



2021 Updating Screening Assessment for Armagh City, Banbridge and Craigavon Borough Council

In fulfilment of Environment (Northern Ireland) Order
2002

Local Air Quality Management

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Executive Summary

2020 was unique in terms of Local Air Quality Management with the largest single year-on year reduction in nitrogen dioxide concentrations measured across the Borough. Given the importance of air quality monitoring data and the unique opportunity to assess the impact of large scale reduction in fossil fuel-based transport emissions - Armagh City, Banbridge and Craigavon Borough Council prioritized the maintenance of the monitoring networks throughout 2020 and staff undertaking air quality tasks were recognised as key-workers alongside their other Council duties in supporting business and communities.

The pandemic resulted in huge loss and suffering amongst our communities as well as social and economic impacts and it is not something anyone would wish to see repeated. It did also show that poor air quality – which we always knew was linked to congestion and traffic movements – is an effect of economic and social activity. Whilst we must move to a more sustainable way of producing and purchasing our food, traveling to work, using our land, heating our homes and powering our businesses to mitigate impacts upon the global climate – which allows social and economic activity to flourish whilst reducing its impact upon the local environment and global temperatures.

Where poor local air quality occurs it is significant factor in deaths and illness due to environmental causes and is a major public health challenge for the Borough, Northern Ireland, the UK and the Republic of Ireland. Research by the British Heart Foundation and others have shed some light upon the local impact:

<https://www.bhf.org.uk/what-we-do/in-your-area/northern-ireland/campaigning-and-influencing-in-northern-ireland/taking-action-on-air-pollution-in-northern-ireland>

The British Heart Foundation call for increased monitoring of air quality, increased investment in public transport and walking and cycling and increased public awareness of the issue.

These measures are all congruent with the Borough's Air Quality Action Plan. Work on the Action Plan has continued with a particular focus on monitoring and ensuring that the gains from Local Air Quality Management are considered alongside the preparation of a Corporate Roadmap towards net zero.

The Updating and Screening Assessment hereby presented shows the importance of monitoring to inform wider Government policy. Whilst large decreases in pollution have been observed, 2020 is considered an outlier and monitoring will continue at all locations.

Overall the air quality across 99.9% of the land-mass of the Borough remains excellent, however there remains a number of locations of concern where higher levels of nitrogen dioxide exist in close proximity to exposed receivers (residences).

Work continues at central Government and Council level to reduce emissions from all vehicles and vehicle use in Northern Ireland. The Environmental Health Department continue to assess all new developments to avoid the creation of new un-mitigated receptors in areas of poor air quality but also to ensure that all new major developments do not compromise the existing air quality. It remains the view that improvements in vehicle and fuel technologies and in particular a move towards a largely electric vehicle fleet will significantly reduce concentrations of nitrogen dioxide across the Borough and will eliminate any exceedances of the current air quality standard of 40 microgrammes per metre cubed of air.

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1 Introduction

1.1 Description of Local Authority Area

The Borough is a beautiful rural, historic area served by the main motorway network in Northern Ireland, with major road links to the business capitals of Belfast and Dublin. Armagh City, Banbridge and Craigavon Borough has a mixture of heavy industry, services such as local government, the local education authority, health and social services, retail and agriculture. The greatest contribution to air quality pollution in the Borough is from road traffic, particularly in the city/town centres of Armagh, Portadown and Lurgan where the road network is frequently congested. Given the size of the rural hinterland, public transport options are limited and there is a greater tendency to rely on the private car as the primary means of transport. The road network within the Borough is regarded as a route hub to the border with the Republic Of Ireland and is a main through-route between mid-Ulster and the south-east of Northern Ireland and hence has a traffic flow higher than that which could be created by local traffic alone. Particulate Matter (PM₁₀) and NO₂ would be considered as the pollutants most at risk of breaching the objective limits in the Borough as a result of road traffic.

Domestic fuel usage throughout the Borough has historically been based on solid fuel/oil with limited use of gas. As within the province generally, the use of coal is declining although a trend of secondary or primary heating using wood or multi-fuel burning stoves is apparent giving rise to additional air quality concerns.

1.2 Purpose of Report

This report fulfils the requirements of the Local Air Quality Management process as set out in the Environment (Northern Ireland) Order 2002, the Air Quality Strategy for England, Scotland, Wales and Northern Ireland 2007 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 exceedances are considered likely, the local authority must then 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.

The objective of this Updating and Screening Assessment is to identify any matters that have changed which may lead to risk of an air quality objective being exceeded. A checklist approach and screening tools are used to identify significant new sources or changes and whether there is a need for a Detailed Assessment. The USA report should provide an update of any outstanding information requested previously in Review and Assessment reports.

1.3 Air Quality Objectives

The air quality objectives applicable to LAQM in Northern Ireland are set out in the Air Quality Regulations (Northern Ireland) 2003, Statutory Rules of Northern Ireland 2003, no. 342, and are shown in Table 1.1. This table shows the objectives in units of microgrammes per cubic metre $\mu\text{g}/\text{m}^3$ (milligrammes per cubic metre, mg/m^3 for carbon monoxide) with the number of exceedances in each year that are permitted (where applicable).

Table 1.1 Air Quality Objectives included in Regulations for the purpose of LAQM in Northern Ireland

Pollutant	Air Quality Objective Concentration	Air Quality Objective Measured as	Date to be achieved by
Benzene	16.25 $\mu\text{g}/\text{m}^3$	Running annual mean	31.12.2003
Benzene	3.25 $\mu\text{g}/\text{m}^3$	Running annual mean	31.12.2010
1,3-Butadiene	2.25 $\mu\text{g}/\text{m}^3$	Running annual mean	31.12.2003
Carbon monoxide	10.0 mg/m^3	Running 8-hour mean	31.12.2003
Lead	0.5 $\mu\text{g}/\text{m}^3$	Annual mean	31.12.2004
Lead	0.25 $\mu\text{g}/\text{m}^3$	Annual mean	31.12.2008
Nitrogen dioxide	200 $\mu\text{g}/\text{m}^3$ not to be exceeded more than 18 times a year	1-hour mean	31.12.2005
Nitrogen dioxide	40 $\mu\text{g}/\text{m}^3$	Annual mean	31.12.2005
Particles (PM₁₀) (gravimetric)	50 $\mu\text{g}/\text{m}^3$, not to be exceeded more than 35 times a year	24-hour mean	31.12.2004
Particles (PM₁₀) (gravimetric)	40 $\mu\text{g}/\text{m}^3$	Annual mean	31.12.2004

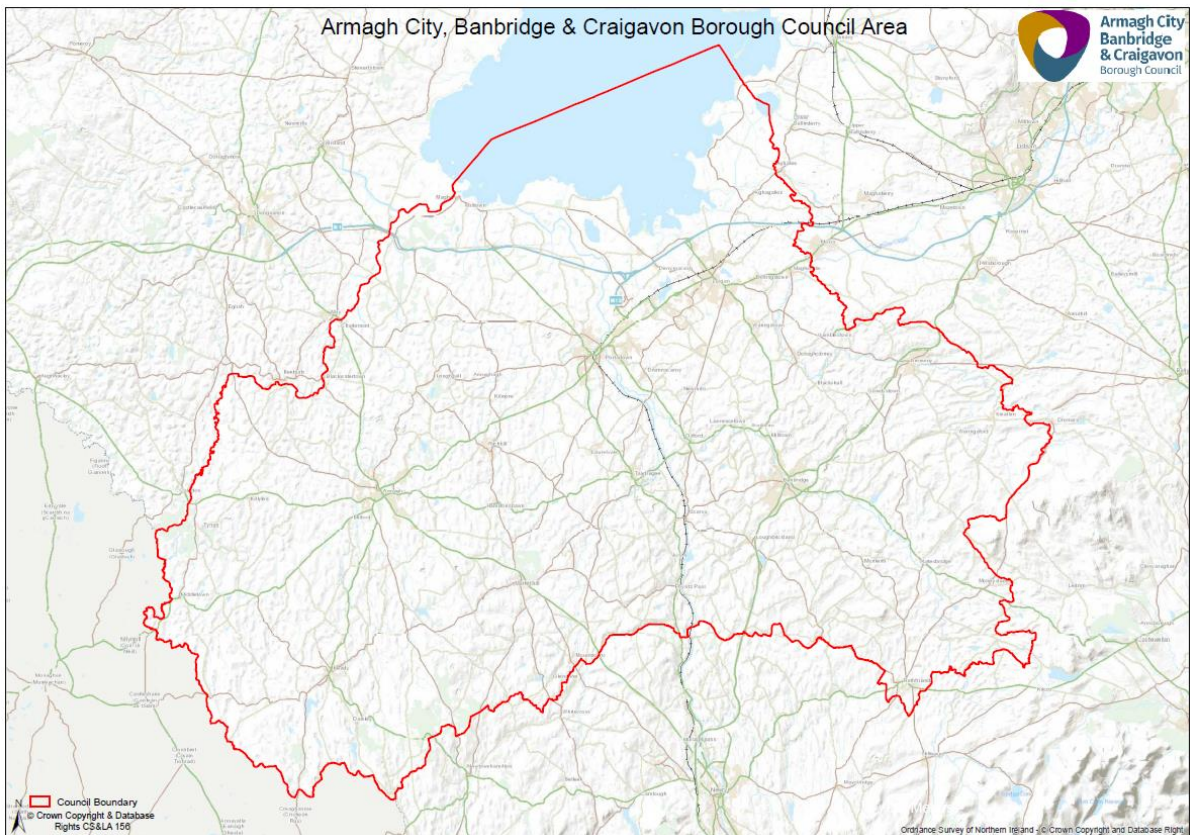
Sulphur dioxide	350µg/m ³ , not to be exceeded more than 24 times a year	1-hour mean	31.12.2004
Sulphur dioxide	125µg/m ³ , not to be exceeded more than 3 times a year	24-hour mean	31.12.2004
Sulphur dioxide	266µg/m ³ , not to be exceeded more than 35 times a year	15-minute mean	31.12.2005

1.4 Summary of Previous Review and Assessments

Report Type	Date	Exceedences	Detailed Assessment Required	AQMA's Declared
Initial Review and Assessment	Jan 2001	None	No	None
Progress Report	April 2005	None	No	None
Updating & Screening Assessment	April 2006	None	No	None
Progress Report	April 2007	None	No	None
Detailed Assessment for NO ₂	Nov 2007	None	No	None
Progress Report	April 2008	NO ₂	No	Yes
Updating & Screening Assessment	April 2009	NO ₂	No	In the previous year
Progress Report	May 2010	NO ₂	Yes	None
Progress Report	May 2011	NO ₂	No	Yes

Updating and Screening Assessment	April 2012	NO2	No	Yes
Progress Report	April 2013	NO2	No	No
Progress Report	April 2014	NO2	No	No new AQMAs
Updating and Screening Assessment	April 2015	NO2	Yes	No new AQMAs
Progress Report & DA (hereby presented)	April 2016 (May 2017)	NO2	Yes	To be declared
Progress Report	August 2017	NO2	Yes	Declaration prepared
Update and Screening Assessment	October 2018	NO2	No	Borough-wide declaration made
Progress Report	2019	NO2	No	Borough declared
Progress Report	2020	NO2	No	Borough declared
Update and Screening Assessment	2021	NO2	No	Borough declared

Figure 1.1 Map of AQMA Boundary



2 New Monitoring Data

2.1 Summary of Monitoring Undertaken

2.1.1 Automatic Monitoring Sites

One automatic site is located at Lonsdale Road in Armagh and forms part of the AURN network and provides information for the draft Programme for Government Air Quality Indicator.

Figure 2.1 Map of Automatic Monitoring Site

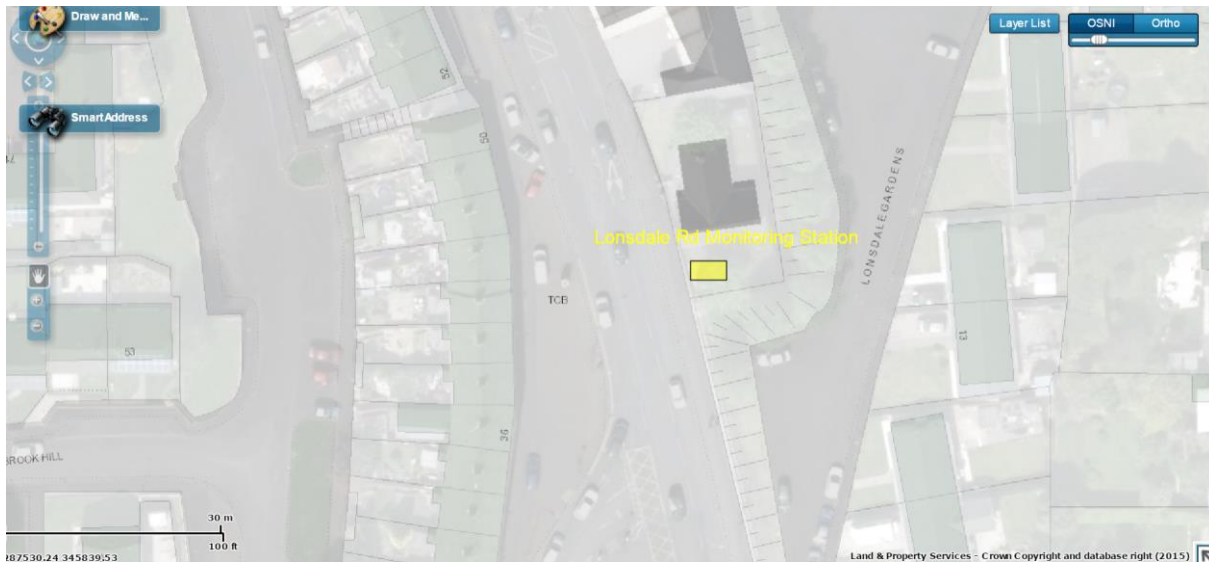


Table 2.1 Details of Automatic Monitoring Sites

Site ID	Site Name	Site Type	X OS Grid Ref	Y OS Grid Ref	Inlet Height (m)	Pollutants Monitored	In AQMA? Which AQMA?	Monitoring Technique	Relevant Exposure? (Y/N with distance (m) to relevant exposure)	Distance to kerb of nearest road (m) (N/A if not applicable)	Does this location represent worst-case exposure?
AURN1	Lonsdale Road	Roadside	287520	345840	2.0	NO2 & PM10	Y	API & BAM	Y (20m)	3m	Y

2.1.2 Non-Automatic Monitoring Sites

During 2018 – 2022 Armagh City, Banbridge and Craigavon Borough Council carried out monitoring of NO₂ by diffusion tubes at 28 sites within the Borough.

2.1.2.1 QA/QC

The NO₂ diffusion tubes were prepared and analysed by Gradko.

2.1.2.2 Preparation method used

Gradko - Nitrogen dioxide in diffusion tubes by UV spectrophotometry. Tubes were prepared in 20% TEA/ Water. Analysed on UV 04 Camspec M550. The Overall M.U. is 7.8% +/- and the Limit of Detection 0.017ug NO₂. This analysis was in accordance with the Gradko documented in-house laboratory method GLM7.

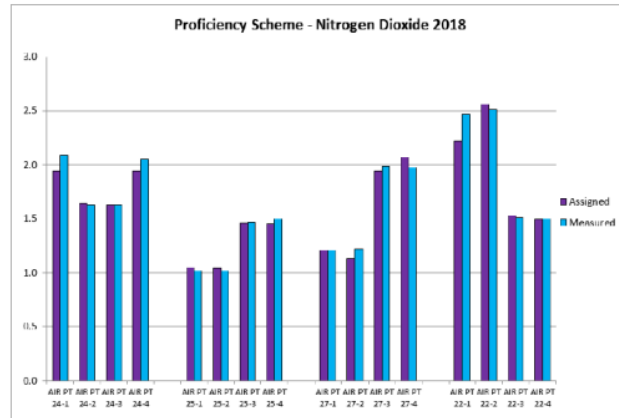
2.1.2.3 Results of laboratory precision

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AIR PT Nitrogen Dioxide Proficiency Scheme Results 2018
 Methods: GLM 7 – CARY 60 Spectrophotometer

AIR PT Proficiency Scheme - Nitrogen Dioxide 2018

AIR PT Proficiency Scheme - Nitrogen Dioxide 2018					
Date	Round	Assigned value	Procedure GLM 7		
			Measured concentration	z-Score	% Bias
Feb-18	AIR PT 24-1	2.09	1.94	-0.91	-7.2%
Feb-18	AIR PT 24-2	1.63	1.64	0.08	0.6%
Feb-18	AIR PT 24-3	1.63	1.63	0	0.0%
Feb-18	AIR PT 24-4	2.05	1.94	-0.72	-5.4%
May-18	AIR PT 25-1	1.02	1.05	0.39	2.9%
May-18	AIR PT 25-2	1.02	1.04	0.26	2.0%
May-18	AIR PT 25-3	1.47	1.46	-0.09	-0.7%
May-18	AIR PT 25-4	1.5	1.45	-0.44	-3.3%
Aug-18	AIR PT 27-1	1.21	1.21	0.00	0.0%
Aug-18	AIR PT 27-2	1.22	1.13	-0.99	-7.4%
Aug-18	AIR PT 27-3	1.99	1.94	-0.34	-2.5%
Aug-18	AIR PT 27-4	1.98	2.07	0.60	4.5%
Oct-18	AIR PT 22-1	2.47	2.22	-1.35	-10.1%
Oct-18	AIR PT 22-2	2.51	2.56	0.27	2.0%
Oct-18	AIR PT 22-3	1.51	1.53	0.18	1.3%
Oct-18	AIR PT 22-4	1.5	1.49	-0.1	-0.7%



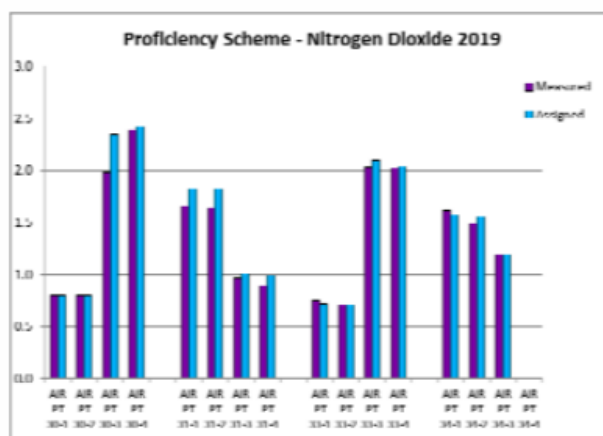
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AIR PT Nitrogen Dioxide Proficiency Scheme Results 2019

Methods: GLM 7 – CARY 60 Spectrophotometer

AIR PT Proficiency Scheme - Nitrogen Dioxide 2019					
Date	Round	Assigned value	Procedure GLM 7		
			Measured concentration	z-Score	% Bias
Feb-19	AIR PT 30-1	0.8	0.8	0	0.0%
Feb-19	AIR PT 30-2	0.8	0.8	0	0.0%
Feb-19	AIR PT 30-3	2.35	1.98	-2.1	-15.7%
Feb-19	AIR PT 30-4	2.42	2.39	-0.16	-1.2%
May-19	AIR PT 31-1	1.82	1.65	-1.24	-9.3%
May-19	AIR PT 31-2	1.82	1.64	-1.31	-9.9%
May-19	AIR PT 31-3	1.01	0.97	-0.53	-4.0%
May-19	AIR PT 31-4	0.99	0.89	-1.35	-10.1%
Aug-19	AIR PT 33-1	0.72	0.75	0.56	4.2%
Aug-19	AIR PT 33-2	0.71	0.71	0	0.0%
Aug-19	AIR PT 33-3	2.09	2.03	-0.38	-2.9%
Aug-19	AIR PT 33-4	2.04	2.02	-0.13	-1.0%
Oct-19	AIR PT 34-1	1.57	1.61	0.38	2.5%
Oct-19	AIR PT 34-2	1.56	1.49	-0.56	-4.5%
Oct-19	AIR PT 34-3	1.19	1.19	0	0.0%
Oct-19	AIR PT 34-4				

Sample wasted not submitted



Precision Summary Table

Diffusion Tube Preparation Method	2020 Good	2020 Bad	2021 Good	2021 Bad	2022 Good	2022 Bad
Gradko, 50% TEA in Acetone	19	1	16	0	14	0
Gradko, 20% TEA in Water	27	0	34	0	27	0

2.1.2.4. The bias adjustment factor being applied to the annual means from the diffusion tubes

The NO₂ diffusion tubes were prepared and analysed by Gradko. The Council obtained the appropriate bias factor from the DEFRA Website.

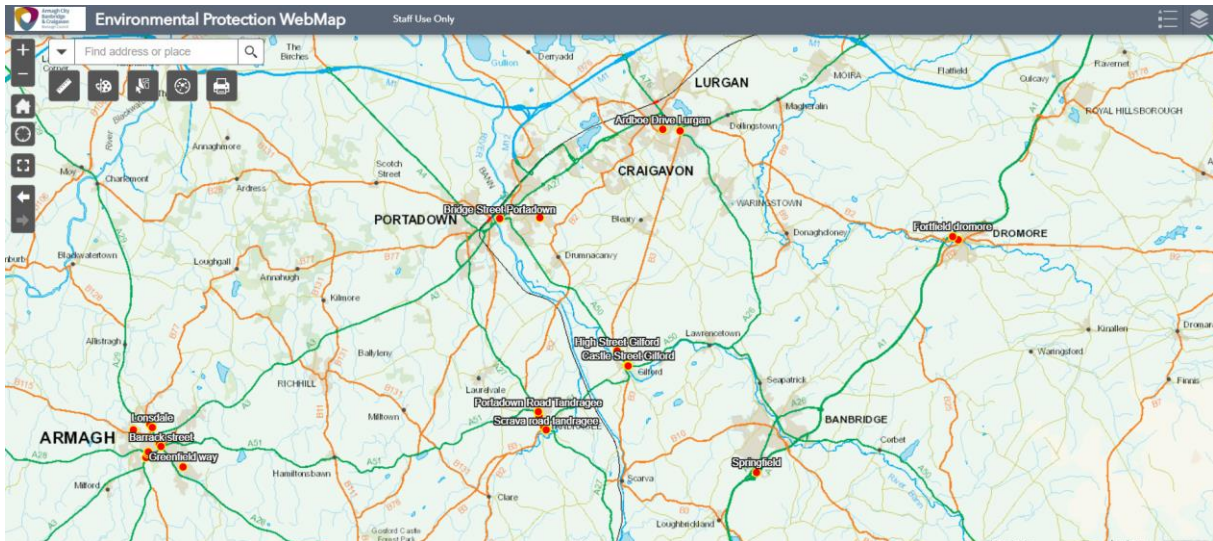
<https://laqm.defra.gov.uk/air-quality/air-quality-assessment/national-bias/>

Gradko	20% TEA in water	2017	Overall Factor3 (39 studies)	Use	0.87
Gradko	20% TEA in water	2018	Overall Factor3 (40 studies)	Use	0.92
Gradko	20% TEA in water	2019	Overall Factor3 (31 studies)	Use	0.91
Gradko	20% TEA in water	2020	Overall Factor3 (27 studies)	Use	0.81
Gradko	20% TEA in water	2021	Overall Factor3 (34 studies)	Use	0.84

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Gradko	20% TEA in water	2022	Overall Factor3 (27 studies)	Use	0.83
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Figure 2.2 Map of Non-Automatic Monitoring Sites



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Site Name	SiteType	x	y
Ardboe Drive Lurgan	Urban Background	-6.3335018	54.4573701
Ballyhannon Road	Urban Background	-6.411115	54.42664
Barrack Street	Roadside	-6.6493291	54.3466359
Bridge Street Portadown	Roadside	-6.4360087	54.4265305
Castle Street Gilford	Roadside	-6.358574	54.3722754
Church Road Dromore	Roadside	-6.1521407	54.4149994
Church street Tandragee	Roadside	-6.414741	54.3550848
Desert Lane	Urban Background	-6.6659737	54.3530617
Flush Place Lurgan	Roadside	-6.3227562	54.4567986
Fortfield Dromore	Urban Background	-6.1553061	54.416127
Greenfield Way	Urban Background	-6.6355648	54.3393258
Greenpark Terrace	Roadside	-6.6577487	54.3441884
High Street Gilford	Roadside	-6.3654988	54.3777238
Irish Street	Roadside	-6.6585615	54.3428862
Lonsdale x 3 TRIPLICATE	Roadside	-6.6545402	54.3537507
Mall west	Roadside	-6.650022	54.3475479
Market Street Tandragee	Roadside	-6.412982299	54.353035
Mill st Gilford	Roadside	-6.3593652	54.3726929
Mill Street Tandragee x3 TRIPLICATE	Roadside	-6.411746591	54.35104843
Portadown Road Tandragee	Roadside	-6.4149751	54.3564174
Railway Street	Roadside	-6.6557012	54.3548397
Scrava Road Tandragee	Roadside	-6.410403425	54.34971967
Springfield	Urban Background	-6.2804534	54.332694
Upper Irish Street	Roadside	-6.6570051	54.3449282

Table 2.2 Details of Non-Automatic Monitoring Sites

Site ID	Site Name	Site Type	X OS Grid Ref	Y OS Grid Ref	Site Height (m)	Pollutants Monitored	In AQMA? Which AQMA?	Is monitoring co-located with a Continuous Analyser (Y/N)	Relevant Exposure? (Y/N with distance (m) to relevant exposure)	Distance to kerb of nearest road (m) (N/A if not applicable)	Does this location represent worst-case exposure?
1	Ardboe Drive Lurgan	Urban background	-6.3335018	54.4573701	2m	NO2	Y	Y	Y (1m)	3m	Y
2	Ballyhannon Road	Urban background	-6.411115	54.42664	2m	NO2	Y	N	Y (5m)	4m	Y
3	Barrack street	Roadside	-6.6493291	54.3466359	2m	NO2	Y	N	Y(1m)	3m	Y
4	Bridge Street Portadown	Roadside	-6.4360087	54.4265305	2m	NO2	Y	N	Y(1m)	1m	Y
5	Castle Street Gilford	Roadside	-6.358574	54.3722754	2m	NO2	Y	N	Y(1m)	1m	Y

6	Church Road Dromore	Roadside	-6.1521407	54.4149994	2m	NO2	Y	N	Y(1m)	1m	Y
7	Church street tandragee	Roadside	-6.414741	54.3550848	2m	NO2	Y	N	Y(1m)	1m	Y
8	Desart lane	Urban background	-6.6659737	54.3530617	2m	NO2	Y	N	Y(5m)	1m	Y
9	Flush Place Lurgan	Roadside	-6.3227562	54.4567986	2m	NO2	Y	N	Y(1m)	2m	Y
10	Fortfield dromore	Urban Background	-6.1553061	54.416127	2m	NO2	Y	N	Y(5m)	5m	Y
11	Greenfield way	Urban Background	-6.6355648	54.3393258	2m	NO2	y	N	Y(5m)	2m	Y
12	Greenpark terrace	Roadside	-6.6577487	54.3441884	2m	NO2	Y	N	Y(<m)	1m	Y
13	High Street Gilford	Roadside	-6.3654988	54.3777238	2m	NO2	Y	N	Y(1m)	1m	Y

14	Irish Street	Roadside	-6.6585615	54.3428862	2m	NO2	Y	N	Y(1m)	1m	Y
15, 16 & 17	Lonsdale x 3 TRIPLICATE	Roadside	-6.6545402	54.3537507	2m	NO2	y	N	Y(15m)	2m	Y
18	Mall west	Roadside	-6.650022	54.3475479	2m	NO2	Y	N	Y(1m)	1m	Y
19	Market Street Tandragee	Roadside	-6.41298229	54.353035	2m	NO2	Y	N	Y (1m)	1m	Y
20	Mill st Gilford	Roadside	-6.3593652	54.3726929	2m	NO2	Y	N	Y (1m)	1m	Y
21, 22 & 23	Mill Street Tandragee x3 TRIPLICATE	Roadside	-6.41174659	54.35104843	2m	NO2	Y	N	Y (1m)	1m	Y
24	Portadown Road Tandragee	Roadside	-6.4149751	54.3564174	2m	NO2	Y	N	Y (1m)	1m	Y
25	Railway street	Roadside	-6.6557012	54.3548397	2m	NO2	Y	N	Y (1m)	1m	Y

26	Scrava road tandragee	Roadside	-6.41040342	54.34971967	2m	NO2	Y	N	Y (1m)	1m	Y
27	Springfield	Urban background	-6.2804534	54.332694	2m	NO2	Y	N	Y (5m)	5m	Y
28	Upper Irish Street	Roadside	-6.6570051	54.3449282	2m	NO2	Y	N	Y (1m)	1m	Y

2.2 Comparison of Monitoring Results with Air Quality Objectives

2.2.1 Nitrogen Dioxide

The AURN site at Lonsdale Road has continued to be supported by DAERA and hence is maintained by ACBCBC to provide data to support the draft Programme for Government (Northern Ireland) air quality indicator.

Automatic Monitoring Data

The site does not show an exceedance of the AQS objective for nitrogen dioxide in 2020. This has been consistently the case. A significant reduction in pollution is observed from 2019 and 2018 which is entirely expected due to various Government movement restrictions in place on occasion throughout 2020.

Table 2.3 Results of Automatic Monitoring for Nitrogen Dioxide: Annual Mean NO₂ Monitoring Results (µg/m³) for Comparison with the Annual Mean Objective

Site ID	Site Type	Within AQMA? Which AQMA?	Valid Data Capture for period of monitoring % ^a	Valid Data Capture 2020 % ^b	2016* ^c	2017* ^c	2018* ^c	2019* ^c	2020 ^c
AURN1	Roadside	Y	96	96	21	24	25	24	21

In **bold**, exceedance of the NO₂ annual mean AQS objective of 40µg/m³.

^a i.e. data capture for the monitoring period, in cases where monitoring was only carried out for part of the year.

^b i.e. data capture for the full calendar year (e.g. if monitoring was carried out for six months the maximum data capture for the full calendar year would be 50%).

^c Means should be “annualised” as per LAQM.TG16, if monitoring was not carried out for the full year.

*Annual mean concentrations for previous years are optional.

Table 2.4 Results of Automatic Monitoring for Nitrogen Dioxide: Number of Exceedances of 1-hour mean Objective (200µg/m³)

Site ID	Site Type	Within AQMA? Which AQMA?	Valid Data Capture for period of monitoring % ^a	Valid Data Capture 2020 % ^b	2016* ^c	2017* ^c	2018* ^c	2019* ^c	2020 ^c
AURN1	Roadside	Y	96	96	0	0	0	0	0

In **bold**, exceedance of the NO₂ hourly mean AQS objective (200µg/m³ – not to be exceeded more than 18 times per year

^a i.e. data capture for the monitoring period, in cases where monitoring was only carried out for part of the year.

^b i.e. data capture for the full calendar year (e.g. if monitoring was carried out for six months the maximum data capture for the full calendar year would be 50%).

^c If the period of valid data is less than 85%, include the 99.8th percentile of hourly means in brackets

* Number of exceedances for previous years are optional.

Diffusion Tube Monitoring Data

The following table details the monitoring locations and results.

Key findings in 2020:

All sites show a marked decrease in pollution concentrations which is entirely expected and consistent given the reduction in traffic flows associated with periods of lockdown in 2020.

Monitoring has continued in Tandragee and in the vicinity of Irish Street in Armagh with a view to determining the extent of any areas where objective values are being exceeded. Whilst the results would again suggest that the area of exceedance is very small there is little confidence in the data as a long-term picture due to the large short-term changes due to COVID 19 restrictions.

Table 2.5 Results of Nitrogen Dioxide Diffusion Tubes in 2020

Site ID	Location	Site Type	Within AQMA? Which AQMA?	Triplicate or Co-located Tube	Full Calendar Year Data Capture 2020 (Number of Months or %) ^a	2020 Annual Mean Concentration ($\mu\text{g}/\text{m}^3$) - Bias Adjustment factor = 0.81 ^b
1	Ardboe Drive Lurgan	Urban background	ACBCBC AQMA		12	7
2	Ballyhannon Road	Urban background	ACBCBC AQMA		12	7
3	Barrack street	Roadside	ACBCBC AQMA		12	24
4	Bridge Street Portadown	Roadside	ACBCBC AQMA		12	26
5	Castle Street Gilford	Roadside	ACBCBC AQMA		12	20
6	Lurgan Road Dromore	Roadside	ACBCBC AQMA		12	18
7	Church street Tandragee	Roadside	ACBCBC AQMA		12	26
8	Desart lane	Urban background	ACBCBC AQMA		10	10

9	Flush Place Lurgan	Roadside	ACBCBC AQMA		12	24
10	Fortfield dromore	Urban Background	ACBCBC AQMA		12	8
11	Greenfield way	Urban Background	ACBCBC AQMA		12	6
12	Greenpark terrace	Roadside	ACBCBC AQMA		12	33
13	High Street Gilford	Roadside	ACBCBC AQMA		12	17
14	Irish Street	Roadside	ACBCBC AQMA		12	26
15, 16 & 17	Lonsdale x 3 TRIPLICATE	Roadside	ACBCBC AQMA	Triplicate & Co- located	12	25
18	Mall West	Roadside	ACBCBC AQMA		12	29
19	Market Street Tandragee	Roadside	ACBCBC AQMA		12	15
20	Mill St Gilford	Roadside	ACBCBC AQMA		12	23
21, 22 & 23	Mill Street Tandragee x3 TRIPLICATE	Roadside	ACBCBC AQMA	Triplicate	12	32

24	Portadown Road Tandragee	Roadside	ACBCBC AQMA		12	24
25	Railway street	Roadside	ACBCBC AQMA		12	33
26	Scrava road tandragee	Roadside	ACBCBC AQMA		12	13
27	Springfield	Urban background	ACBCBC AQMA		11	9
28	Upper Irish Street	Roadside	ACBCBC AQMA		12	27

In **bold**, exceedance of the NO₂ annual mean AQS objective of 40µg/m³.

Underlined, annual mean > 60µg/m³, indicating a potential exceedance of the NO₂ hourly mean AQS objective.

^a Means should be “annualised” as per LAQM.TG16, if full calendar year data capture is less than 75%.

^b If an exceedance is measured at a monitoring site not representative of public exposure, NO₂ concentration at the nearest relevant exposure should be estimated based on the NO₂ fall-off with distance calculator, and results should be discussed in a specific section.

Table 2.6 Results of Nitrogen Dioxide Diffusion Tubes, adjusted for bias ($\mu\text{g}/\text{m}^3$): 2016 to 2020

Site ID	Site Type	Within AQMA? Which AQMA?	2016 ^a (Bias Adjustment Factor = 0.92)	2017 ^a (Bias Adjustment Factor = 0.87)	2018 ^a (Bias Adjustment Factor = 0.92)	2019 ^a (Bias Adjustment Factor = 0.91)	2020 ^a (Bias Adjustment Factor = 0.81)
1	Ardboe Drive Lurgan	ACBCBC AQMA	11	9.6	10	13	7
2	Ballyhannon Road	ACBCBC AQMA	11	8.03	9	8	7
3	Barrack street	ACBCBC AQMA	33	29.7	31	33	24
4	Bridge Street Portadown	ACBCBC AQMA	33	34.6	35	35	26
5	Castle Street Gilford	ACBCBC AQMA			27	20	20
6	Lurgan Road Dromore	ACBCBC AQMA	27	24.2	25	23	18
7	Church street Tandragee	ACBCBC AQMA			32	30	26
8	Desart lane	ACBCBC AQMA	14	12.6	13	13	10
9	Flush Place Lurgan	ACBCBC AQMA	35	30.7	30	27	24
10	Fortfield dromore	ACBCBC AQMA	12	11.6	12	12	8
11	Greenfield way	ACBCBC AQMA	9	8.2	8	8	6
12	Greenpark terrace	ACBCBC AQMA	46	43.2	42	41	33
13	High Street Gilford	ACBCBC AQMA			22	25	17
14	Irish Street	ACBCBC AQMA			37	33	26

15, 16 & 17	Lonsdale x 3 TRIPLICATE	ACBCBC AQMA	31	30.7	31	31	25
18	Mall West	ACBCBC AQMA	37	35.8	36	37	29
19	Market Street Tandragee	ACBCBC AQMA			20	19	15
20	Mill St Gilford	ACBCBC AQMA	39	30.4	32	28	23
21, 22 & 23	Mill Street Tandragee x3 TRIPLICATE	ACBCBC AQMA	45	42.8	43	42	32
24	Portadown Road Tandragee	ACBCBC AQMA			31	28	24
25	Railway street	ACBCBC AQMA	42	42.7	40	41	33
26	Scarva road Tandragee	ACBCBC AQMA			16	17	13
27	Springfield	ACBCBC AQMA	14	12.4	13	14	9
28	Upper Irish Street	ACBCBC AQMA			35	35	27

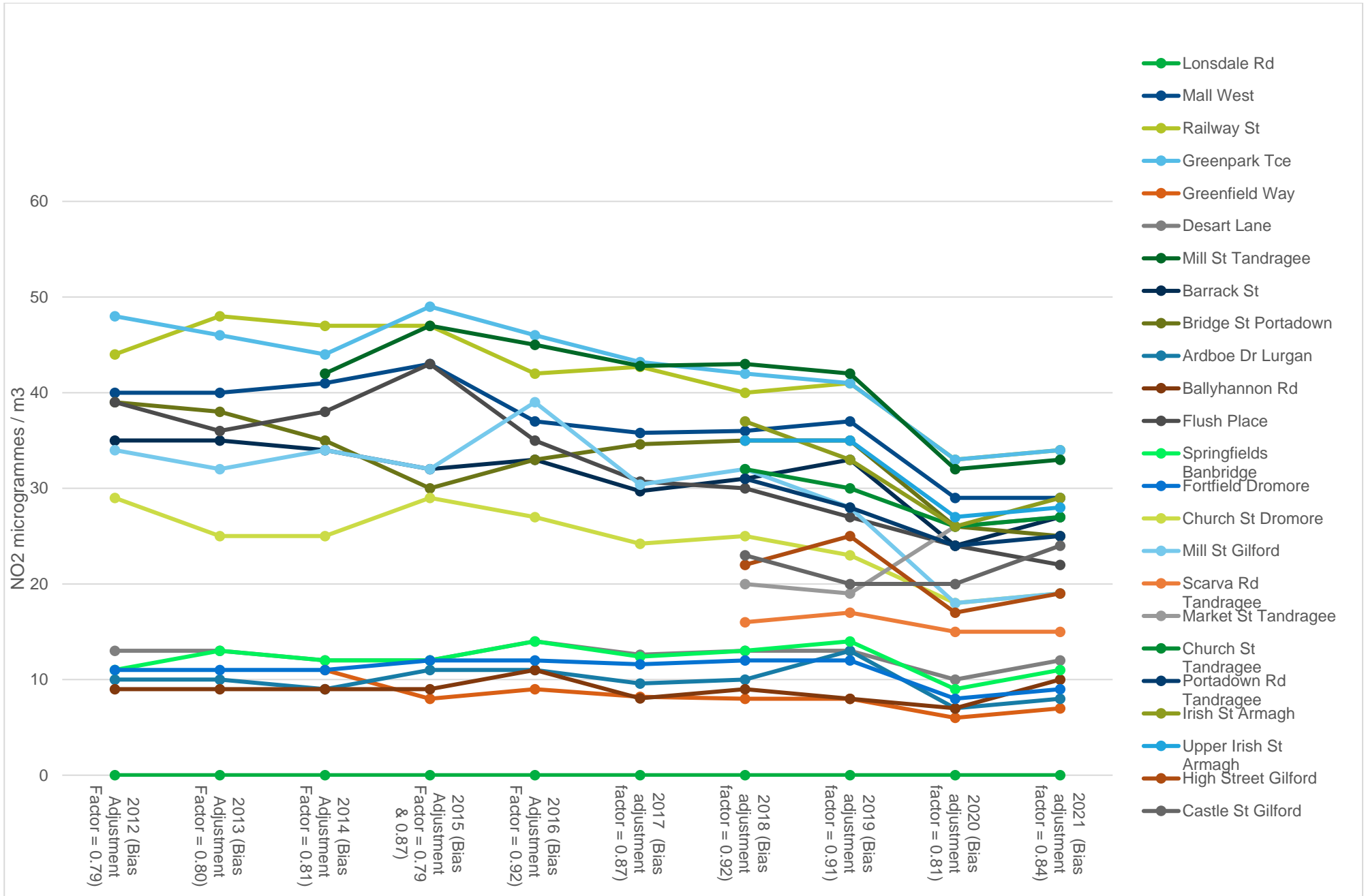
In **bold**, exceedance of the NO₂ annual mean AQS objective of 40µg/m³.

Underlined, annual mean > 60µg/m³, indicating a potential exceedance of the NO₂ hourly mean AQS objective.

^a Means should be “annualised” as per LAQM.TG16, if full calendar year data capture is less than 75%.

Figure 2.3 Trends in Annual Mean Nitrogen Dioxide Concentrations measured at Diffusion Tube Monitoring Sites

The following figure shows the most complete set of data available at the time of writing. The impact of covid-19 related restrictions can be clearly seen in 2020 with an increase in 2021. It is also notable that the Council introduced a series of new monitoring locations in 2018 hence why no trend analysis is available for those sites.



2.2.2 Particulate Matter (PM₁₀)

Particulate matter is monitored at the Lonsdale Road AURN station wholly for the purposes of DAERA / DEFRA data collection. PM10 concentrations have never exceeded the objectives at this location.

Table 2.7 Annual Mean PM₁₀ Monitoring Results (µg/m³) for Comparison with the Annual Mean Objective

Site ID	Site Type	Within AQMA? Which AQMA?	Valid Data Capture for monitoring Period % ^a	Valid Data Capture 2020 % ^b	Confirm Gravimetric Equivalent (Y or N/A)	2016* ^c	2017* ^c	2018* ^c	2019* ^c	2020 ^c
AURN1	Roadside	Y	95	95	Y	18	14	19	17	17

In **bold**, exceedance of the PM₁₀ annual mean AQS objective of 40µg/m³.

^a i.e. data capture for the monitoring period, in cases where monitoring was only carried out for part of the year.

^b i.e. data capture for the full calendar year (e.g. if monitoring was carried out for six months the maximum data capture for the full calendar year would be 50%).

^c Means should be “annualised” as per LAQM.TG16, if monitoring was not carried out for the full year.

* Optional.

Table 2.8 Results of Automatic Monitoring for PM₁₀: Number of Exceedances of 24-hour mean Objective (50µg/m³)

Site ID	Site Type	Within AQMA? Which AQMA?	Valid Data Capture for monitoring Period % ^a	Valid Data Capture 2020 % ^b	Confirm Gravimetric Equivalent	2016* ^c	2017* ^c	2018* ^c	2019* ^c	2020 ^c
AURN1	Roadside	Y	95	95	Y	2	1	3	5	2

In **bold**, exceedance of the PM₁₀ daily mean AQS objective (50µg/m³ – not to be exceeded more than 35 times per year).

^a i.e. data capture for the monitoring period, in cases where monitoring was only carried out for part of the year.

^b i.e. data capture for the full calendar year (e.g. if monitoring was carried out for six months the maximum data capture for the full calendar year would be 50%).

^c if data capture is less than 85%, include the 90.4th percentile of 24-hour means in brackets.

* Optional.

2.2.3 Other pollutants monitored

No other pollutants are currently monitored but it is hoped to commence PAH monitoring in 2021/22 to further inform Government policy on solid fuel emissions.

2.2.4 Summary of Compliance with AQS Objectives

Armagh City, Banbridge and Craigavon Borough Council have examined the results of monitoring which in 2020 all fall below the AQS objectives. However, this is most likely due to reductions in traffic flow associated with COVID restrictions movement. Therefore more data is required before determining if the Borough's AQMA can be revoked. Additional monitoring data is also desired to confirm the 2019 results which showed most areas of exceedance of the objectives were very small in size (due to local pinch-points leading to congestion) with only the main route through Armagh on Mall West/Lonsdale Road/Greenpark Terrace extending for a few hundred metres.

Therefore the air quality (NO₂ and PM₁₀) across the Borough generally remains very good. Long-term trends are downwards expected to be due to gradual improvements in vehicle emissions from the overall NI fleet.

3 Road Traffic Sources

No new road schemes have been commenced in the Borough since the 2018 USA Report. Two schemes have been identified which would directly address the exceedances of AQS objectives in Armagh.

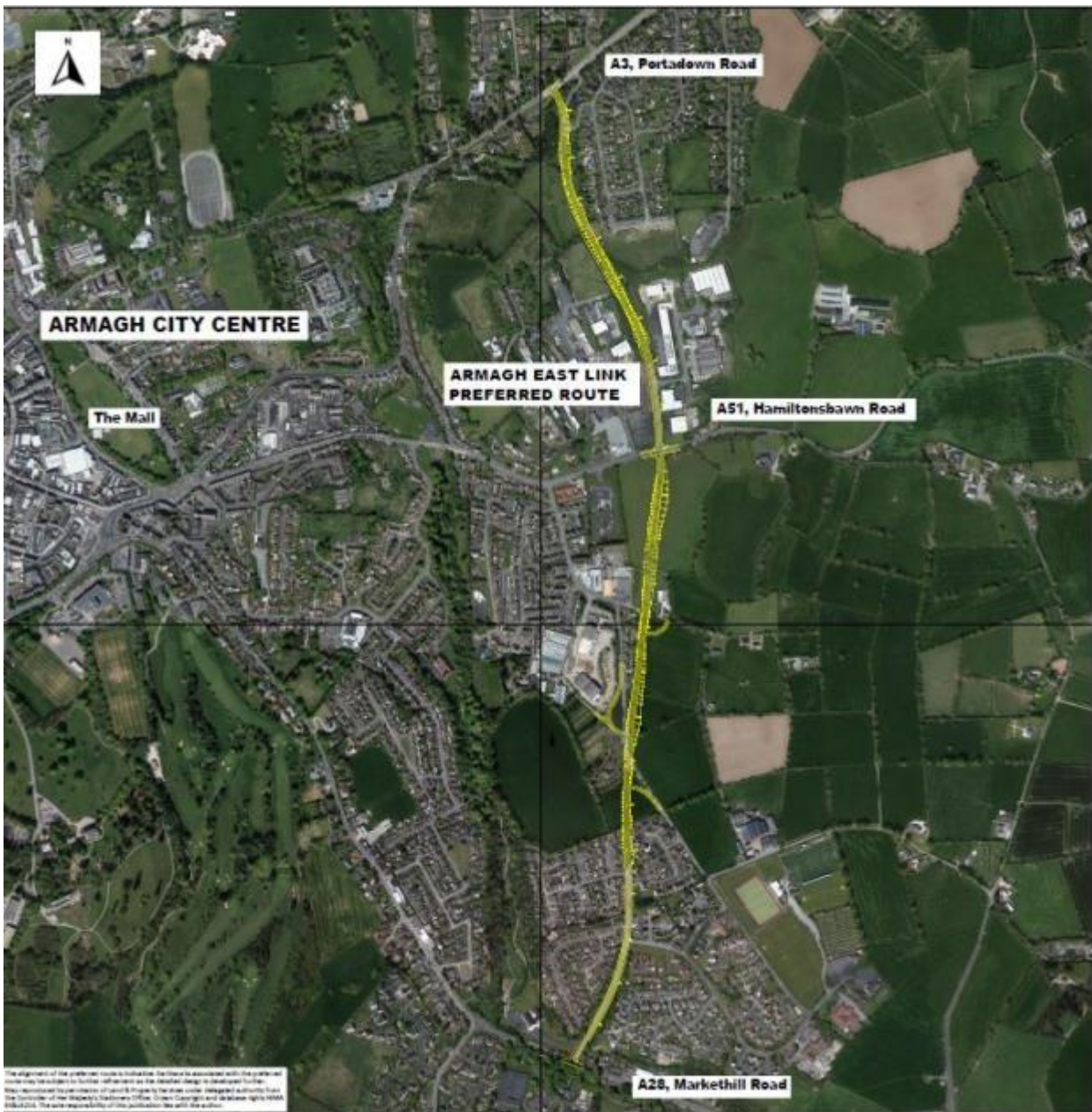
A28 Armagh East - overview

- [A28 Armagh East](#)

To extend the Strategic Road Network by providing a new link road on the east side of the city of Armagh connecting between the A3 Portadown Road and A28 Markethill Road to relieve traffic conditions and improve the environment in the historic city centre.

The proposal

The A28 Armagh East Link proposal includes a single carriageway link road, approximately 2.5km long, linking the A3 and A28 Trunk Roads. This will also incorporate a junction with the A51 Hamiltonsbawn Road, a third radial route leaving the city centre. The proposed route would run from the junction of A28 Markethill Road and Ardmore Road, extending northwards to a proposed junction with A3 Portadown Road to the city side of Linsey's Heights. The proposed road would utilise the existing Ardmore Road, the existing road through Hamiltonsbawn Road Industrial Estate and a small part of the Linsey's Heights Road.



A28 Armagh East Link – Preferred Route

Current position

The Department on 14th August 2023 published a prioritised list of major road schemes that will continue to be progressed. There are a number of reasons why the prioritisation of projects, currently in the pipeline, was necessary, including the challenging budgetary position and constrained resources (in terms of finance and staff) and, importantly, the Department’s commitments under the Climate Change (NI) Act 2022.

Transport policies and plans are currently being reviewed and updated to align with these commitments and this work will help define what major transport

infrastructure projects should be included within any future major roads programme.

The Department is currently drafting a new Regional Transportation Strategy (RTS). It will form an overarching framework which will shape the planning and delivery of transport infrastructure and services up to 2035.

Work is ongoing to complete the draft RTS for public consultation by end of 2023. Once the draft RTS has been published, the Department will be able to review all work to date on the draft Regional Strategic Transport Network Transport Plan (RSTNTP) in the context of the RTS and the carbon target for transport, which has not yet been set.

The publication of the prioritised list of major road schemes, that will continue to be progressed, explains that development work on the Armagh East Link is currently paused. A decision to recommence development work will be considered following confirmation of the RSTNTP.

Cost

The indicative costs of the A28 Armagh East Link are estimated to be £20 million.

Key Dates

- 13 March 2006 - Public Information day in Armagh City Hotel
- 20 March 2007 - Public Information day in Armagh City Hotel
- 11 June 2014 - Public Information day in Armagh City Hotel
- 22 July 2019 - Stage 2 scheme assessment report approved

A3 Armagh North and West Link - overview

This scheme aims to improve the A3 Portadown - Armagh - Monaghan Road, a link corridor in the Strategic Road Network, and to improve the environment in the historic city centre by providing a new link road around the north and west sides of the city of Armagh.

The proposal

The Armagh Area Plan 2004 includes proposals for single carriageway North Link and West Link roads around the City of Armagh linking from the A3 Portadown Road to the A3 Monaghan Road. These proposals were considered

with three other options and an out-of-town corridor was confirmed as the preferred option on 26 June 2008.

Description

The A3 Armagh North and West Link scheme is included in the Regional Strategic Transport Network Transport Plan 2015, published in March 2005. It is listed in the Preparation Pool which contains schemes expected to be implemented within the next 5 years subject to satisfactory completion of the necessary Statutory procedures and the level of funding available at that time. Roads Service (now DfI Roads) has appointed consultants to assist with the development and progression of the scheme. In March 2007 a Consultation Day was held which detailed the process for assessing the route corridor options that were brought forward to Stage 2 preferred corridor assessment and explained the work that would be carried out to assess their suitability.

Three corridors were assessed under engineering, environmental, and transport criteria to determine suitability.

The assessment criteria included:

- environmental impact
- safety
- economy
- integration
- accessibility

Current position

The Department on 14th August 2023 published a prioritised list of major road schemes that will continue to be progressed. There are a number of reasons why the prioritisation of projects, currently in the pipeline, was necessary, including the challenging budgetary position and constrained resources (in terms of finance and staff) and, importantly, the Department's commitments under the Climate Change (NI) Act 2022.

Transport policies and plans are currently being reviewed and updated to align with these commitments and this work will help define what major transport infrastructure projects should be included within any future major roads programme.

The Department is currently drafting a new Regional Transportation Strategy (RTS). It will form an overarching framework which will shape the planning and delivery of transport infrastructure and services up to 2035.

Work is ongoing to complete the draft RTS for public consultation by end of 2023. Once the draft RTS has been published, the Department will be able to review all work to date on the draft Regional Strategic Transport Network Transport Plan (RSTNTP) in the context of the RTS and the carbon target for transport, which has not yet been set.

The publication of the prioritised list of major road schemes, that will continue to be progressed, explains that development work on the Armagh North and West Link is currently paused. A decision to recommence development work will be considered following confirmation of the RSTNTP.

Key dates

- 13 March 2006 - Public information day
- 20 March 2007 - Public information day
- 26 June 2008 - Public information day - selection of preferred route corridor
- 11 June 2014 - Associated public information day with Armagh East Link

Cost

- £55 to £75M (estimate will be subject to review)

3.1 Narrow Congested Streets with Residential Properties Close to the Kerb

Armagh City, Banbridge and Craigavon Borough Council confirms that there are no new/newly identified congested streets with a flow above 5,000 vehicles per day and residential properties close to the kerb, that have not been adequately considered in previous rounds of Review and Assessment.

3.2 Busy Streets Where People May Spend 1 hour or More Close to Traffic

Armagh City, Banbridge and Craigavon Borough Council confirms that there are no new/newly identified busy streets where people may spend 1 hour or more close to traffic.

3.3 Roads with a High Flow of Buses and/or HGVs.

Armagh City, Banbridge and Craigavon Borough Council confirms that there are no new/newly identified roads with high flows of buses/HGVs.

3.4 Junctions

Armagh City, Banbridge and Craigavon Borough Council confirms that there are no new/newly identified busy junctions/busy roads.

3.5 New Roads Constructed or Proposed Since the Last Round of Review and Assessment

Armagh City, Banbridge and Craigavon Borough Council confirms that there are no new/proposed roads.

3.6 Roads with Significantly Changed Traffic Flows

The Environmental Health Department required that an air quality impact assessment be presented for a major new tourist attraction in the Banbridge area. The scheme proposed incorporated the use of shuttle buses from the main road network to take patrons to the attraction site, therefore there was no significant impact on Local Air Quality Management.

Armagh City, Banbridge and Craigavon Borough Council confirms that there are no new/newly identified roads with significantly changed traffic flows.

3.7 Bus and Coach Stations

Armagh City, Banbridge and Craigavon Borough Council confirms that there are no

4 Other Transport Sources

4.1 Airports

Armagh City, Banbridge and Craigavon Borough Council confirms that there are no airports in the Local Authority area.

4.2 Railways (Diesel and Steam Trains)

4.2.1 Stationary Trains

Armagh City, Banbridge and Craigavon Borough Council confirms that there are no locations where diesel or steam trains are regularly stationary for periods of 15 minutes or more, with potential for relevant exposure within 15m.

4.2.2 Moving Trains

Armagh City, Banbridge and Craigavon Borough Council confirms that there are no locations with a large number of movements of diesel locomotives, and potential long-term relevant exposure within 30m.

4.3 Ports

Armagh City, Banbridge and Craigavon Borough Council confirms that there are no ports or shipping that meet the specified criteria within the Local Authority area.

5 Industrial Sources

5.1 Industrial Installations

5.1.1 New or Proposed Installations for which an Air Quality Assessment has been Carried Out

Armagh City, Banbridge and Craigavon Borough Council has assessed new/proposed industrial installations, and concluded that it will not be necessary to proceed to a Detailed Assessment.

5.1.2 Existing Installations where Emissions have Increased Substantially or New Relevant Exposure has been Introduced

Air quality impacts were assessed and considered at a major quarry extension near Banbridge. No dust/particulate matter impacts were expected to local amenity nor LAQM.

Armagh City, Banbridge and Craigavon Borough Council confirms that there are no industrial installations with substantially increased emissions or new relevant exposure in their vicinity within its area or nearby in a neighbouring authority.

5.1.3 New or Significantly Changed Installations with No Previous Air Quality Assessment

Armagh City, Banbridge and Craigavon Borough Council confirms that there are no new or proposed industrial installations for which planning approval has been granted within its area or nearby in a neighbouring authority from which an impact upon Local Air Quality Management would be expected.

5.2 Major Fuel Depots

There are no major fuel (petrol) storage depots within the Local Authority area.

5.3 Petrol Stations

Armagh City, Banbridge and Craigavon Borough Council confirms that there are no petrol stations meeting the specified criteria.

5.4 Poultry Farms

The Environmental Health Department of Armagh City, Banbridge and Craigavon Borough Council provides technical comment to the Planning Department of the Council. It is recommended that residential properties and poultry farms are kept a minimum of 100m apart for reasons of noise, odour and air quality.

The Borough has a reasonably large poultry production sector. However, Armagh City, Banbridge and Craigavon Borough Council confirms that there are no poultry farms that to our knowledge meet the specified criteria.

6 Commercial and Domestic Sources

6.1 Biomass Combustion – Individual Installations

Through the Renewable Heat Incentive the Northern Ireland Government promoted and facilitated the development of biomass plant across the Borough. Not all of these installations were subject to planning controls or other regulatory controls that would have brought them to the attention of Environmental Health.

Armagh City, Banbridge and Craigavon Borough Council confirms that there are no biomass combustion plant in the Local Authority area that we are aware of that may have an impact on Local Air Quality Management.

6.2 Biomass Combustion – Combined Impacts

Armagh City, Banbridge and Craigavon Borough Council confirms that there are no biomass combustion plant in the Local Authority area that we are aware of that might have a combined impact.

6.3 Domestic Solid Fuel Burning

The Environmental Health Department remain concerned that compliance with the 2% sulphur content limit within solid fuel blends is not being met. If this is not being met (due to high sulphur content pet-coke being within the blends) then the combustions products will not be smokeless (despite being labelled and authorised as such) and the particulate matter produced will be much higher.

Sampling is on-going at present, however, the NI Regulations have not been updated and enforcement action is not possible until the British Standard testing method as cited in the Regulations is updated.

Armagh City, Banbridge and Craigavon Borough Council confirms that there are no areas of significant domestic fuel use in the Local Authority area.

7 Fugitive or Uncontrolled Sources

Armagh City, Banbridge and Craigavon Borough Council confirms that there are no potential sources of fugitive particulate matter emissions in the Local Authority area.

8 Conclusions and Proposed Actions

8.1 Conclusions from New Monitoring Data

New monitoring data was highly influenced by reductions in traffic volumes associated with COVID 19 movement restrictions. All monitoring network locations to remain in place to gather further data.

8.2 Conclusions from Assessment of Sources

There were no additional sources identified that would have a significant impact upon Local Air Quality Management nor any requiring a detailed assessment.

8.3 Proposed Actions

Monitoring to continue across the network.

Council to continue to lobby for road infrastructure to alleviate congestion problems in Armagh City with commensurate benefits for areas of exceedance of traffic emitted pollutants in the city.

Sulphur content testing of solid fuel to be undertaken to determine compliance.

PAH monitoring application submitted with hope of extending pollutants monitored to include PAH.

9 References

- Local Air Quality Management Guidance – TG16
- Local Air Quality Management Guidance – TG22
<https://laqm.defra.gov.uk/wp-content/uploads/2022/08/LAQM-TG22-August-22-v1.0.pdf>
- Department for Infrastructure (DfI) – Regional Development Strategy for NI 2035
<https://www.infrastructure-ni.gov.uk/publications/regional-development-strategy-2035>
- DAERA – Environment Strategy
<https://www.daera-ni.gov.uk/news/poots-approves-finalised-environment-strategy>
- DfI – Strategic Planning Policy Statement
<https://www.infrastructure-ni.gov.uk/publications/strategic-planning-policy-statement>

Appendices

Appendix A: Quality Assurance / Quality Control (QA/QC) Data

Appendix B: Impact of COVID-19 upon LAQM

Appendix C: DMRB Calculations

Appendix A: Quality Assurance / Quality Control (QA/QC) Data

QA/QC of Automatic Monitoring

The automatic monitoring site at Lonsdale Road is part of the AURN network of roadside sites. The AURN network is administered on behalf of DEFRA by Bureau Veritas. The QA/QC of data management is carried out by Ricardo who visit the site to complete audits twice per year. Maintenance of the automatic monitoring equipment was carried out by ET under contract from this Council. ET performed site maintenance twice per year and are available for any urgent call outs with 24 hours' notice. Calibrations and minor maintenance were completed on a fortnightly basis by the Environmental Health Manager (Environmental Protection) and Senior Environmental Health Officer acting as a Local Site Operators (LSOs) under contract from Bureau Veritas.

Diffusion Tube Bias Adjustment Factors

Spreadsheet 9/18 has been used and the national factor chosen.

QA/QC of Diffusion Tube Monitoring

Preparation method used:

Gradko - Nitrogen dioxide in diffusion tubes by UV spectrophotometry. Tubes were prepared in 20% TEA/ Water. Analysed on UV 04 Camspec M550. The Overall M.U. is 7.8% +/- and the Limit of Detection 0.017ug NO₂. This analysis was in accordance with the Gradko documented in-house laboratory method GLM7.

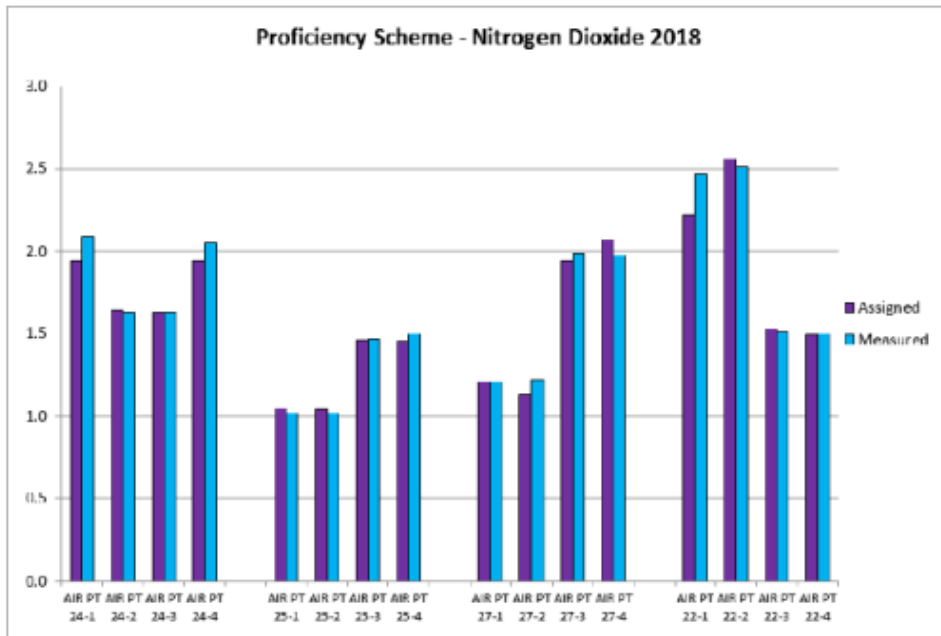
The following precision tables are presented for all the data given in this report.

AIR PT Nitrogen Dioxide Proficiency Scheme Results 2018

Methods: GLM 7 – CARY 60 Spectrophotometer

AIR PT Proficiency Scheme - Nitrogen Dioxide 2018

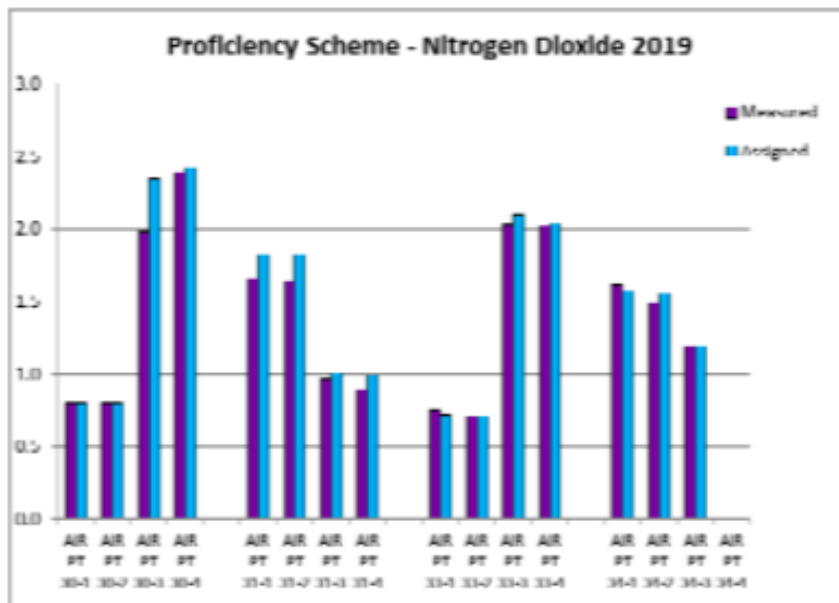
AIR PT Proficiency Scheme - Nitrogen Dioxide 2018					
Date	Round	Assigned value	Procedure GLM 7		
			Measured concentration	z-Score	% Bias
Feb-18	AIR PT 24-1	2.09	1.94	-0.91	-7.2%
Feb-18	AIR PT 24-2	1.63	1.64	0.08	0.6%
Feb-18	AIR PT 24-3	1.63	1.63	0	0.0%
Feb-18	AIR PT 24-4	2.05	1.94	-0.72	-5.4%
May-18	AIR PT 25-1	1.02	1.05	0.39	2.9%
May-18	AIR PT 25-2	1.02	1.04	0.26	2.0%
May-18	AIR PT 25-3	1.47	1.46	-0.09	-0.7%
May-18	AIR PT 25-4	1.5	1.45	-0.44	-3.3%
Aug-18	AIR PT 27-1	1.21	1.21	0.00	0.0%
Aug-18	AIR PT 27-2	1.22	1.13	-0.99	-7.4%
Aug-18	AIR PT 27-3	1.99	1.94	-0.34	-2.5%
Aug-18	AIR PT 27-4	1.98	2.07	0.60	4.5%
Oct-18	AIR PT 22-1	2.47	2.22	-1.35	-10.1%
Oct-18	AIR PT 22-2	2.51	2.56	0.27	2.0%
Oct-18	AIR PT 22-3	1.51	1.53	0.18	1.3%
Oct-18	AIR PT 22-4	1.5	1.49	-0.1	-0.7%



AIR PT Nitrogen Dioxide Proficiency Scheme Results 2019

Methods: GLM 7 – CARY 60 Spectrophotometer

AIR PT Proficiency Scheme - Nitrogen Dioxide 2019					
Date	Round	Assigned value	Procedure GLM 7		
			Measured concentration	z-Score	% Bias
Feb-19	AIR PT 30-1	0.8	0.8	0	0.0%
Feb-19	AIR PT 30-2	0.8	0.8	0	0.0%
Feb-19	AIR PT 30-3	2.35	1.98	-2.1	-15.7%
Feb-19	AIR PT 30-4	2.42	2.39	-0.16	-1.2%
May-19	AIR PT 31-1	1.82	1.65	-1.24	-9.3%
May-19	AIR PT 31-2	1.82	1.64	-1.31	-9.9%
May-19	AIR PT 31-3	1.01	0.97	-0.53	-4.0%
May-19	AIR PT 31-4	0.99	0.89	-1.35	-10.1%
Aug-19	AIR PT 33-1	0.72	0.75	0.56	4.2%
Aug-19	AIR PT 33-2	0.71	0.71	0	0.0%
Aug-19	AIR PT 33-3	2.09	2.03	-0.38	-2.9%
Aug-19	AIR PT 33-4	2.04	2.02	-0.13	-1.0%
Oct-19	AIR PT 34-1	1.57	1.61	0.38	2.5%
Oct-19	AIR PT 34-2	1.56	1.49	-0.56	-4.5%
Oct-19	AIR PT 34-3	1.19	1.19	0	0.0%
Oct-19	AIR PT 34-4		Sample wasted not submitted		



Precision Summary Table

Diffusion Tube Preparation Method	2020 Good	2020 Bad	2021 Good	2021 Bad	2022 Good	2022 Bad
Gradko, 50% TEA in Acetone	19	1	16	0	14	0
Gradko, 20% TEA in Water	27	0	34	0	27	0

Gradko are currently related as good for the 20%TEA/Water method.

Appendix B: Impact of COVID-19 upon LAQM

COVID-19 has had a significant impact on society. Inevitably, COVID-19 has also had an impact on the environment, with implications to air quality at local, regional and national scales. COVID-19 has presented various challenges for Local Authorities with respect to undertaking their statutory LAQM duties in the 2021 reporting year.

Despite the challenges that the pandemic has given rise to, the events of 2020 have also provided Local Authorities and other organisations with an opportunity to quantify the air quality impacts associated with wide-scale and extreme intervention and changes in behaviour such as reduced road traffic and working from home.

Armagh City, Banbridge and Craigavon Borough Council were fully committed to the maintenance of the LAQM and AURN network in the Borough and successfully achieved this through the diligence and commitment of Environmental Health staff.

We are firmly of the believe that monitoring data is key to providing an evidence base for policy decisions. It was quickly realised that the movement restrictions would provide a unique opportunity to assess the impact of traffic emissions upon the pollution concentrations monitored across the network.

It can be seen that a significant reduction can be achieved through the reduction in travel by fossil fuel combustion sources (as well as the benefits to mitigating climate change, noise, cleanliness etc). There is no doubt that working-from-home etc can have a marked benefit upon exposure to concentrations in excess of the AQS objectives. The thrust of the Borough's Air Quality Action Plan – to reduce or eliminate unnecessary fossil fuel combustion powered journeys at any point across the Borough – remains valid and indeed

has been strongly vindicated by the monitoring results in 2020. Whilst it must be acknowledged that the pandemic caused tremendous suffering on a personal, social and economic level – significant improvements in local air quality can be achieved by use of technology and working practices which reduce unnecessary journeys.

