NEWCASTLE-UNDER-LYME BOROUGH COUNCIL

EXECUTIVE MANAGEMENT TEAM'S REPORT TO

Licensing and Public Protection Committee
04 August 2020

Report Title: **Environment Act 1995 – Part IV Local Air Quality Management – Annual Status Report 2020**

Submitted by: **Head of Environmental Health & Environmental Protection Team Manager**

Portfolios: **Environment & Recycling**

Ward(s) affected: **All**

Purpose of the Report

1. To advise Committee of the findings of the statutory Annual Status Report for 2020 which covers the 2019 calendar year in respect of air quality within the Borough

Recommendation

1. That the report be received.

Reasons

1. To inform committee of the state of local air quality within the Borough for 2019 and action be taken to monitor and improve local air quality in respect of transport related Nitrogen Dioxide level and also particulate matter exposure.

1. Background

1.1. Local authorities in the UK have statutory duties for managing local air quality under Part IV of the Environment Act 1995. District Councils have been required to review and assess air quality within their areas since 1997 for compliance against a range prescribed Air Quality Objectives

1.2. The Council has been carrying out reviews of air quality since December 1997; these involve measuring air pollution and trying to predict how it will change over the next few years. The review process aims to make sure that the national Air Quality Objectives prescribed in the Air Quality Regulations http://ukair.defra.gov.uk/assets/documents/National_air_quality_objectives.pdf will be achieved throughout the UK by the relevant deadlines. These objectives have been put in place to protect people's health and the environment. In relation to people, the objectives apply at the facades of relevant receptors, generally dwellings, hospitals, schools. Workplaces are excluded.

1.3. The Council is also undertaking a separate study for a different regulatory purpose in conjunction with Stoke-on-Trent City Council under a 2018 Ministerial Direction to understand and assess compliance with EU Limit Values under the Ambient Air Quality Directive, across the two local authority areas. The study is principally concerned with assessing compliance with nitrogen dioxide annual mean levels at locations within 4 metres of the roadside, locations within 25 metres of a major junction are out of scope. Although there is reference to this work in the 2020 Annual Status Report, the outcomes of the Ministerial Direction work will be the subject of a future report to Cabinet.

1.4. At the most fundamental level, our health and prosperity depend on the health of the planet on which we live. From the air we breathe to the water we drink, the food we eat and the energy that powers our homes and businesses, we need to protect and sustain the health of the natural environment.

1.5. The World Health Organisation, estimates that poor air quality within the UK costs the economy circa £54 billion which is equivalent to 3.7% of British GDP (based on 2010 data). It also accounts for 29,000 premature deaths annually. (Source: WHO Regional Office for Europe, OECD (2015). Economic cost of the health impact of air pollution in Europe: Clean air, health and wealth. Copenhagen: WHO Regional Office for Europe. http://www.euro.who.int/en/mediacentre/events/events/2015/04/ehp-mid-term-review/publications/ecoNOmic-cost-of-the-healthimpact-of-air-pollution-in-europe).

1.6. At the local level, estimated costs of the health impacts of air pollution from ultra-fine particulate matter alone is thought to be between £20 - 47 million for Newcastle-under-Lyme and between £39 – 93 million for Stoke-on-Trent. Costs to the NHS and Social Care are thought to be between £96 – 176 thousand for Newcastle-under-Lyme and between £189 – 349 thousand for Stoke-on-Trent.

1.7. Local authorities therefore have an important role in bringing about improvements in air quality and ensuring compliance with statutory requirements to reduce the impact on health and associated costs to the National Health Service and the wider economy

2. Issues

2.1. Annual Status Report (ASR) 2019

2.2. In accordance with its statutory duties, the Borough Council has recently completed its Annual Status Report for 2020 which is concerned with air quality within the Borough during the 2019 calendar year. A copy of the 2020 ASR, along with previous years air quality reports can be found online at https://www.newcastle-staffs.gov.uk/allservices/environment/environmental-protection/air-quality-newcastle-under-lyme

2.3. Previous assessments have identified nitrogen dioxide (N02) as the pollutant of concern, with a number of locations within the Borough exceeding the nitrogen dioxide annual mean objective of 40 ug/m^3. Levels of $N0_2$ are heavily influenced by road traffic emissions, topography and distance from the emission source to receptor.

2.4. This Annual Status Report considers all new monitoring data and assesses the data against the Air Quality Objectives. It also considers any changes that may have an impact on air quality and details progress on progressing measures with the associated Air Quality Action Plans for the for the four air quality management areas within the Borough.

2.5. Summary of Air Quality Borough Wide in 2019

2.5.1. The review of new diffusion tube monitoring data has not identified any locations outside of the four existing Air Quality Management Areas (AQMA's), (declared in December 2015) where the annual NO_2 objective was exceeded in 2019.

2.5.2. Monitoring of NO_2 concentrations in the AQMAs and at a variety of locations across the Borough during 2019 shows, that there has been a general decrease in NO_2, with the majority of areas now being under the annual mean objective. This indicates that the strategies currently in place are already helping to reduce the NO_2 concentration within these areas of the Borough.

2.6. **Summary of Air Quality in Newcastle-under- Lyme Town AQMA in 2019**

2.6.1. Appendix 1 contains a map of diffusion tube results for the Town Centre AQMA based on compliance with the annual mean nitrogen dioxide UK objective for 2018.

2.6.2. Air Quality in this area is influenced by traffic utilising the major arterial routes, which converge on the town centre. There are a number of relevant receptors located at the back of pavement. The network is heavily congested at peak times of the day with high volumes of low speed mixed traffic. The town centre is experiencing a period of regeneration with provision for developments to provide up to 3000 student bed spaces by 2020.

2.6.3. Furthermore, a number of office spaces are able to covert to residential use without Planning Permission or requiring consideration of air quality. This has resulted in significant increases in the numbers of relevant receptors within the area, especially those located at back of pavement in terraced type properties, where the Council is unable to influence development. The planned mixed retail and accommodation development for the Ryecroft site has not progressed. Any new proposals for this site will need to be supported by an appropriate air quality assessment, which demonstrates that the development will not lead to exceedances of air quality objectives or EU limit values. In addition, the rural areas of the Borough are facing increased demands for applications for residential development, with people in these areas heavily reliant on cars to access services and employment opportunities within the town centre and wider areas.

2.6.4. There continue to be exceedances of the $N0_2$ annual mean objective in this area at the following four locations representative of relevant exposure for LAQM purposes, DT11– 34 London Road -41.2 ug/m^3, DT85 – 106 King Street - 44.2 ug/m^3; DT102 -Belong Care Home, Lower Street – 44.8 ug/m^3, DT104 – 7 King Street- 54.5ug/m^3

2.6.5. The following seven sites were below but within 10% of the $N0_2$ annual mean objective at locations representative of relevant exposure for LAQM purposes and are considered to remain at risk of exceedance in future years, DT72 - 134 High Street, Newcastle-36.7; DT74 - 39 London Road Newcastle -35.7 ug/m^3; DT76 - 11 Brunswick Street -37.7 ug/m^3; DT84 -102 King Street - 37.1 ug/m^3; DT87 - 1 King Street -39.4 ug/m^3, DT96 - JJ Design London Road -39.5 ug/m^3; DT98 - Newcastle Taxi's Brunswick Street – 38.8 ug/m^3.
Comparison of results for 2019 against all years since 2012 shows a generally decreasing trend. However, the sites which have exceeded or which were below but within 10% of the annual mean objective in 2019 are proving challenging to reduce exposure to $N0_2$.

2.6.7. At locations being monitored for compliance against the $N0_2$ annual mean EU Limit Value, the following locations have exceeded in 2019, DT85 – 106 King Street - 44.2 ug/m^3; DT102 - Belong Care Home, Lower Street – 44.8 ug/m^3, DT104 – 7 King Street- 54.5ug/m^3; DT85 – 106 King Street - 44.2 ug/m^3; N26 – 120 Etruria Road – 43.2ug/m^3.

2.6.8. For sites which exceed or are close to exceeding the LAQM $N0_2$ annual mean objective and /or the $N0_2$ annual mean EU Limit Value it is considered that levels are significantly influenced by the following which are not conducive to reducing levels of $N0_2$ volume and composition of traffic, congestion and local geography, with a number of properties being located at back of pavement.

2.6.9. Based on an assessment for compliance with the EU Limit Value undertaken in 2018, compliance based on expected changes in fleet composition, traffic growth and changes in vehicular emissions is not predicted to occur before 2026 without measures to positively influence changes in emissions. Work is currently underway to identify appropriate measures.

2.6.10. This AQMA will remain in place until all sites measure an annual mean NO2 concentration that is consistently, at least 10% below the annual mean legal objective.

2.7. **Summary of Air Quality in Kidsgrove AQMA in 2019**

2.7.1. Appendix 2 contains a map of diffusion tube results for Kidsgrove AQMA based on compliance with the annual mean nitrogen dioxide UK objective for 2018.

2.7.2. Air Quality in this location is heavily influenced by traffic using the A50 Liverpool Road and local traffic accessing side roads from Liverpool Road within the centre of Kidsgrove. Relevant receptors are located back of footway and in close proximity to junctions and areas of congestion.

2.7.3. For the 2019 calendar year, there were no exceedances of the $N0_2$ annual mean objective representative of relevant exposure for LAQM purposes. The highest $N0_2$ annual mean objective level at a location of relevant exposure was DT 6 106 Liverpool Road with a façade level of 38.6ug/$m^{3,}$ similar to that measured in 2012, followed by DT 94 - 116 Liverpool Road 38.66ug/m^3 with a façade level of 38.2ug/m^3 and DT64 – 57-59 Liverpool Road with a façade level of 36.76ug/$m^{3.}$ Comparison of results in this area since 2012 shows there has been an overall decreasing trend in the $N0_2$ annual mean with no exceedances recorded since 2016.

2.7.4. Staffordshire County Council are planning a number of works in this area during 2020 which are aimed at reducing congestion on Liverpool Road and hopefully this will have a beneficial effect on air quality.

2.7.5. The diffusion tube-monitoring network in this area will remain in place to monitor the success of the highway improvement works. This AQMA will remain in place until all sites measure an annual mean NO_2 concentration that is consistently, at least 10% below the annual mean legal objective.

2.8. **Summary of Air Quality in Maybank, Wolstanton and Porthill AQMA in 2019**

2.8.1. Appendix 3 contains a map of diffusion tube results for Maybank-Wolstanton-Porthill AQMA based on compliance with the annual mean nitrogen dioxide UK objective for 2019.

2.8.2. Air Quality in this area is influenced by local road traffic and traffic utilising the junctions associated with the A500 dual carriageway. Relevant receptors in this location are mainly located at the back of footway. The main route through the area is single carriageway with traffic lighted junctions, signal controlled crossings, on street bus stops and significant sections of on street parking. Porthill Bank and Grange Lane are on significant gradients.

2.8.3. There have continued to be no measured exceedances of the $N0_2$ annual mean objective in this AQMA with this being the case since 2012. In 2019, the highest $N0_2$ annual mean objective representative of relevant exposure for LAQM purposes was recorded for site DT24 – 26 High Street May Bank with a result of 34.8ug/m^3, an increase of 4.4ug/m^3 compared to 2018. Site DT9 – 32 Porthill Bank, DT24 – 26 High Street Maybank and DT49- 2 Vale View Porthill, recorded an increase on the $N0_2$ annual mean objective compared to 2018. However, comparison of results in this area since 2012 shows there has been an overall decreasing trend in the $N0_2$ annual mean with no exceedances recorded since 2012.

2.8.4. The diffusion tube sited at the junction with Grange Lane and Church Lane (DT103) will remain in place as there are a number of works planned which may affect upon this location, this includes the Etruria Valley Development scheme, which sees changes to the junction, the junction near to this site, and a new access from Grange Lane into the City Centre via Etruria Valley. Highways England are undertaking improvement works to the A500 between Wolstanton and Porthill, which are scheduled for delivery by Summer 2020. These works have the potential to increase traffic flow through this AQMA.

2.8.5. Additionally, a new route from the Borough into the City Centre will be created by the planned City Council scheme Etruria Valley Link Road development. This will allow traffic to flow from Newcastle into Stoke on Trent via Grange Lane. Reports submitted with the planning application show that although there is predicted to be an increase in traffic and traffic related emissions as a consequence of this development in the Grange Lane area of this AQMA, there is likely to be a reduction in $N0_2$ emissions on the A53 Etruria Road caused by reduced traffic and reduced congestions as traffic will be able to utilise this new. $N0_2$ levels are not predicted to cause exceedances of the relevant UK objectives or EU Limit Values.

2.8.6. Accordingly, the diffusion tube-monitoring network will remain in place in this AQMA, until the highway schemes have become embedded (at least 5 years post opening) and there is confidence that $N0_2$ annual mean levels are consistently below the statutory objective.

2.9. Summary of Air Quality in Little Madeley AQMA in 2019

2.9.1. Appendix 4 contains a map of diffusion tube results for Little Madeley AQMA based on compliance with the annual mean nitrogen dioxide UK objective for 2019.

2.9.2. Air Quality in this location is heavily influenced by traffic using M6 motorway which runs within 20 metres of the nearest receptor at Collingwood, 3 Newcastle Road, and Little Madeley.

2.9.3. The NO_2 concentration at this location in has steadily decreased over the past 7 years. The NO_2 annual mean result at DT3 (Newcastle Road, Little Madeley) for 2019 was 27µg/m^3 (a slight increase from 24.8ug/m^3 measured in 2018. However since 2012, there has been an overall decreasing trend in the $N0_2$ annual mean in this area.

2.9.4. Highways England are introducing smart managed motorways and hard shoulder running up to Junction 15 of the M6 (Stoke on Trent South) and from junction 16 (Stoke on Trent North and Crewe) through to junction 22. The stretch of motorway between junctions 15 and 16, which runs past the receptor experiences congestion at peak periods and may become a candidate for hard shoulder running and smart managed motorways in the future.

2.9.5. Due to the works to the M6 motorway, this location will continue to be monitored for the near future

2.10. Particulate Matter (PM_{10} and $PM_{2.5}$)

2.10.1. Due to the health risk posed by $PM_{2.5}$, a new requirement has been brought in to assess $PM_{2.5}$ concentrations. Newcastle-under-Lyme does not currently monitor for this fraction of particulate matter.

2.10.2. Manmade $PM_{2.5}$ is estimated to contribute to some 4.2% or 60 deaths per annum for adults over 30 years of age within the Borough.

2.10.3. The Borough Council, along with the Staffordshire Air Quality Forum and Staffordshire Public Health, is looking at ways in which $PM_{2.5}$ concentrations can be reduced at both a local and regional level.

2.10.4. Newcastle under Lyme Air Quality and Health Impacts 2019

2.10.5. Data showing the impact of air quality on health in Newcastle under Lyme and Stoke on Trent has been provided by the County Council's Public Health Epidemiologist. The latest available

dataset is for 2017/18 and is provided in in Appendix 5 along with comparisons with the district and city authorities in Staffordshire and England as a whole.

2.11. **Proposed actions arising from the 2019 Annual Status Report**

These are as follows.

- Continue the current network of NO_2 diffusion tube monitoring in the District to identify future changes in pollutant concentrations;
- Continue to ensure that air quality considerations are properly accounted for in planning application submissions and in recommendations to the LPA
- Continue to enforce air quality and emission related legalisation within the Borough (e.g. regulation of industrial processes, smoke control, dust nuisance, smoke nuisance, trade waste burning, dark smoke on trade and industrial premises)
- Consult on and adopt an Air Quality Strategy for the Borough
- Consult on and adopt an Air Quality Developers Guide
- Engage with the Director of Public Health at Staffordshire County Council and Staffordshire Councils to implement measures to reduce exposure to PM2.5
- Continue to work with colleagues in the city to ensure that air quality related planning policies are delivered in the Joint Local Plan
- Continue to deliver the Air Quality Action Plan Measures. (Most of the measures identified fall within the remit of the County Council as the Highways Authority)

3. Reasons for Preferred Solution

3.1. The Council is required to take the action outlined in this report in order to fulfil its statutory duties under the Part IV of the Environment Act 1995.

4. Outcomes Linked to Sustainable Community Strategy and Corporate Priorities

4.1. The action taken achieves the following priorities detailed within the Council Plan

- Local services that work for local people
- A healthy, active and safe borough

5. Legal and Statutory Implications

5.1. Local authorities in the UK have statutory duties for managing local air quality under Part IV of the Environment Act 1995. District Councils have been required to review and assess air quality within their areas since 1997 for compliance against a range of pollutant objectives.

6. Equality Impact Assessment

6.1. Not applicable

7. Financial and Resource Implications

7.1. Existing budgets will be utilised to fund the work identified in this report, where delivery of action plan measures rests with others, such as Staffordshire County Council for highways related schemes, your officers will continue to work with delivery partners to bring forward action plan measures as quickly as possible.

8. Major Risks

8.1. Not applicable

9. Sustainability and Climate Change Implications

9.1 Not applicable

10. Key Decision Information

10.1 Not applicable

11. Earlier Cabinet/Committee Resolutions

11.1 Not applicable

12. List of Appendices

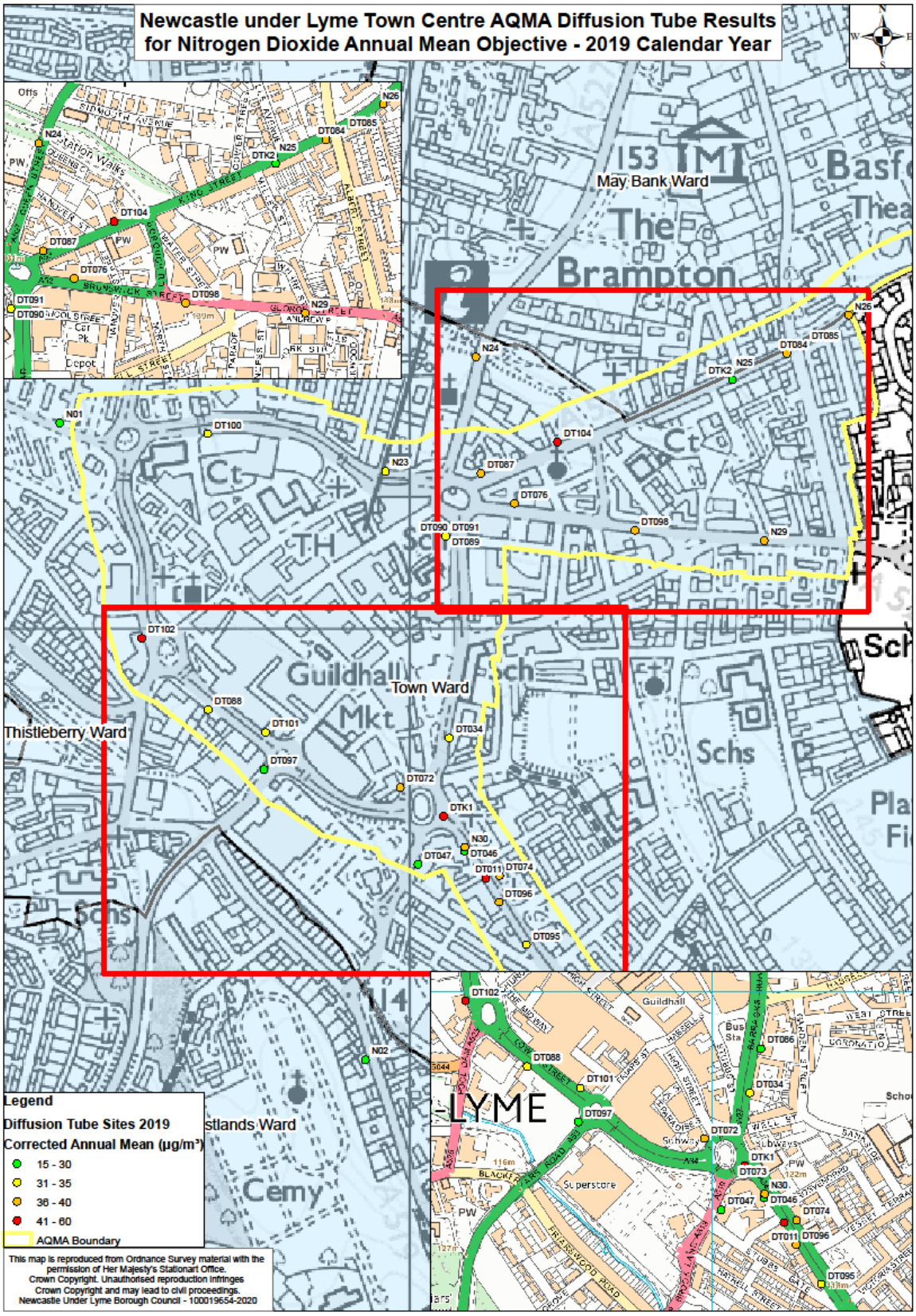
- Appendix 1 Map of $N0_2$ Diffusion Tube results 2019 Town Centre AQMA – UK $N0_2$ Annual Mean objective
- Appendix 2 Map of $N0_2$ Diffusion Tube results 2019 Kidsgrove AQMA – UK $N0_2$ Annual Mean objective
- Appendix 3 Map of $N0_2$ Diffusion Tube results 2019 Porthill, Wolstanton, Maybank AQMA – UK N02 Annual Mean objective
- Appendix 4 Map of $N0_2$ Diffusion Tube results 2019 Little Madeley AQMA – UK $N0_2$ Annual Mean objective
- Appendix 5 Newcastle-under-Lyme and Stoke-on-Trent Air Quality and Health 2017/18 data

Background Papers

- Environment Act 1995 – Part IV
- Local Air Quality Management Technical Guidance (LAQM.TG.16) (available at http://laqm.defra.gov.uk/documents/LAQM-TG16-April-16-v1.pdf0
- Air Quality Reports completed since 1997 available from https://www.newcastlestaffs.gov.uk/all-services/environment/environmental-protection/air-quality-newcastleunder-lyme

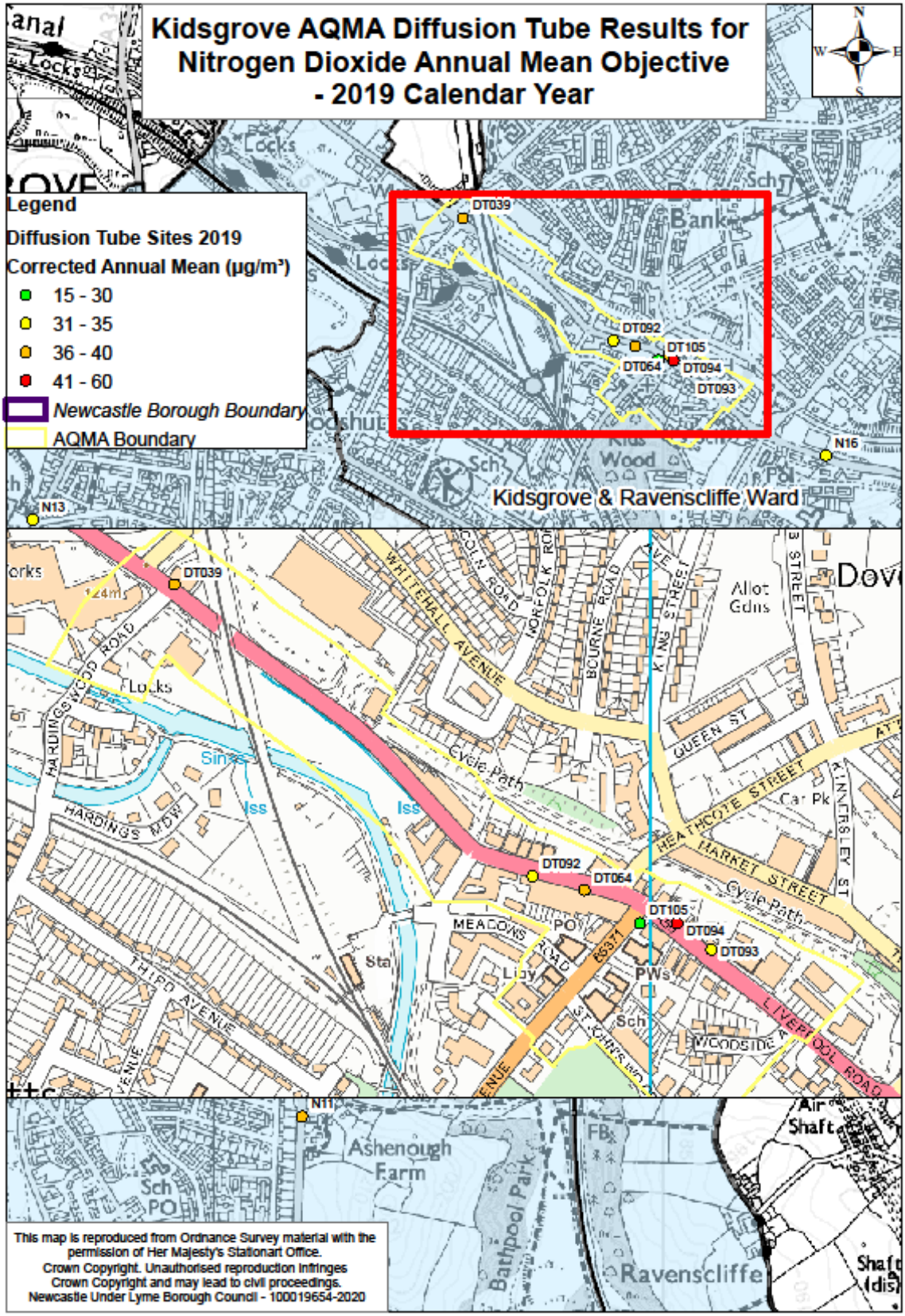
Appendix 1

Map of $N0_2$ Diffusion Tube results 2019 Town Centre AQMA – UK $N0_2$ Annual Mean objective



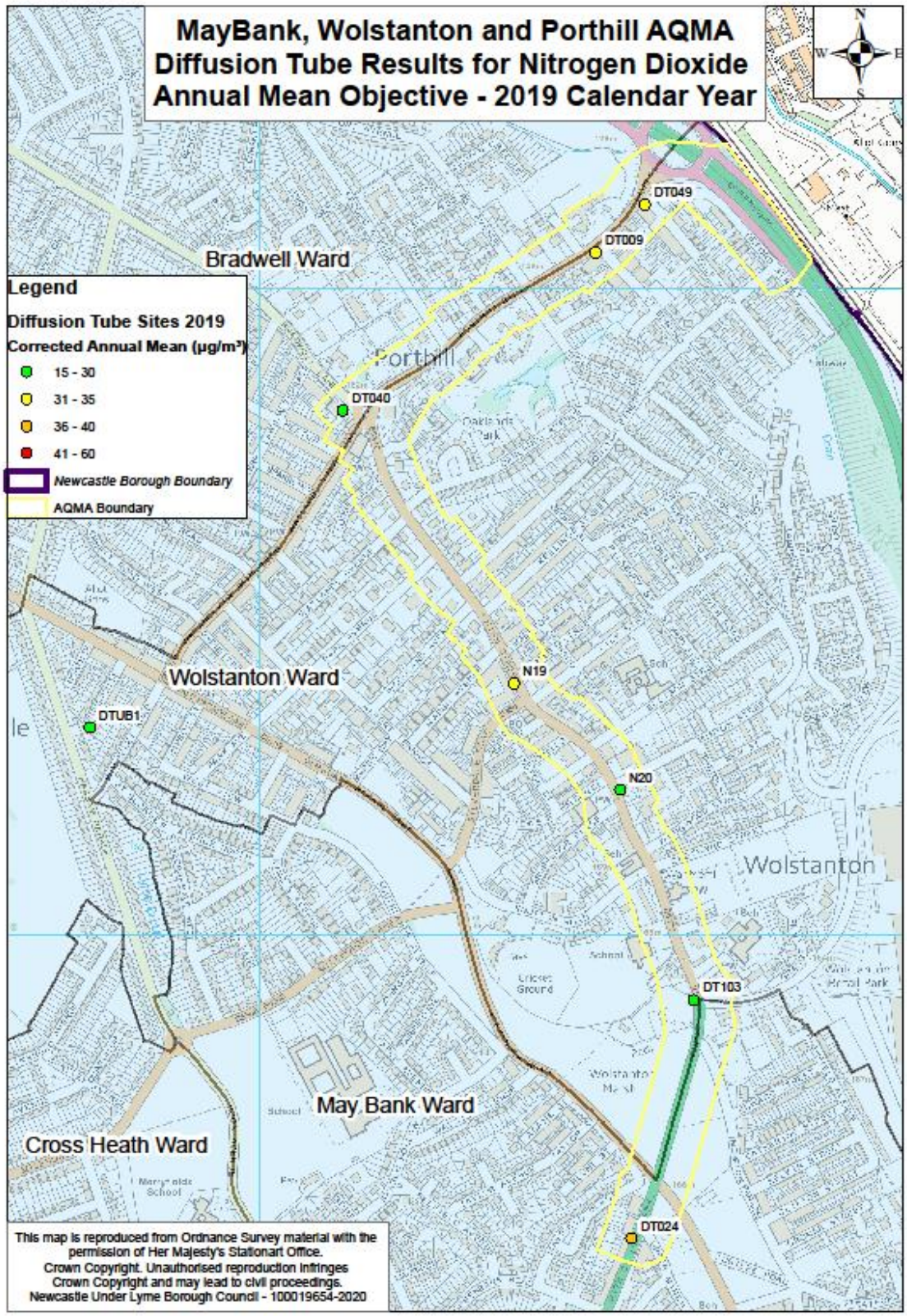
Appendix 2

Map of $N0_2$ Diffusion Tube results 2019 Kidsgrove AQMA – UK $N0_2$ Annual Mean objective



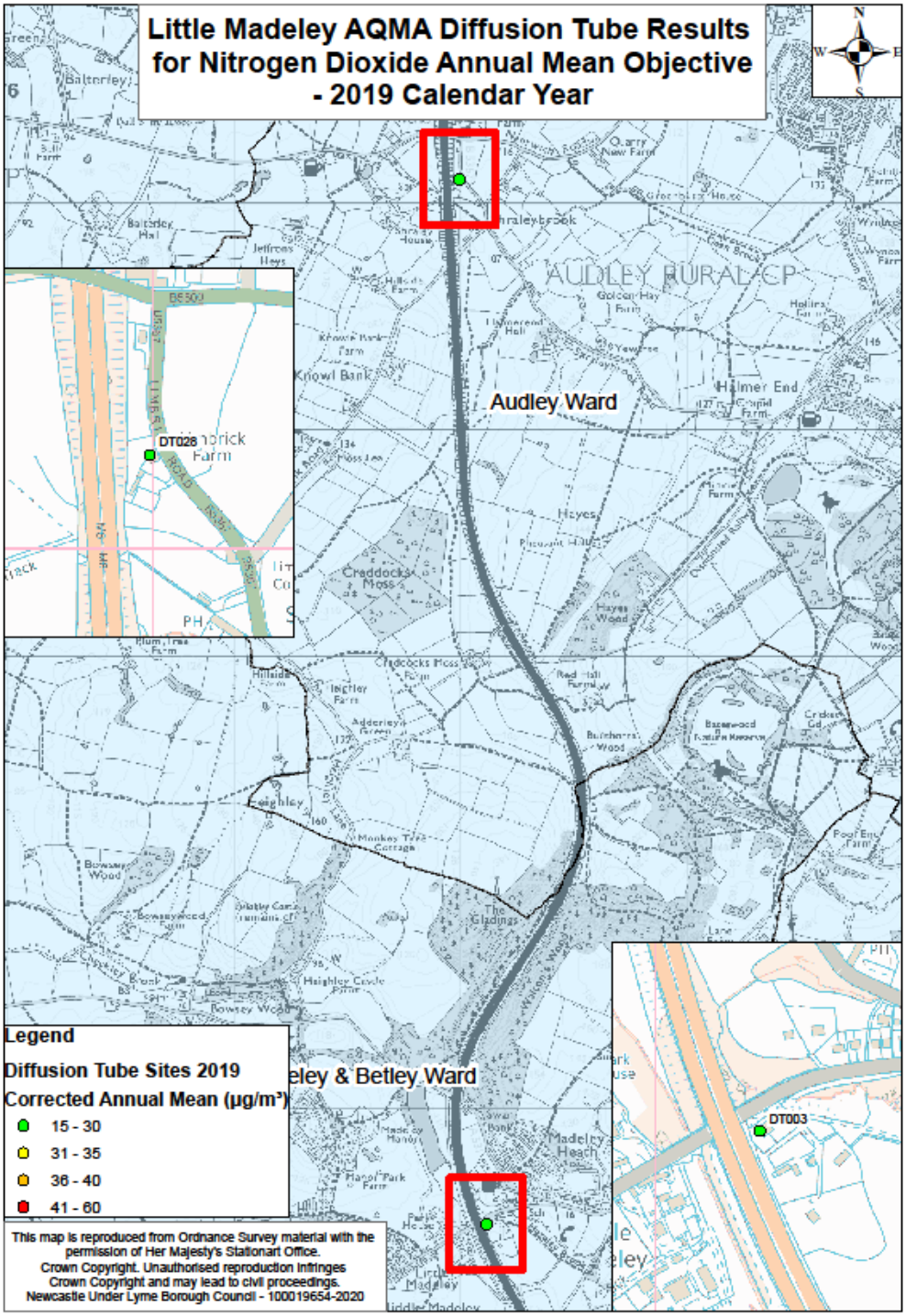
Appendix 3

Map of $N0_2$ Diffusion Tube results 2019 Porthill, Wolstanton, Maybank AQMA – UK N02 Annual Mean objective



Appendix 4

Map of $N0_2$ Diffusion Tube results 2019 Little Madeley AQMA – UK $N0_2$ Annual Mean objective



Appendix 5

- Newcastle-under-Lyme and Stoke-on-Trent Air Quality and Health 2017/18 data

Public Health Outcomes Framework Indicator 3.01- Fraction of annual all cause adult mortality attributable to anthropogenic (human made) particulate air pollution (measured as fine particulate matter, $PM_{2.5}$) for Staffordshire Authorities 2014 to 2018[8]

Estimated numbers of annual all-cause adult mortality attributable to anthropogenic (human-made) particulate air pollution (measured as fine particulate matter, $PM_{2.5}$*) for Staffordshire 2014 to 2018[8]
*** Fraction of annual all-cause adult mortality attributable to anthropogenic (human-made) particulate air pollution (measured as fine particulate matter, $PM_{2.5}$*)**

	2014			2015			2016			2017			2018		
District/County	Deaths - all causes persons 30+	%*	Estimated attributable deaths	Deaths - all causes persons 30+	%*	Estimated attributable deaths	Deaths - all causes persons 30+	%*	Estimated attributable deaths	Deaths - all causes persons 30+	%*	Estimated attributable deaths	Deaths - all causes persons 30+	%*	Estimated attributable deaths
Newcastle-under-Lyme	55	4.7	60	55	4.2	50	1291	4.7	60	1197	4.2	50	1334	4.2	60
Stafford	65	4.8	60	60	4.7	60	1254	4.8	60	1267	4.3	50	1336	4.2	60
East Staffordshire	55	5.1	50	55	4.8	50	1065	5.6	60	1098	5.0	50	1093	4.6	50
South Staffordshire	55	5	50	55	4.7	60	1128	5.1	60	1239	4.5	60	1211	4.6	60
Lichfield	50	5	50	50	4.6	50	1044	5.5	60	1070	4.9	50	1087	4.6	50
Staffordshire Moorlands	45	4.5	50	45	4	40	1110	4.6	50	1127	3.9	40	1108	3.8	40
Cannock Chase	45	5.1	40	45	4.6	40	879	5.4	50	940	4.7	40	976	4.6	50
Tamworth	35	5.4	30	30	4.9	30	615	6	40	634	5.3	30	653	5.1	30
Stoke on Trent	2318	5.0	115	2479	4.9	110	2454	5.0	120	2490	4.4	110	2746	4.4	120
Staffordshire County	400	4.9	400	390	4.5	390	8386	5.2	430	8572	4.5	390	8792	4.4	390

8 Source Public Health England https://fingertips.phe.org.uk/profile/public-health-outcomes-framework/data#page/3/gid/1000043/pat/6/par/E12000005/ati/102/are/E10000028/iid/30101/age/230/sex/4