to be appropriate for the locations and not altered in any way.

Therefore, the final data that has been put forward within this report are as follows:

West Dorset District Council

2017	Hope Cottage 722	Greenhill 738	Chideock Duck St 724	George Inn 725	Chideock Village Hall 726	Chideock Whitecroft 727	Chideock Warren House 728	Chideock Post Office 735	Chideock Post Office 736	Chideock Post Office 737	Notes
Jan	24.5	25.1	45.7	33.0	46.6	59.7	27.6	18.8	17.9	17.5	likely that 727 & 722 incorrectly deployed. Results swapped
Feb	19.5	20.7	44.8	25.2	39.6	47.4	25.6	14.7	13.5	13.5	likely that 727 & 722 incorrectly deployed. Results swapped
Mar	m	19.5	41.2	25.5	48.0	57.0	28.0	13.1	12.7	11.2	no changes
Apr	20.4	17.3	45.2	27.3	40.8	80.2	33.0	12.5	13.0	11.2	no changes
May	21.6	21.5	49.1	25.0	46.8	65.2	30.3	10.5	11.5	11.1	no changes
Jun	20.2	16.1	52.2	23.7	51.0	72.8	27.9	11.0	10.3	10.6	no changes
Jul	16.3	10.9	42.7	20.7	41.5	63.9	23.2	-	-	-	no changes
Aug	20.9	16.9	55.8	25.9	50.0	78.4	27.6	-	-	-	no changes
Sept	m	m	m	m	m	m	m	-	-	-	unable to account for the discrepancies when council officer deployed tubes
Oct	16.8	15.9	41.4	25.9	47.4	70.6	22.8	-	-	-	no changes
Nov	23.3	19.2	40.3	29.5	47.1	59.8	28.4				no changes
Dec	16.8	16.2	m	23.7	38.5	53.6	24.0				no changes
Average	20.0	18.1	45.9	25.9	45.2	64.4	27.1				
Bias Adjusted	19.23	17.38	44.02	24.91	43.38	61.83	26.04				

If Defra are in agreement with West Dorset District Council's proposal, the results will be altered online.

Annualising Procedure for Tube 741

Only 4 months worth of data was obtained for site 741 in 2017, therefore required to be annualised . The procedure within TG16, Box 7.10 was followed. There were difficulties in using a background site from WDDC’s results, as no relevant site had 100% data capture. Therefore, the background site from the adjacent authority, Weymouth and Portland Borough Council was used.

			4 St Georges Estate	Dorch Tom Browns 741	4 when 741 avail									
Jan	04/01/2017	01/02/2017	12.23											
Feb	01/02/2017	01/03/2017	11.26											
Mar	01/03/2017	29/03/2017	8.36											
Apr	29/03/2017	26/04/2017	7.27				Am of 4	7.56	R				Application of Bias Adj Factor	
May	26/04/2017	31/05/2017	8.65						1.307958					
Jun	31/05/2017	28/06/2017	8.15				Pm of 4	5.78						
Jul	28/06/2017	02/08/2017	4.94											
Aug	02/08/2017	30/08/2017	6.78										38.8652	
Sept	30/08/2017	27/09/2017	5.13	17.3	5.13		Measured Pm (M)		30.95					
Oct	27/09/2017	01/11/2017	4.05	25.1	4.05									
Nov	01/11/2017	06/12/2017	7.48	45.1	7.48					40.48458				
Dec	06/12/2017	03/01/2018	6.46	36.4	6.46									
		Ave	7.56	30.95	5.78									

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

Figure D.1 Map showing location of where Automatic Analyser was located

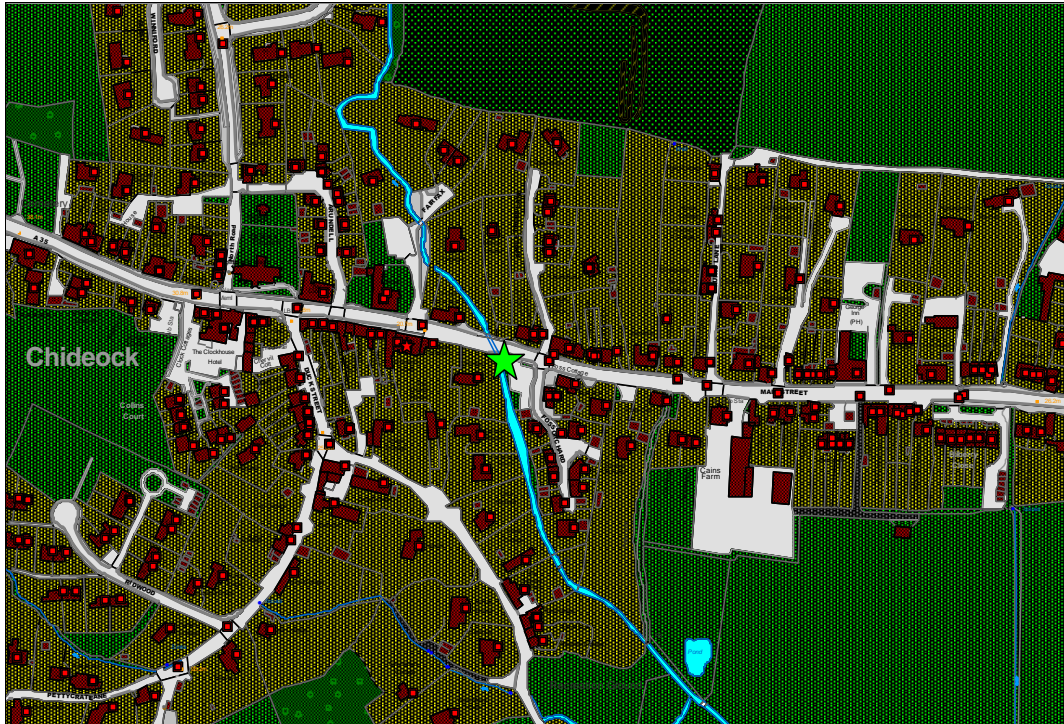
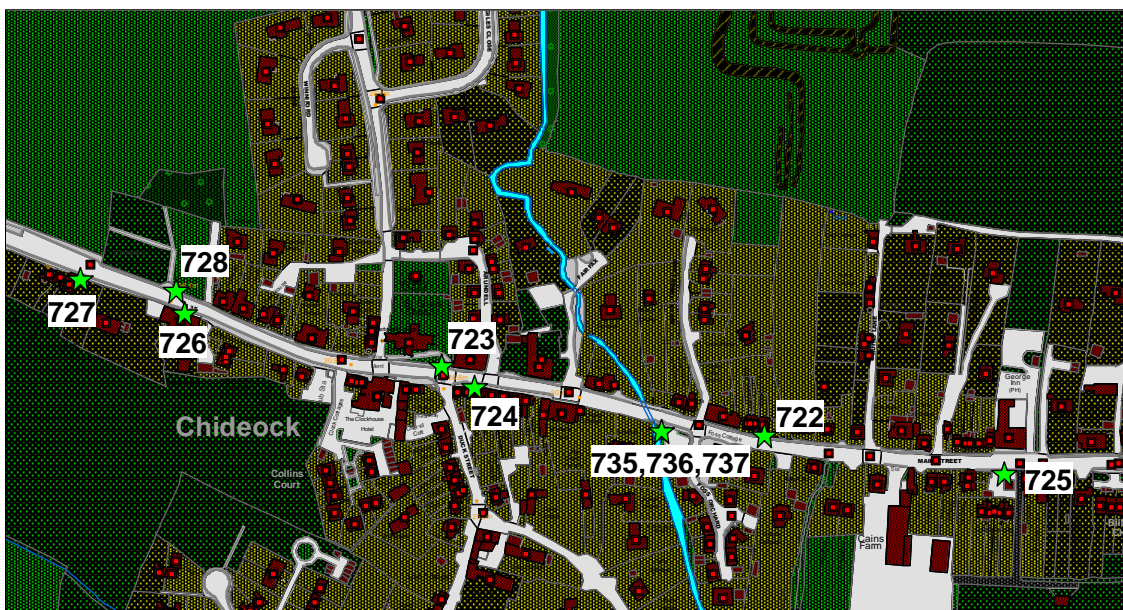
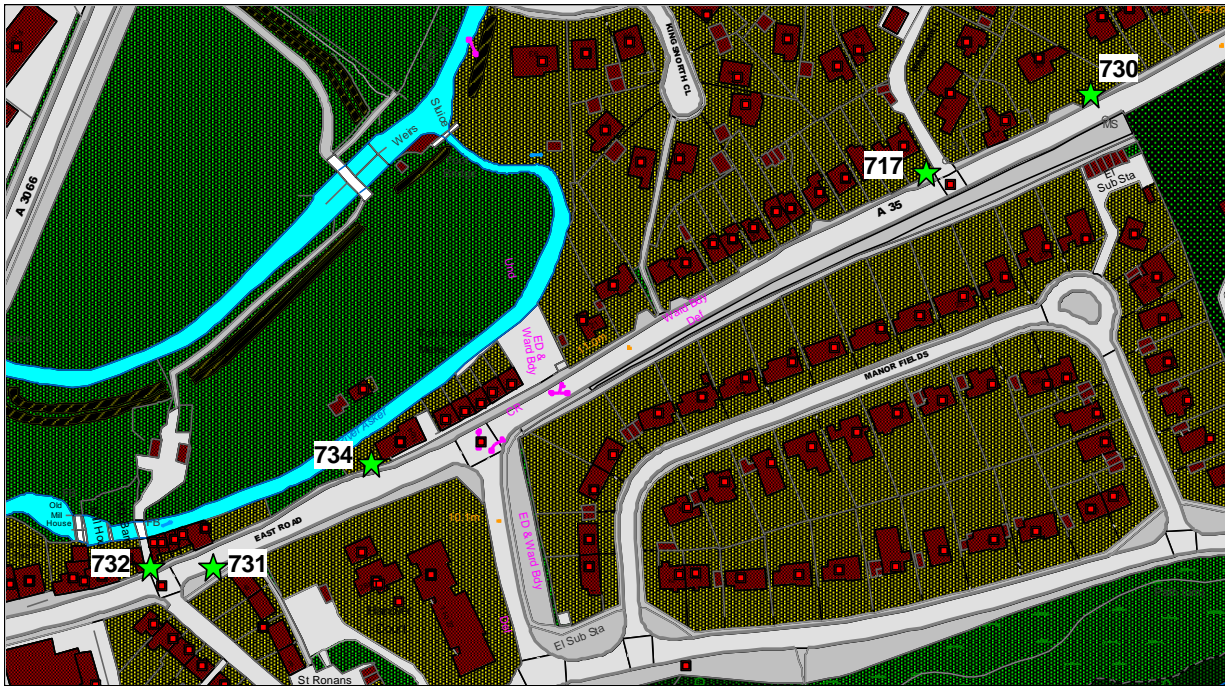


Figure D.2 Maps of Non-Automatic Monitoring Sites

Chideock



Bridport



Dorchester

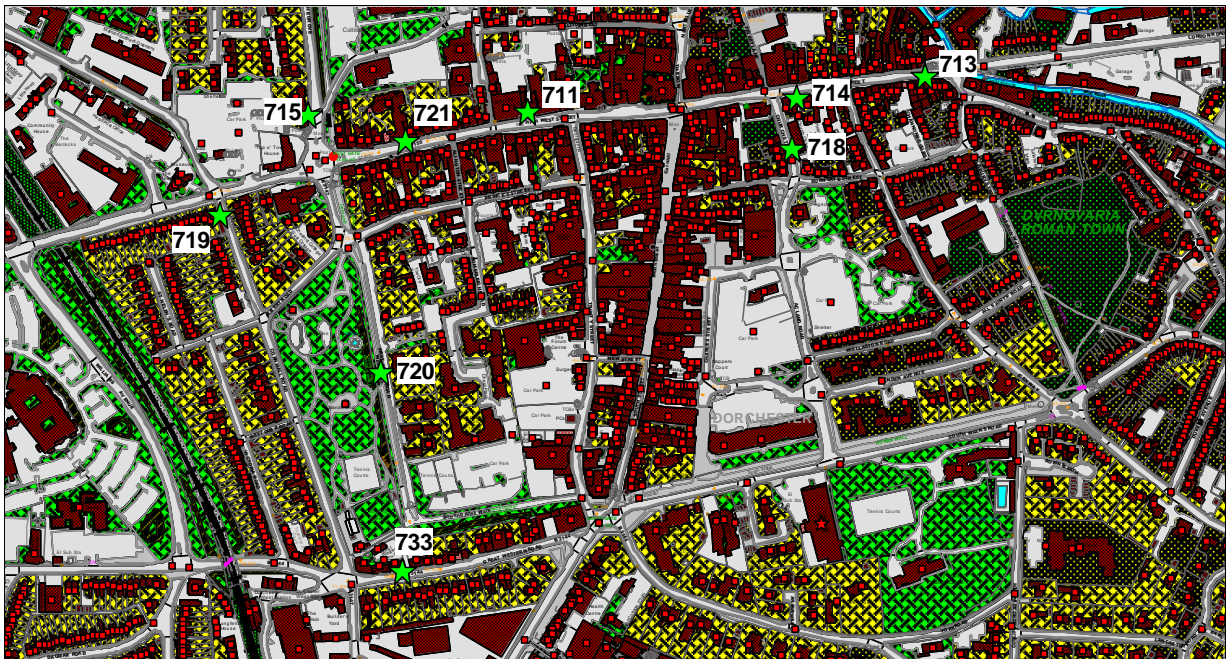


Figure D.3 – 2007 AQMA Chideock Boundary



Figure D.4 - 2012 Amended Chideock Boundary

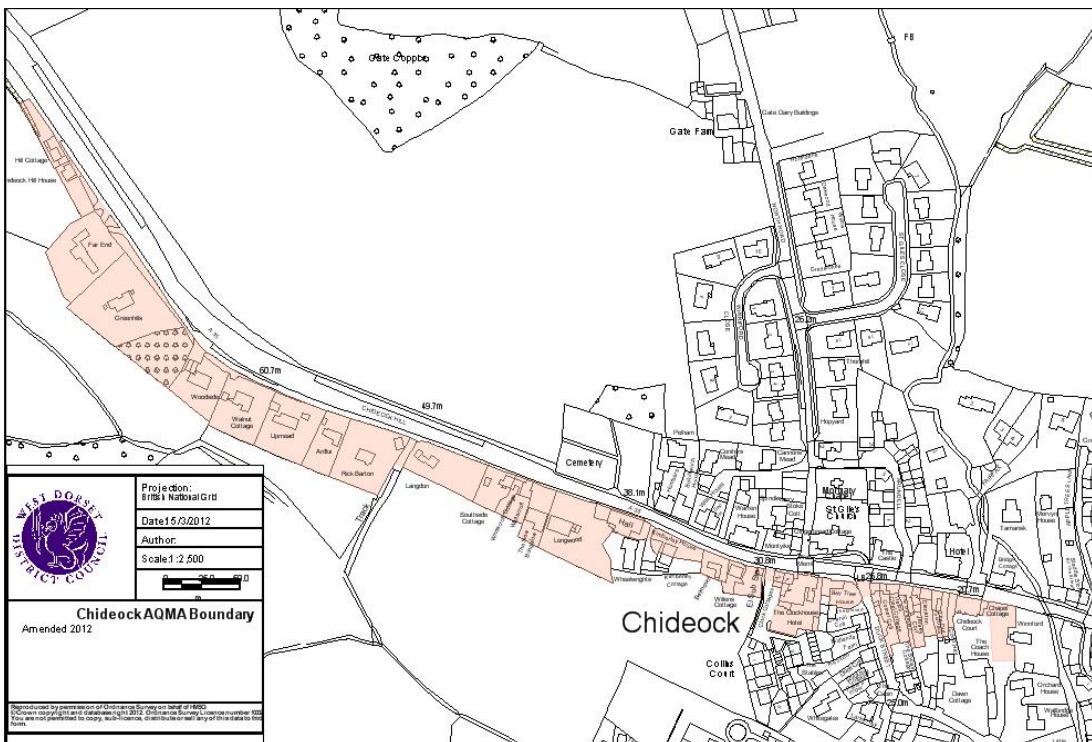
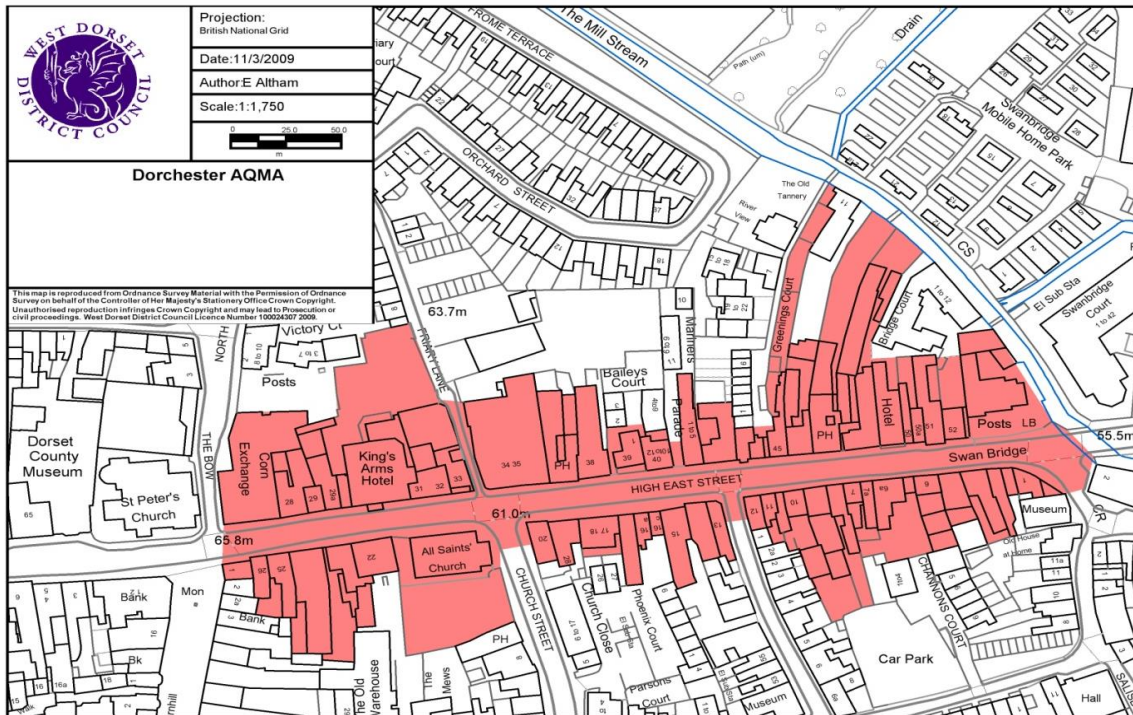


Figure D.5 - 2009 Dorchester AQMA Boundary



Appendix E: Summary of Air Quality Objectives in England

Table E.1 – Air Quality Objectives in England

Pollutant	Air Quality Objective ⁴	
	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

⁴ The units are in microgrammes of pollutant per cubic metre of air (µg/m³).

Glossary of Terms

Abbreviation	Description
AQAP	Air Quality Action Plan - A detailed description of measures, outcomes, achievement dates and implementation methods, showing how the local authority intends to achieve air quality limit values'
AQMA	Air Quality Management Area – An area where air pollutant concentrations exceed / are likely to exceed the relevant air quality objectives. AQMAs are declared for specific pollutants and objectives
ASR	Air quality Annual Status Report
Defra	Department for Environment, Food and Rural Affairs
DMRB	Design Manual for Roads and Bridges – Air quality screening tool produced by Highways England
EU	European Union
FDMS	Filter Dynamics Measurement System
LAQM	Local Air Quality Management
NO ₂	Nitrogen Dioxide
NO _x	Nitrogen Oxides
PM ₁₀	Airborne particulate matter with an aerodynamic diameter of 10µm (micrometres or microns) or less
PM _{2.5}	Airborne particulate matter with an aerodynamic diameter of 2.5µm or less
QA/QC	Quality Assurance and Quality Control
SO ₂	Sulphur Dioxide
...	...

References

1. Local Air Quality Management Technical Guidance LAQM.TG(16).
2. AEA Energy and Environment Precision and Accuracy Spreadsheets.
3. www.laqmsupport.org.uk
4. WDDC 2017 ASR
5. Weymouth and Portland Borough Council 2018 ASR