Causeway Coast and Glens Borough Council

2017 Air Quality Progress Report

In fulfillment of Environment (Northern Ireland) Order 2002
Local Air Quality Management

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Executive Summary

Continuous and passive monitoring has continued throughout the last year within the Borough to gauge nitrogen dioxide levels from traffic emissions. Within the Air Quality Management area declared in Dungiven levels remain above the annual mean objective level. Beyond this area nitrogen dioxide levels are below the annual mean objective level of 40ugm^{-3}.

Continuous monitoring within the AQMA has resumed since May 2017 following replacement of the last analyser which was broken. Insufficient data has been collected to comprehensively comment on continuous monitoring.

All other pollutants have previously been assessed and no further or detailed assessments are required as local circumstances have not changed.

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1 Introduction

1.1 Description of Local Authority Area

Causeway Coast and Glens Borough Council is located along the North and East coasts of the province and encompasses the former Councils of Limavady, Coleraine, Moyle and Ballymoney. It has a population of just over 140,000 residents and covers an area of approximately 2000km^2

The council area is a mix of market towns, small industrial hubs and open countryside.

1.2 Purpose of Progress Report

This report fulfils the requirements of the Local Air Quality Management (LAQM) 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.

For Local Authorities in Northern Ireland, Progress Reports are required in the intervening years between the three-yearly Updating and Screening Assessment reports. Their purpose is to maintain continuity in the LAQM process.

They are not intended to be as detailed as Updating and Screening Assessment Reports, or to require as much effort. However, if the Progress Report identifies the risk of exceedance of an Air Quality Objective, the Local Authority (LA) should undertake a Detailed Assessment immediately, and not wait until the next round of Review and Assessment.

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 micrograms per cubic metre µg/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		Date to be achieved by
	Concentration	Measured as	
Benzene	16.25 µg/m^3	Running annual mean	31.12.2003
	3.25 µg/m^3	Running annual mean	31.12.2010
1,3-butadiene	2.25 µg/m^3	Running annual mean	31.12.2003
Carbon monoxide	10 mg/m^3	Running 8-hour mean	31.12.2003
Lead	0.50 µg/m^3	Annual mean	31.12.2004
	0.25 µg/m^3	Annual mean	31.12.2008
Nitrogen dioxide	200 µg/m^3 not to be exceeded more than 18 times a year	1-hour mean	31.12.2005
	40 µg/m^3	Annual mean	31.12.2005
Particulate matter (PM_{10}) (gravimetric)	50 µg/m^3, not to be exceeded more than 35 times a year	24-hour mean	31.12.2004
	40 µg/m^3	Annual mean	31.12.2004
Sulphur dioxide	350 µg/m^3, not to be exceeded more than 24 times a year	1-hour mean	31.12.2004
	125 µg/m^3, not to be exceeded more than 3 times a year	24-hour mean	31.12.2004
	266 µg/m^3, not to be exceeded more than 35 times a year	15-minute mean	31.12.2005

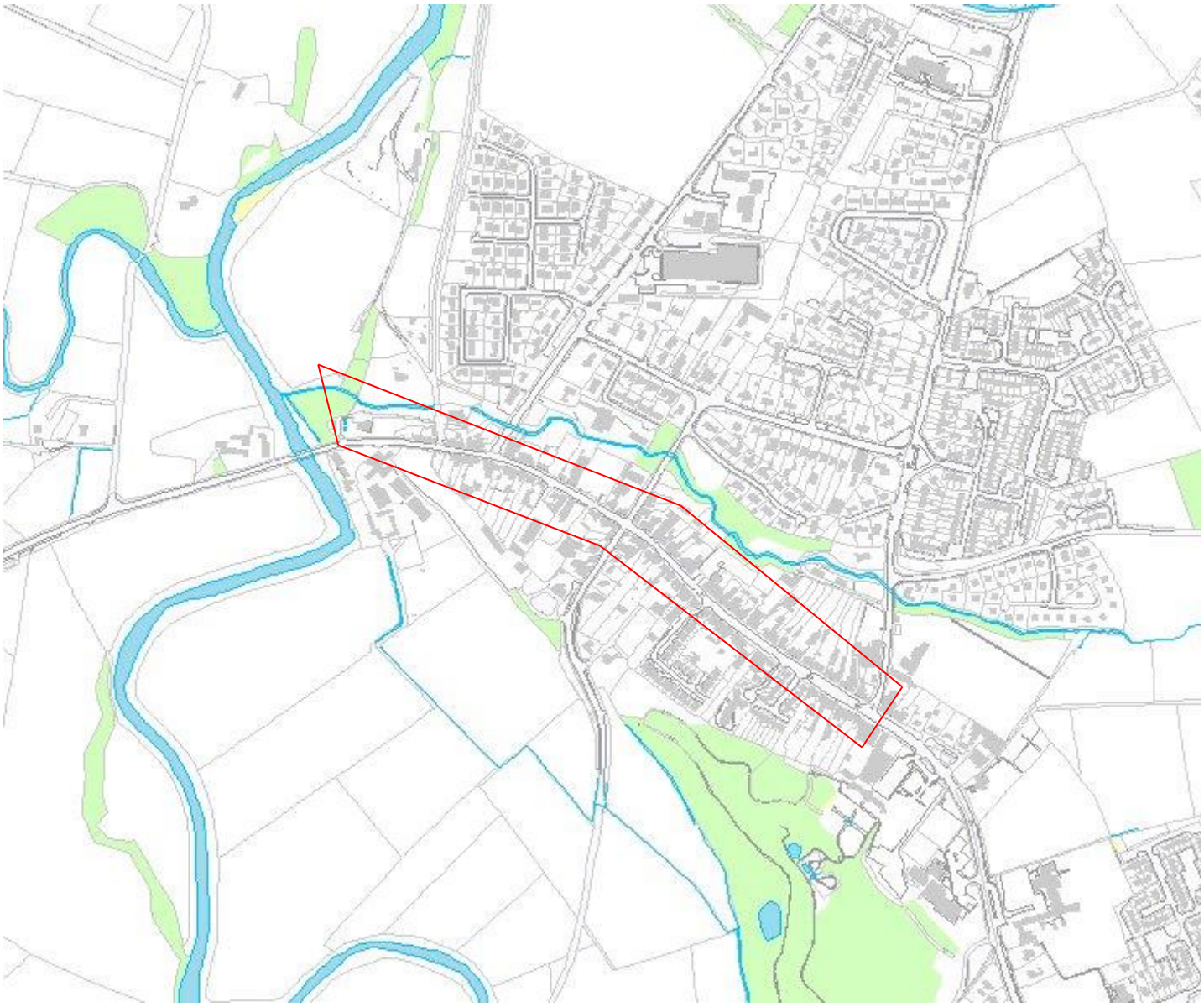
1.4 Summary of Previous Review and Assessments

To date the following assessments have been completed:

Desktop assessments were carried out within legacy Councils (Coleraine, Ballymoney, Ballycastle and Limavady) to determine if pollutant levels were likely to exceed the National Air Quality Objective levels as set out within the Air Quality Regulations (NI) 2003. Of particular interest for these Councils were nitrogen dioxide from traffic emissions, particulate matter (PM10) and sulphur dioxide. These are associated with the burning of fuel and industrial processes. Following on from these desktop assessments further analysis of pollutants was carried out. Fuel use surveys, DMRB assessments and passive monitoring were carried out to assess levels. In terms of the legacy Councils Air Quality Management Areas (AQMA) were declared in Main Street Dungiven for nitrogen dioxide and Glebeside Ballymoney for PM10. The Glebeside AQMA was undeclared as houses in this estate had been converted over to gas. The AQMA in Dungiven remains in place.

Figure 1.1 – Map(s) of AQMA Boundaries (if applicable)

Map illustrating AQMA, Main Street, Dungiven



2 New Monitoring Data

2.1 Summary of Monitoring Undertaken

2.1.1 Automatic Monitoring Sites

The continuous monitor in Dungiven had broken down and was replaced by Council in March 2017. No automatic data is available for 2016. Passive monitoring has however continued to gauge if the annual mean concentration of nitrogen dioxide is being exceeded.

Figure 2.1 – Map(s) of Automatic Monitoring Sites (if applicable)

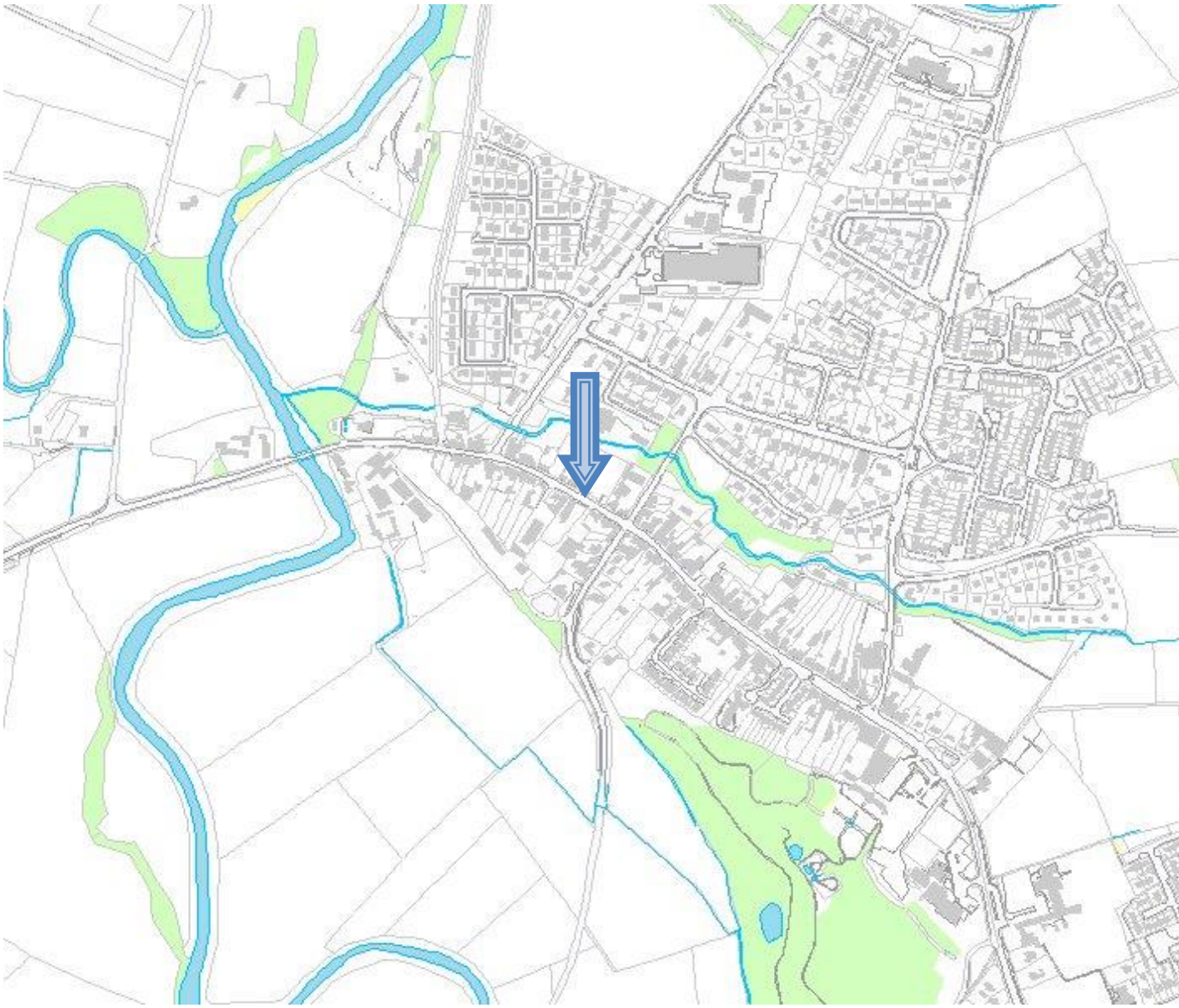


Table 2.1 – Details of Automatic Monitoring Sites

Site ID	Site Name	Site Type	X OS Grid Reference	Y OS Grid Reference	Inlet Height (m)	Pollutants Monitored	In AQMA?	Monitoring Technique	Relevant Exposure? (Y/N with distance (m) from monitoring site to relevant exposure)	Distance to Kerb of Nearest Road (m) (N/A if not applicable)	Does this Location Represent Worst-Case Exposure?
Dungiven AQMA	Main Street	Urban roadside	54.928354	-6.926665	2.0	NO2	Y	Chemiluminescent	Y	1M	Y

2.1.2 Non-Automatic Monitoring Sites

This department uses Gradko passive diffusion tubes which are supplied and analysed by Gradko's own laboratory which is fully accredited and approved. The tubes are 20% TEA in water. The precision of the tubes is declared as good and the adjustment factor for 2016 is 0.92

Figure 2.2 – Map(s) of Non-Automatic Monitoring Sites

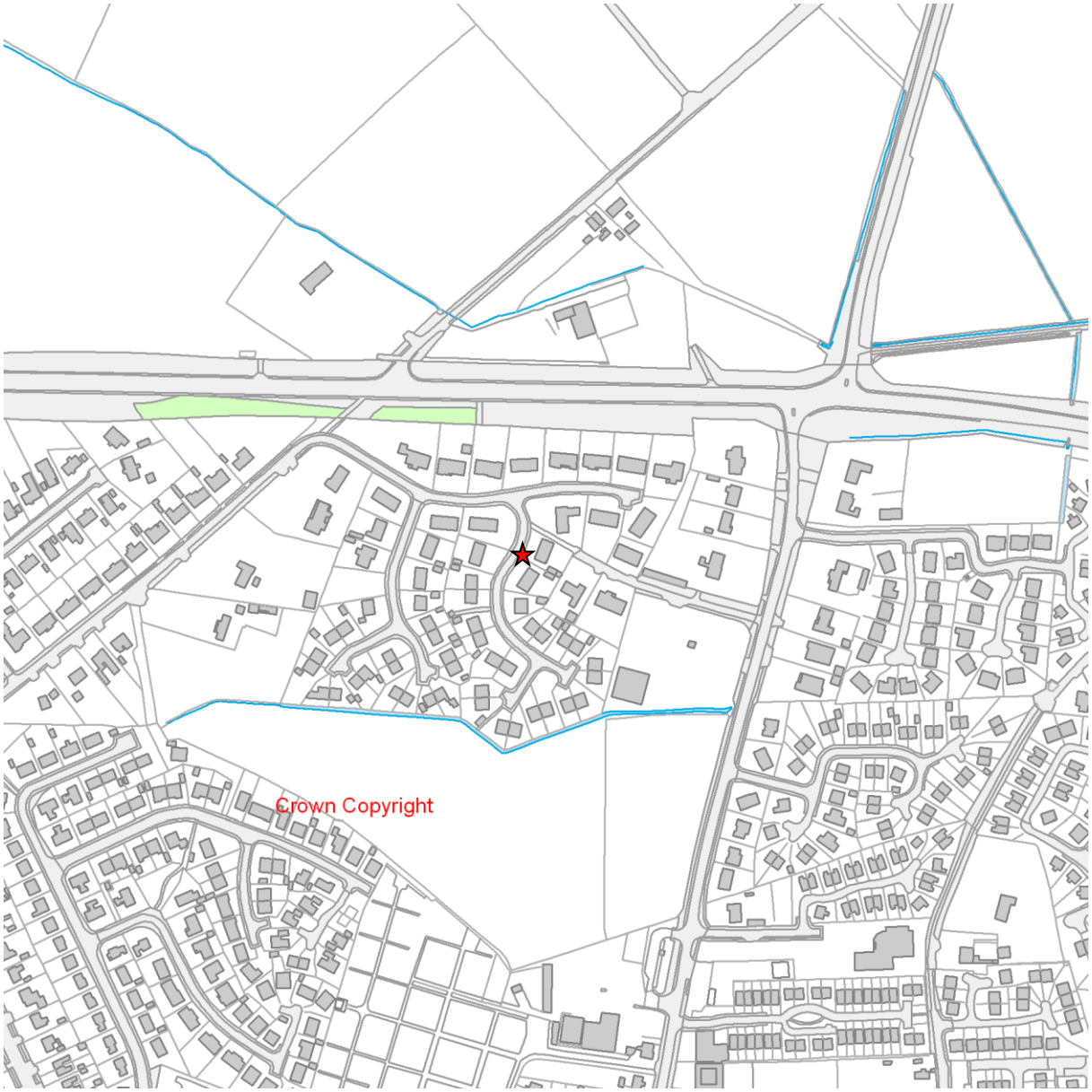
BALLYMONEY SITES

1N Kerbside 19 Linenhall Street

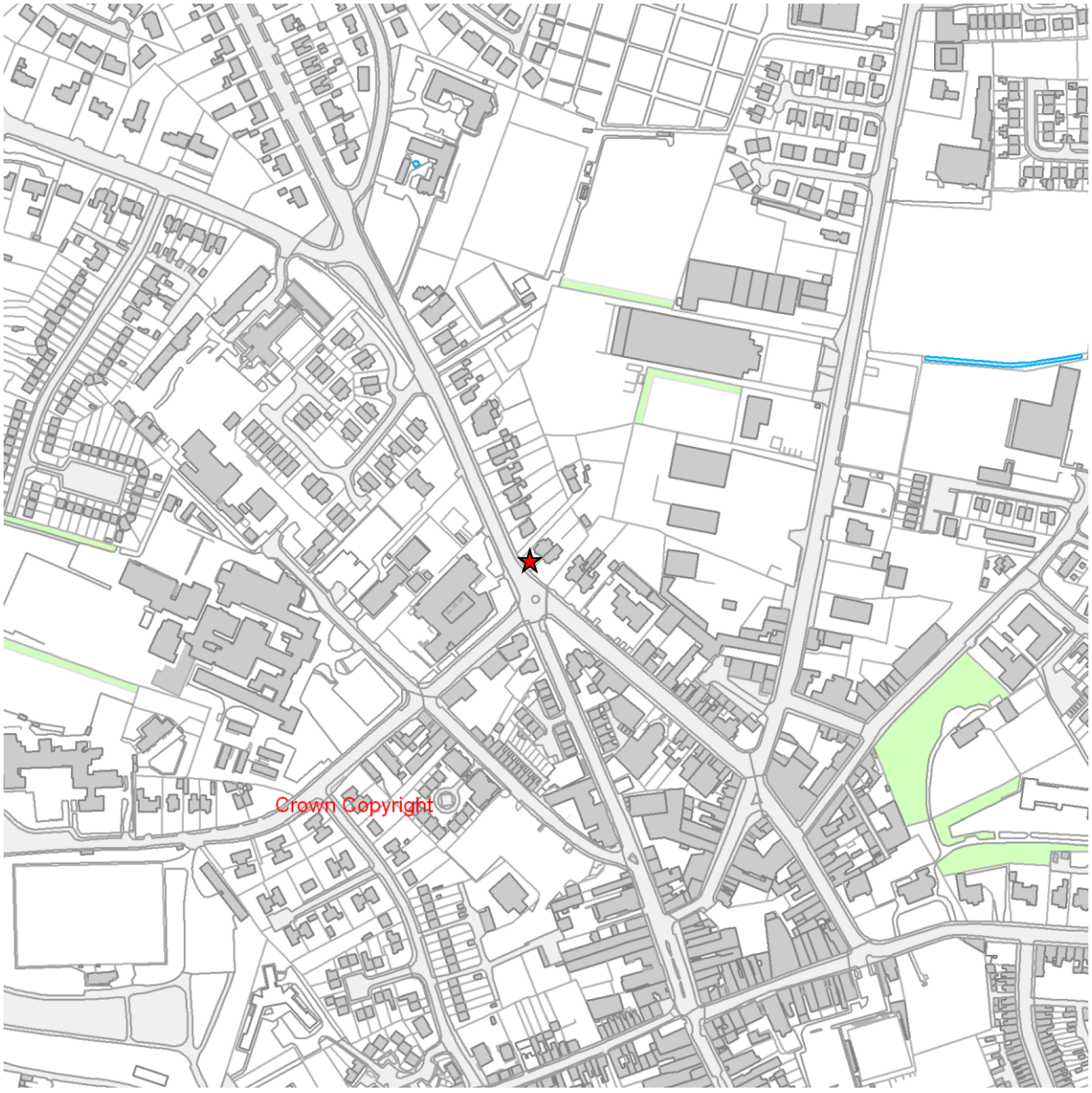
2N Kerbside 8 Ballybogey Road

3N Urban Background Opposite 16 Armour Avenue

4N Urban Background 2-4 Semicock Avenue



6N Kerbside 31 Charles Street

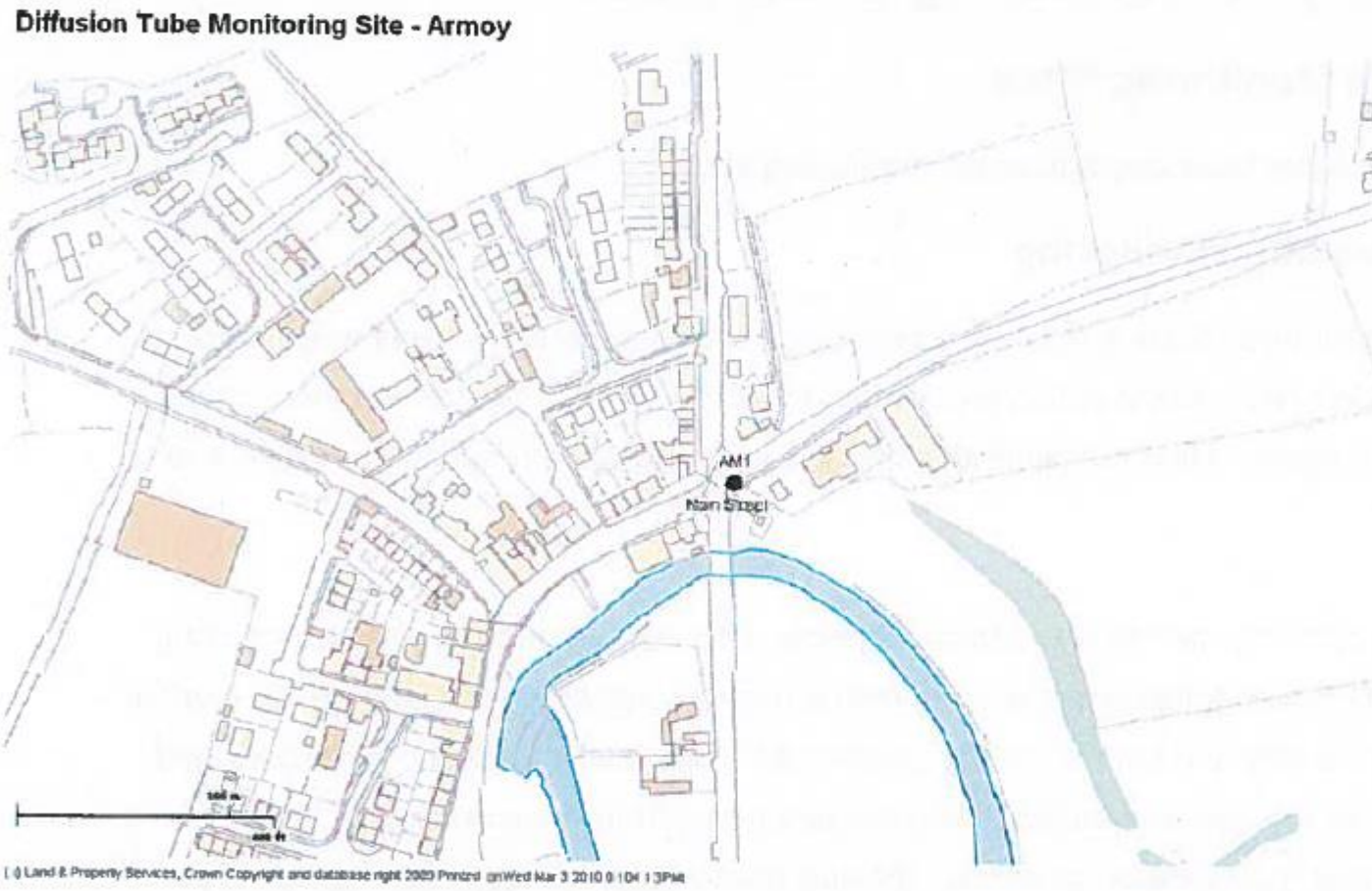


7N Kerbside Opposite 51 Queen Street

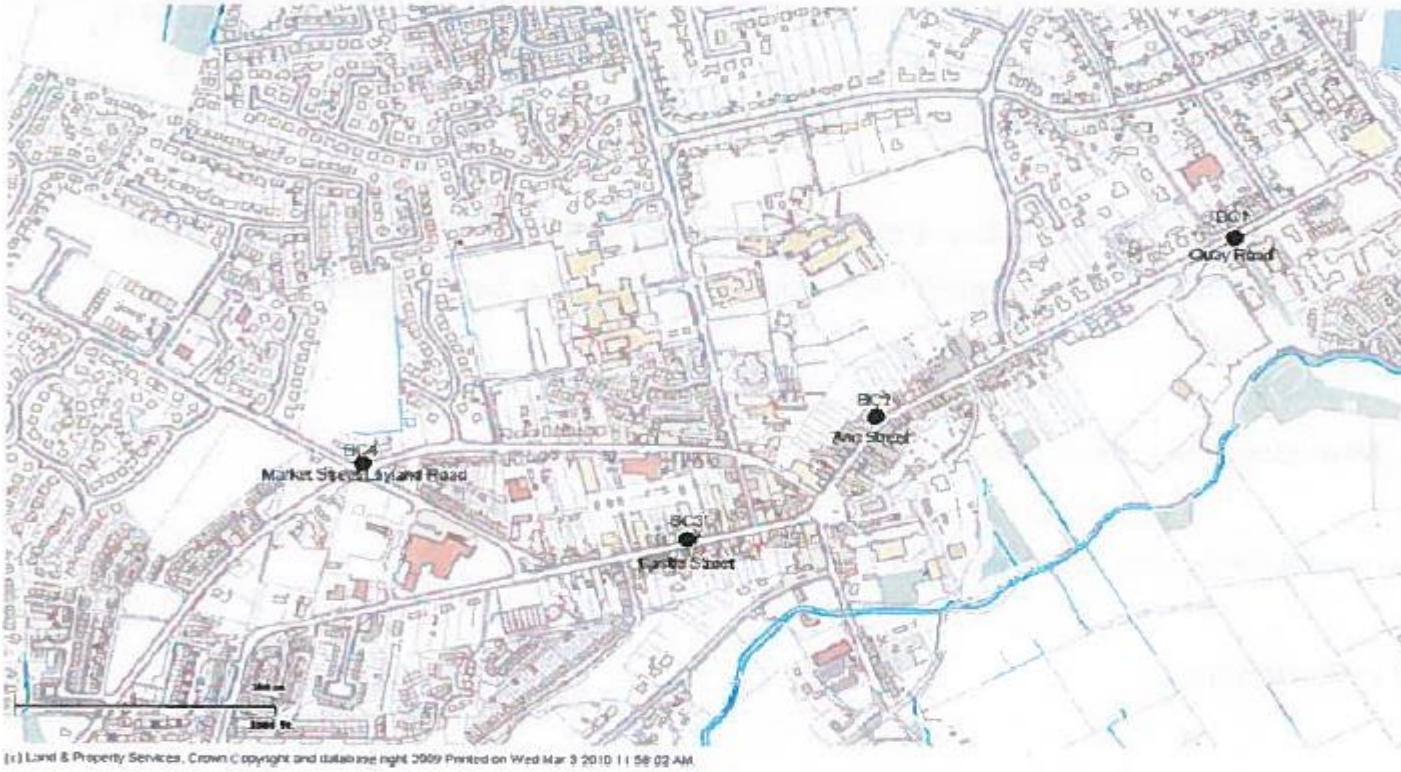
8N Kerbside Meetinghouse Street

9N Kerbside Castle Street

MOYLE SITES

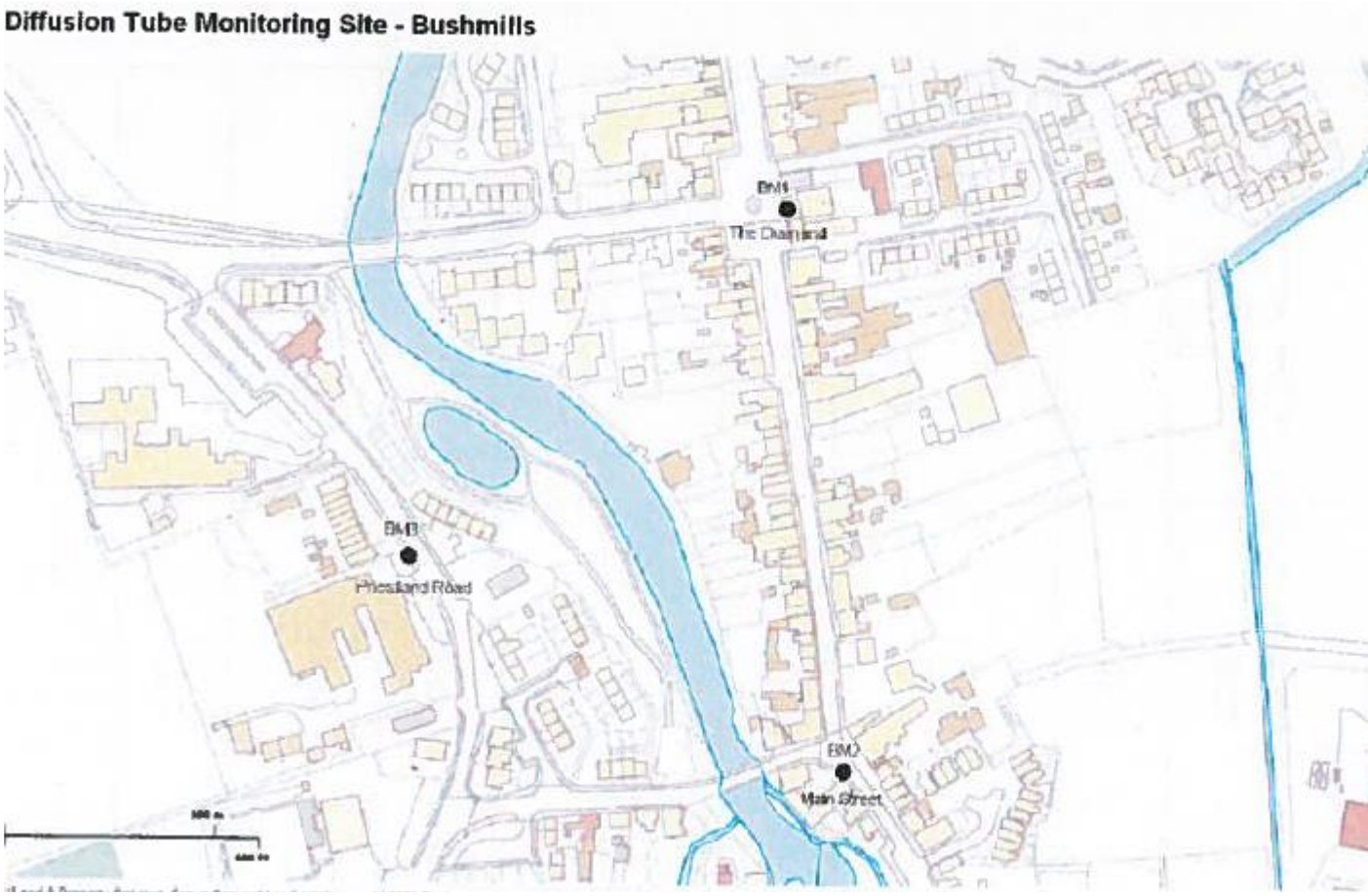

Diffusion Tube Monitoring Site - Armoy
AM1
Main Street
Land & Property Services, Crown Copyright and database right 2020 Printed on Wed Mar 3 2010 0 1:04 1 3PM

Diffusion Tube Monitoring Sites - Ballycastle

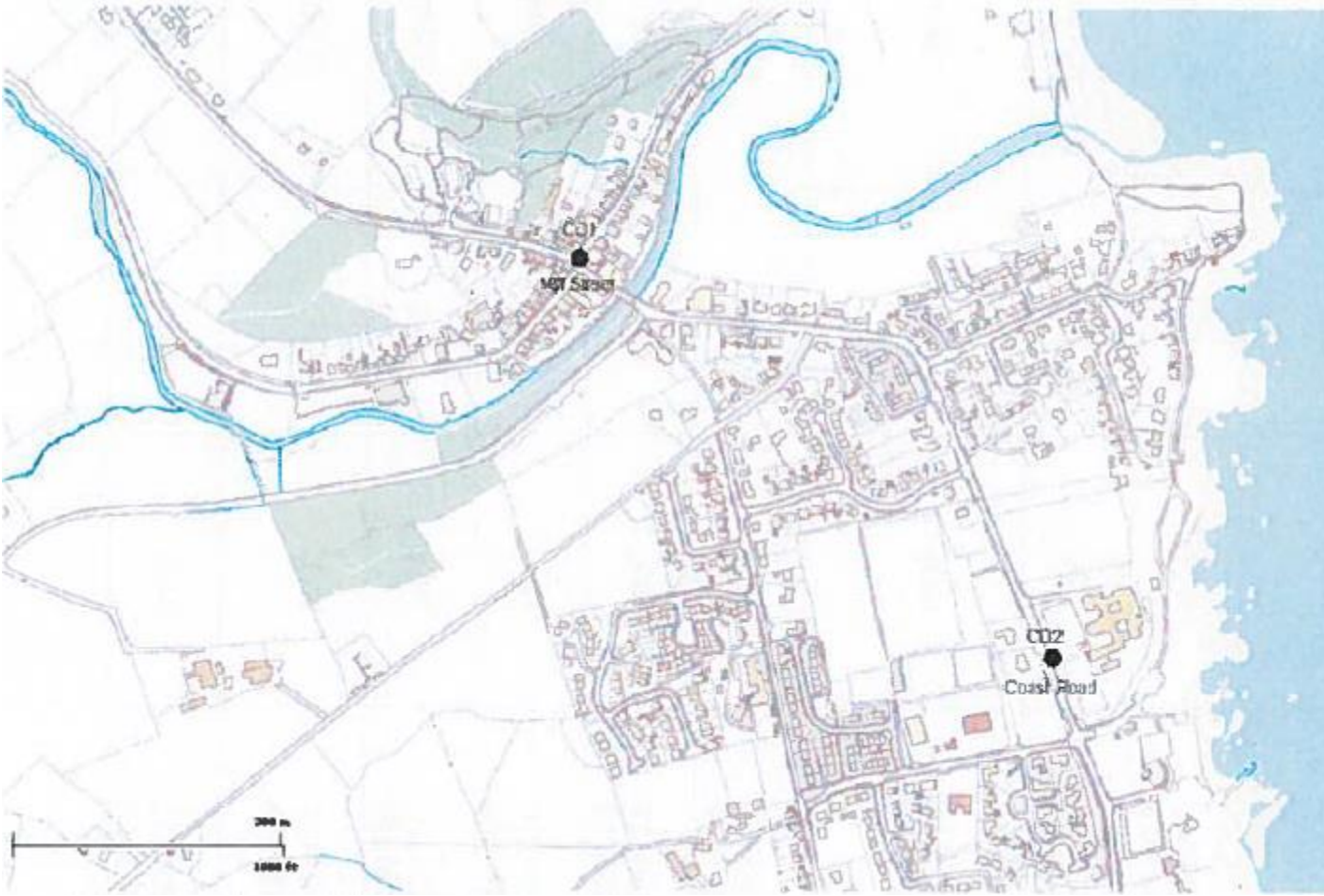


(c) Land & Property Services, Crown copyright and database right 2009 Printed on Wed Mar 3 2010 11:58:02 AM

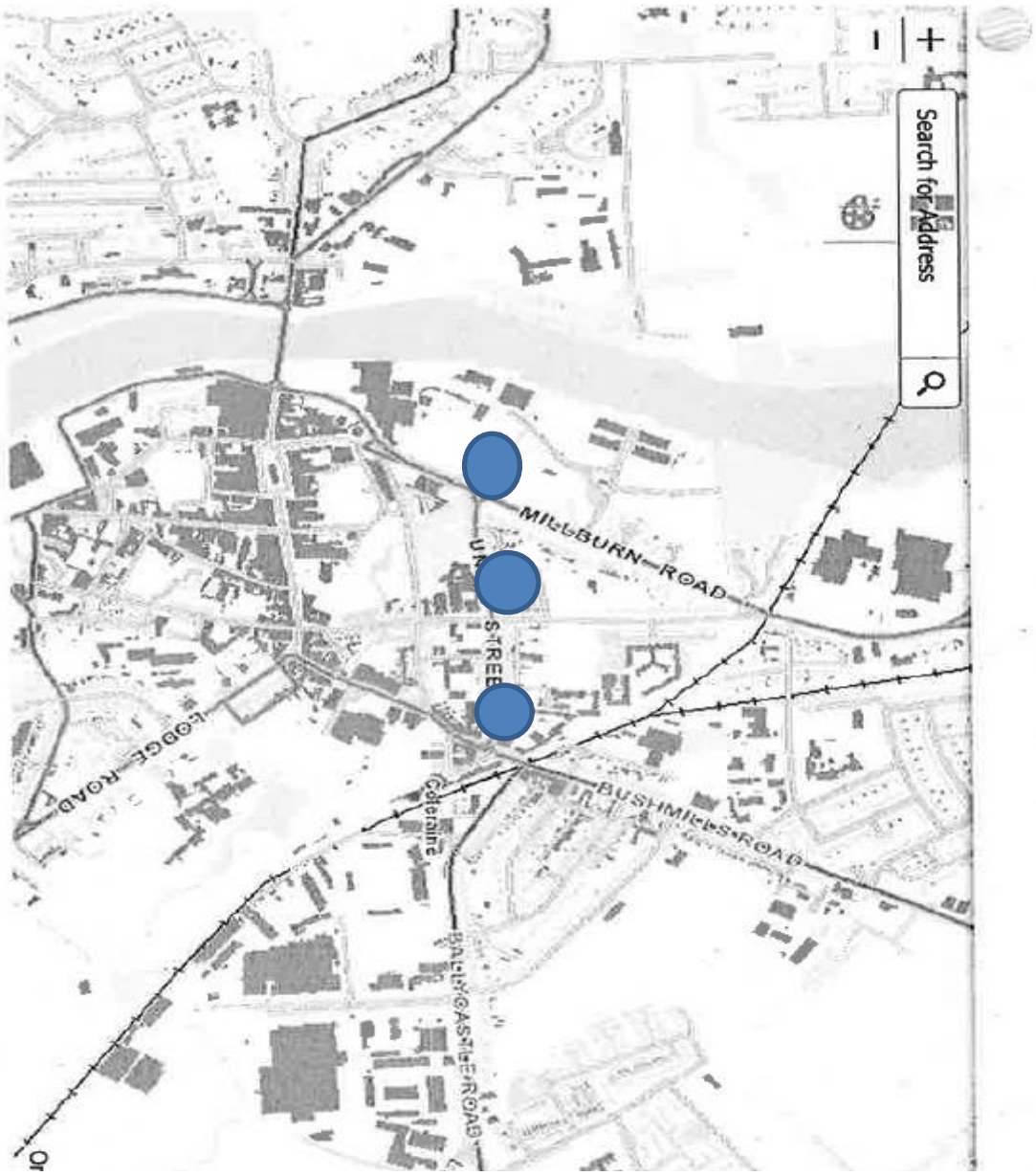
Diffusion Tube Monitoring Site - Bushmills



Diffusion Tube Monitoring Sites - Cushendall



COLERAINE SITES



LIMAVADY SITES – DUNGIVEN

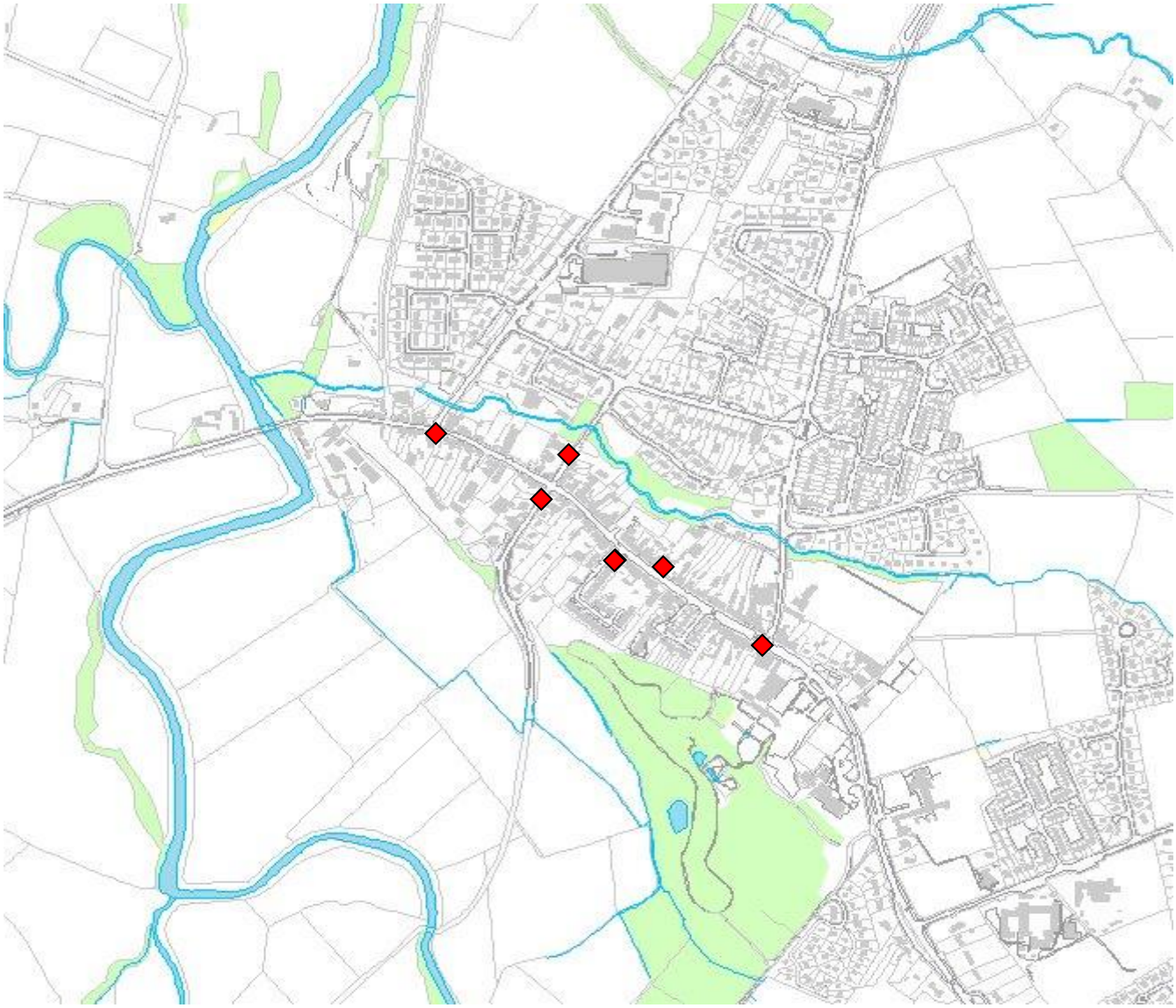


Table 2.2 – Details of Non- Automatic Monitoring Sites

Site ID	Site Name	Site Type	X OS Grid Reference	Y OS Grid Reference	Site Height (m)	Pollutants Monitored	In AQMA?	Is Monitoring Co-located with a Continuous Analyser (Y/N)	Relevant Exposure? (Y/N with distance (m) from monitoring site to relevant exposure)	Distance to Kerb of Nearest Road (m) (N/A if not applicable)	Does this Location Represent Worst-Case Exposure?
BM	1N	Kerbside	19 Linenhall St		2.5	NO_2	N	N	N	1m	Y
	2N	Kerbside	8 Ballybogey Road		2.5	NO_2	N	N	Y (10m)	1m	Y
	3N	Urban Background	Opp 16 Armour Ave		2.5	NO_2	N	N	Y (20m)	N/A	Y
	4N	Urban Background	Semicock Avenue		2.5	NO_2	N	N	Y (5m)	N/A	Y
	6N	Kerbside	31 Charles Street		2.5	NO_2	N	N	Y (10m)	1m	Y
	7N	Kerbside	Opp 51 Queen Street		2.5	NO_2	N	N	Y (15m)	1m	Y
	8N	Kerbside	Meetinghouse Street		2.5	NO_2	N	N	Y (15m)	1m	Y
	9N	Kerbside	Castle Street		2.5	NO_2	N	N	Y (10m)	1m	Y
M	1	Roadside	E311978	N441022	2.5	NO2	No	No	Y (12M)	1.6	Y
	2	Roadside	E311505	N4408028	2.5	NO2	No	No	Y (10m)	5.25	Y
	3	Roadside	E311290	N440659	2.5	NO2	No	No	Y(10m)	1.6	Y

Site ID	Site Name	Site Type	X OS Grid Reference	Y OS Grid Reference	Site Height (m)	Pollutants Monitored	In AQMA?	Is Monitoring Co-located with a Continuous Analyser (Y/N)	Relevant Exposure? (Y/N with distance (m) from monitoring site to relevant exposure)	Distance to Kerb of Nearest Road (m) (N/A if not applicable)	Does this Location Represent Worst-Case Exposure?
	4	Roadside	E310912	N440761	2.5	NO2	No	No	Y (6m)	2.5	Y
	5	Roadside	E323685	N427677	2.5	NO2	No	No	Y(15m)	1.4	Y
	6	Roadside	E324177	N427237	2.5	NO2	No	No	Y (12m)	4.1	Y
	7	Roadside	E294076	N440884	2.5	NO2	No	No	Y (20m)	1.3	Y
	8	Roadside	E294103	N440626	2.5	NO2	No	No	Y (8m)	1.2	Y
	9	Roadside	E293777	N440755	2.5	NO2	No	No	Y (14m)	2.8	Y
	10	Roadside	E306815	N432803	2.5	NO2	No	No	Y (30m)	2.0	Y
C	1	Urban centre	284876	432701	2.5	NO2	No	No	Y (3m)	1m	Y
	2	Urban centre	285075	432722	2.5	NO2	No	No	Y(3m)	1m	Y
	3	Urban centre	285247	432709	2.5	NO2	No	No	Y (4m)	1m	Y
L	Dungiven	Urban background	268957	409535	2.5	NO_2	Y	N	Y (1m)	1m	Y
	Dungiven	roadside	268887	409482	2.5	NO_2	Y	N	Y (1m)	1m	Y
	Dungiven	roadside	268852	409502	2.5	NO_2	Y	N	Y (1m)	1m	Y

Enter Local Authority Name Here

Site ID	Site Name	Site Type	X OS Grid Reference	Y OS Grid Reference	Site Height (m)	Pollutants Monitored	In AQMA?	Is Monitoring Co-located with a Continuous Analyser (Y/N)	Relevant Exposure? (Y/N with distance (m) from monitoring site to relevant exposure)	Distance to Kerb of Nearest Road (m) (N/A if not applicable)	Does this Location Represent Worst-Case Exposure?
	Dungiven	roadside	268742	409543	2.5	NO_2	Y	N	Y (1m)	1m	Y
	Dungiven	roadside	268981	409387	2.5	NO_2	Y	N	Y (1m)	2m	Y
	Dungiven	roadside	269190	409219	2.5	NO_2	Y	N	Y (1m)	2m	Y
	Dungiven	roadside	269051	409338	2.5	NO_2	Y	N	Y (1m)	2m	Y

2.2 Comparison of Monitoring Results with Air Quality Objectives

2.2.1 Nitrogen Dioxide (NO_2)

With regard to passive monitoring NO2 levels remain high (above the annual mean concentration of 40ugm^{-3}) within the AQMA in Dungiven at three monitoring locations. The monitoring results have been adjusted to reflect bias (Gradko 20% TEA in water = 0.92)

Automatic Monitoring Data

Insufficient data capture for 2016.

Table 2.3 – Results of Automatic Monitoring for NO_2: Comparison with Annual Mean Objective

Site ID	Site Type	Within AQMA?	Valid Data Capture for Monitoring Period % [a]	Valid Data Capture 2016 % [b]	Annual Mean Concentration (µg/m^3)				
					2012* [c]	2013* [c]	2014* [c]	2015* [c]	2016 [c]
CM1	Roadside	Y	95	95	27.1	**42.5**	26.2	**48.1**	26.3

In bold, exceedance of the NO_2 annual mean AQS objective of 40µg/m^3

[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 in Boxes 7.9 and 7.10 of LAQM.TG16, if valid data capture is less than 75%

* Annual mean concentrations for previous years are optional

Figure 2.3 – Trends in Annual Mean NO_2 Concentrations Measured at Automatic Monitoring Sites

Table 2.4 – Results of Automatic Monitoring for NO_2: Comparison with 1-hour Mean Objective

Site ID	Site Type	Within AQMA?	Valid Data Capture for Monitoring Period % [a]	Valid Data Capture 2016 % [b]	Number of Hourly Means > 200µg/m^3				
					2012* [c]	2013* [c]	2014* [c]	2015* [c]	2016 [c]
CM1	Roadside	Y	95	95	2	5	**19**	17	3
CM2	Roadside	Y	100	80	3	0	3	11	15 **(210.2)**

In bold, exceedance of the NO_2 hourly mean AQS objective (200µg/m^3 – 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 data capture for full calendar year is less than 85%, include the 99.8th percentile of hourly means in brackets

* Number of exceedances for previous years is optional

Diffusion Tube Monitoring Data

Table 2.5 – Results of NO_2 Diffusion Tubes 2016

Site ID	Location	Site Type	Within AQMA?	Triplicate or Co-located Tube	Full Calendar Year Data Capture 2016 (Number of Months or %) [a]	2016 Annual Mean Concentration (µg/m^3) - Bias Adjustment factor = 0.92 [b]
Coleraine 1	Bottom of Union St Coleraine	Urban centre	N	Triplicate	12	28.5
Coleraine 18	Corner of Brook St Coleraine	Urban centre	N	Triplicate	12	28.4
Coleraine 2	Top of Union St Coleraine	Urban centre	N	Triplicate	12	21.1
Dungiven 1	Main St Dungiven	Urban background	Y	Triplicate	11	16.5
Dungiven 2	Main St Dungiven	roadside	Y	Triplicate	12	42.0
Dungiven 3	Main St Dungiven	roadside	Y	Triplicate	12	41.4
Dungiven 4	Main St Dungiven	roadside	Y	Triplicate	12	32.8
Dungiven 5	Main St Dungiven	roadside	Y	Triplicate	12	25.0
Dungiven 6	Main St Dungiven	roadside	Y	Triplicate	12	30.3
Dungiven 7	Main St Dungiven	roadside	Y	Triplicate	12	40.8
Ballycastle 1	Quay Road Ballycastle	Roadside	N	N	12	
Ballycastle 2	Ann St Ballycastle	Roadside	N	N	12	27.0

Site ID	Location	Site Type	Within AQMA?	Triplicate or Co-located Tube	Full Calendar Year Data Capture 2016 (Number of Months or %) [a]	2016 Annual Mean Concentration (µg/m^3) - Bias Adjustment factor = 0.92 [b]
Ballycastle 3	Castle St Ballycastle	Roadside	N	N	12	20.8
Ballycastle 4	Market St/Leyland Rd junction Ballycastle	Roadside	N	N	12	
Cushendall 1	Mill St Cushendall	Roadside	N	N	12	
Cushendall 2	Coast Rd Cushendall	Roadside	N	N	12	
Bushmills 1	The Diamond Bushmills	Roadside	N	N	12	
Bushmills 2	Main St Bushmills	Roadside	N	N	12	24.1
Bushmills 3	Priestland Rd Bushmills	Roadside	N	N	12	
Armoy 1	Main St Armoy	Roadside	N	N	12	
Ballymoney 1		kerbside	N	N	12	22.1
Ballymoney 2		kerbside	N	N	12	18.2
Ballymoney 3		Urban background	N	N	12	7.5
Ballymoney 4		Urban background	N	N	12	7.4

Site ID	Location	Site Type	Within AQMA?	Triplicate or Co-located Tube	Full Calendar Year Data Capture 2016 (Number of Months or %) [a]	2016 Annual Mean Concentration (µg/m^3) - Bias Adjustment factor = 0.92 [b]
Ballymoney 6		kerbside	N	N	12	16.4
Ballymoney 7		kerbside	N	N	12	22.0
Ballymoney 8		kerbside	N	N	12	26.5
Ballymoney 9		kerbside	N	N	12	16.1

In bold, exceedance of the NO_2 annual mean AQS objective of 40µg/m^3

Underlined, annual mean > 60µg/m^3, indicating a potential exceedance of the NO_2 hourly mean AQS objective

[a] Means should be "annualised" as in Boxes 7.9 and 7.10 of 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, NO_2 concentration at the nearest relevant exposure should be estimated based on the "NO_2 fall-off with distance" calculator (http://laqm.defra.gov.uk/tools-monitoring-data/no2-falloff.html), and results should be discussed in a specific section. The procedure is also explained in paragraphs 7.77 to 7.79 of LAQM.TG16.

Table 2.6 – Results of NO_2 Diffusion Tubes (2012 to 2016)

Site ID	Site Type	Within AQMA?	Annual Mean Concentration (µg/m^3) - Adjusted for Bias [a]				
			2012 (Bias Adjustment Factor = 0.97)	2013 (Bias Adjustment Factor = 0.95)	2014 (Bias Adjustment Factor = 0.91)	2015 (Bias Adjustment Factor = 0.87)	2016 (Bias Adjustment Factor = 0.92)
Coleraine 1	Urban centre	N	31.53	30.36	28.4	26.6	28.5
Coleraine 18	Urban centre	N	33.88	29.39	28.5	25.2	28.4
Coleraine 2	Urban centre	N	24.50	22.86	22.04	20.6	21.1
Dungiven	Urban background	Y	21.43	18.18	20.30	18.1	16.5
Dungiven	roadside	Y	**47.23**	**40.50**	**41.25**	37.3	**42.0**
Dungiven	roadside	Y	**50.39**	**47.05**	**44.31**	38.9	**41.4**
Dungiven	roadside	Y	**48.67**	**42.41**	34.16	32.7	32.8
Dungiven	roadside	Y	**45.20**	37.44	27.91	25.1	25.0
Dungiven	roadside	Y	32.66	31.02	29.44	25.2	30.3
Dungiven	roadside	Y	37.51	**41.88**	**43.60**	39.9	**40.8**
Ballycastle 1	Roadside	N	16.29	16.2	15.61	12.2	
Ballycastle 2	Roadside	N	26.73	26.5	24.61	19.7	27.0
Ballycastle 3	Roadside	N	22.06	21.4	22.04	14.4	20.8
Ballycastle 4	Roadside	N	16.92	16.6	14.91	14.2	
Cushendall 1	Roadside	N	15.33	17.1	17.10	13.8	
Cushendall 2	Roadside	N	8.59	9.9	8.97	8.9	

Site ID	Site Type	Within AQMA?	Annual Mean Concentration (µg/m^3) - Adjusted for Bias [a]				
			2012 (Bias Adjustment Factor = 0.97)	2013 (Bias Adjustment Factor = 0.95)	2014 (Bias Adjustment Factor = 0.91)	2015 (Bias Adjustment Factor = 0.87)	2016 (Bias Adjustment Factor = 0.92)
Bushmills 1	Roadside	N	14.89	14.7	13.65	11.2	
Bushmills 2	Roadside	N	23.74	24.3	24.25	17.8	24.1
Bushmills 3	Roadside	N	9.37	12.0	10.05	7.3	
Armoy 1	Roadside	N	14.56	13.9	13.12	12.2	
Ballymoney 1	kerbside	N	25.10	25	25.2		22.1
Ballymoney 2	kerbside	N	18.43	17	16.1		18.2
Ballymoney 3	Urban background	N	9.54	11	8.5		7.5
Ballymoney 4	Urban background	N	10.59	10	11.0		7.4
Ballymoney 6	kerbside	N	25.34	27	20.2		16.4
Ballymoney 7	kerbside	N	23.47	25	22.3		22.0
Ballymoney 8	kerbside	N	31.40	28	30.2		26.5
Ballymoney 9	kerbside	N	17.79	29	15.9		16.1

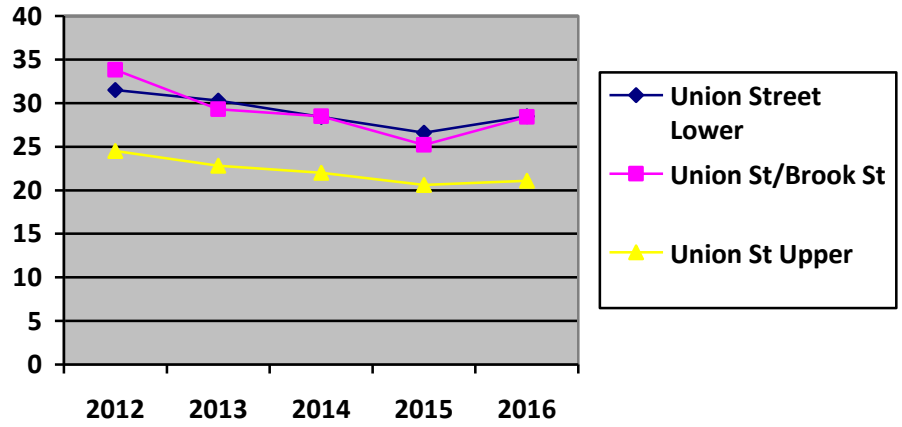
In bold, exceedance of the NO_2 annual mean AQS objective of 40µg/m^3

Underlined, annual mean > 60µg/m^3, indicating a potential exceedance of the NO_2 hourly mean AQS objective

[a] Means should be “annualised” as in Boxes 7.9 and 7.10 of LAQM.TG16, if full calendar year data capture is less than 75%

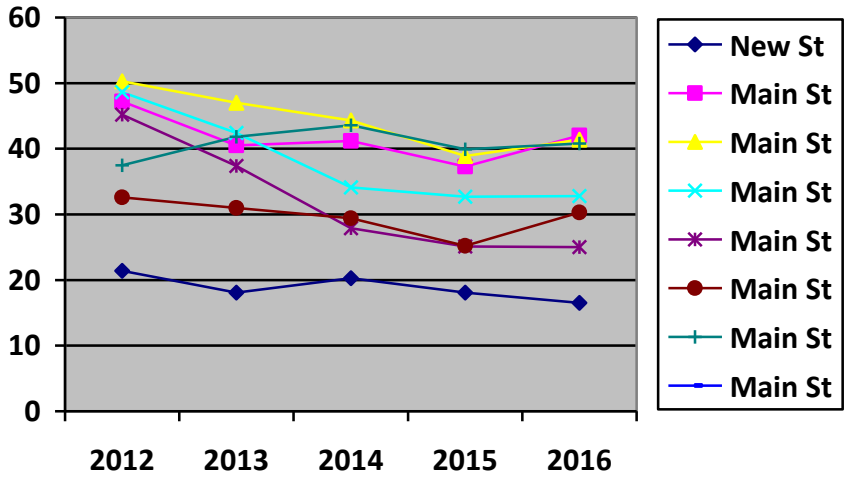
Figure 2.4 – Trends in Annual Mean Nitrogen Dioxide Concentrations Measured at Diffusion Tube Monitoring Sites

Coleraine



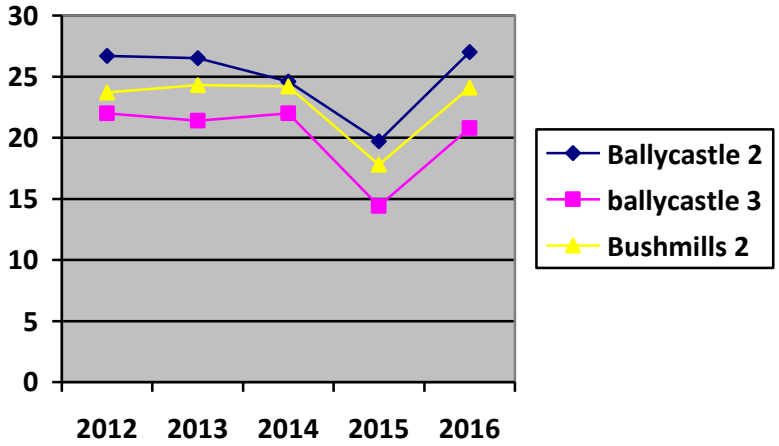
The data for Union Street Coleraine shows a general decline in NO2 levels up until 2015 with a slight increase for 2016. Levels however at all three sites remain below the annual mean concentration of 40ugm-3

Dungiven AQMA Limavady



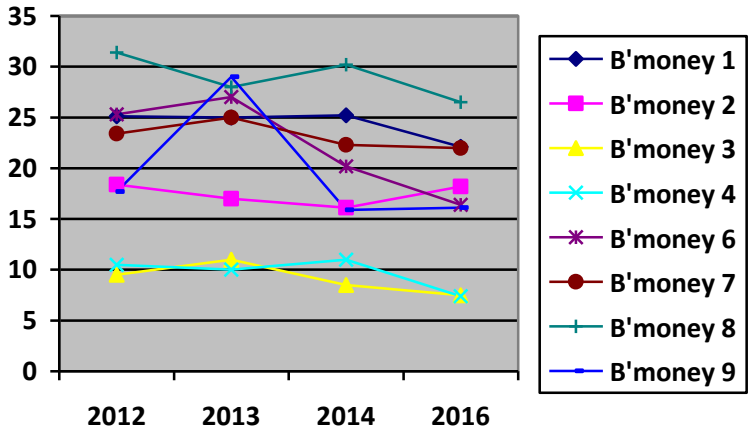
NO2 levels for 2016 at three sites within the AQMA remain above the national air quality objective annual mean limit of 40ugm-3

Ballycastle



NO2 levels within the three remaining monitoring sites have all shown increases in NO2 levels in 2016. Monitoring locations within this area have been scaled back as previous monitoring demonstrated that NO2 levels were particularly low. The three remaining sites are all below the 40ugm-3 annual mean concentration.

Ballymoney



NO2 levels at all monitoring sites in Ballymoney remain below the annual mean concentration of 40ugm-3

2.2.2 Particulate Matter (PM_{10})

NOT APPLICABLE

Table 2.7 – Results of Automatic Monitoring for PM_{10}: Comparison with Annual Mean Objective

Site ID	Site Type	Within AQMA?	Valid Data Capture for Monitoring Period % [a]	Valid Data Capture 2016 % [b]	Confirm Gravimetric Equivalent (Y or N/A)	Annual Mean Concentration (µg/m^3)				
						2012* [c]	2013* [c]	2014* [c]	2015* [c]	2016 [c]
CM1	Roadside	Y	95	95	Y	27.1	25.1	37.1	**41.4**	39.6

In bold, exceedance of the PM_{10} annual mean AQS objective of 40µg/m^3

[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 in Boxes 7.9 and 7.10 of LAQM.TG16, if valid data capture is less than 75%

* Annual mean concentrations for previous years are optional

Figure 2.5 – Trends in Annual Mean PM_{10} Concentrations

Table 2.8 – Results of Automatic Monitoring for PM_{10}: Comparison with 24-hour Mean Objective

Site ID	Site Type	Within AQMA?	Valid Data Capture for Monitoring Period % [a]	Valid Data Capture 2016 % [b]	Confirm Gravimetric Equivalent (Y or N/A)	Number of Daily Means > 50µg/m^3				
						2012* [c]	2013* [c]	2014* [c]	2015* [c]	2016 [c]
CM1	Roadside	Y	95	92	Y	12	20	25	**36**	21

In bold, exceedance of the PM_{10} daily mean AQS objective (50µg/m^3 – 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 for full calendar year is less than 85%, include the 90.4th percentile of 24-hour means in brackets

* Number of exceedances for previous years is optional

2.2.3 Sulphur Dioxide (SO_2)

NOT APPLICABLE

Table 2.9 – Results of Automatic Monitoring for SO_2: Comparison with Objectives

Site ID	Site Type	Within AQMA?	Valid Data Capture for Monitoring Period % [a]	Valid Data Capture 2016 % [b]	Number of: [c]		
					15-minute Means > 266µg/m^3	1-hour Means > 350µg/m^3	24-hour Means > 125µg/m^3
CM1	Roadside	N	92	80	33 **(275.3)**	**26 (365.1)**	0 (99.0)
CM2	Roadside	Y	95	95	28	12	**4**

In bold, exceedance of the relevant AQS objective (15-min mean = 35 allowed/year; 1-hour mean = 24 allowed/year; 24-hour mean = 3 allowed/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 for full calendar year is less than 85%, include the relevant percentile in bracket (in µg/m^3): 15-min mean = 99.9th ; 1-hour mean = 99.7th ; 24-hour mean = 99.2th percentile

Figure 2.6 – Trends in SO_2 Concentrations

2.2.4 Benzene

NOT APPLICABLE

2.2.5 Other Pollutants Monitored

NOT APPLICABLE

2.2.6 Summary of Compliance with AQS Objectives

Causeway Coast and Glens Borough Council has examined the results from monitoring in the borough

Concentrations within the AQMA still exceed the objective for nitrogen dioxide at Main Street Dungiven and the AQMA should remain.

Concentrations outside of the AQMA are all below the objectives at relevant locations, therefore there is no need to proceed to a Detailed Assessment.

3 New Local Developments

3.1 Road Traffic Sources

There have been no new road schemes within the Borough that would negatively impact upon air quality.

Start writing your supporting text on new/newly identified road traffic sources here.

3.2 Other Transport Sources

There have been no new/newly developed airports, diesel or steam train stations, diesel locomotives or shipping port within the Borough

3.3 Industrial Sources

This department is not aware of any new of proposed industrial sources or of any substantive changes to existing installations which would create relevant exposure

3.4 Commercial and Domestic Sources

Fuel use surveys were previously carried out within the borough and aside from the issue with PM10 in Glebeside Ballymoney no concerns were raised. The AQMA in Glebeside has been revoked as the domestic properties were converted over to gas.

3.5 New Developments with Fugitive or Uncontrolled Sources

This department is not aware of any new developments with fugitive or uncontrolled emissions in the Borough

Causeway Coast and Glens Borough Council confirms that there are no new or newly identified local developments which may have an impact on air quality within the Local Authority area.

Causeway Coast and Glens Borough Council confirms that all the following have been considered:

- **Road traffic sources**
- **Other transport sources**
- **Industrial sources**
- **Commercial and domestic sources**
- **New developments with fugitive or uncontrolled sources.**

4 Local / Regional Air Quality Strategy

This Council has declared an AQMA with regard to nitrogen dioxide levels from traffic emissions in Main Street Dungiven. All attempts are made to ensure that pollutant levels in other areas within the Borough are maintained at either current levels or reduced as far as possible. Monitoring will continue to assess levels and consideration will be given to air quality when processing planning applications relating to domestic, commercial and industrial processes.

5 Planning Applications

Council is not aware of any approved/pending planning applications which would adversely impact upon air quality within the Borough in general.

6 Air Quality Planning Policies

Planning policy within Northern Ireland was the responsibility of DOE Planning Service. Planning Service has now been subsumed by Council. Within our role as internal consultees to Planning this department highlights any issues which would adversely impact on air quality within the Borough and would strive to control through planning conditions such impacts to ensure air quality is not compromised by development.

The Council's Planning Department has produced its Regional Development Strategy 2025 – Shaping the Future. It is a strategic and long term perspective on future development within Northern Ireland. The content of the document is not just limited to land use planning but recognises that policies for physical development have an important bearing on other matters such as developing a strong spatially based economy, a healthy living environment and an inclusive society which tackles inequalities relating to health, education and living standards. The amendments to the RDS 2025 is the 5-year review of the existing RDS. The RDS strategy for the Borough is the improvement and the enhancement of the natural environment, the economic and social opportunities and the encouragement of tourism to the area through improvements in the built environment and transport infrastructure and linkage to the natural gas network. The rural community has greater relevance to maintain the rural way of life whilst providing transport and economic opportunities in a sustainable way. Its overall aim is:

- "to develop an attractive and prosperous rural area, based on a balanced and integrated approach to the development of town, village and countryside, in order to sustain a strong and vibrant rural community, contributing to the overall well-being of the Region as a whole."

Specifically, changes in regard to air quality are covered in policy ENV 6.1 - improve air quality by:

- ensuring a level of ambient air quality in public places, which poses no significant risk to health or quality of life, through implementation of the National Air Quality Strategy;
- identifying and addressing air pollution problems through the implementation of the Local Air Quality Management systems (LAQM) introduced via the Environment (NI) Order 2002;
- ensuring that industrial emissions are minimised and effectively controlled, promoting more sustainable energy sources and a diversification of fuel supplies; and
  changing travel patterns to reduce the growth of traffic with potential benefits for air quality

The Area Plan being produced will consider air quality impacts of planning applications and the suitability of development in areas where AQMA's have been declared or where the proposed activity may cause an impact on current pollutant levels.

7 Local Transport Plans and Strategies

Causeway Coast & Glens Borough Councils action plan with regard to Dungiven's AQMA stated that the only long term solution to the NO2 issue was the construction of a bypass. This bypass was proposed as part of Transport NI's Regional Development Strategy for Northern Ireland 2025. This document was revised in 2008 and was published as the RDS 2035.

The Regional Transportation Strategy (RTS) supports the RDS and makes a significant contribution towards achieving the longer term visions of the RDS. The Londonderry to Dungiven road scheme is seen as one of the key transport corridor improvements within the RTS, the Regional Strategic Transport Network Transport Plan (RSTN-TP) and Sub-Regional Transport Plan (SRTP).

Dungiven Bypass

The Regional Strategic Transport Network Plan 2015 included proposals for a single carriageway bypass of Dungiven.
As highlighted within the action plan Transport NI would in order to progress the bypass have to undertake a series of key steps to see the project through to fruition. In September 2012 a public inquiry was held.

The document entitled "A6 Londonderry to Dungiven – About the scheme" sets out Transport NI's proposed dualling scheme between Londonderry and Dungiven. It does however point out that "the Northern Ireland Executive budget 2011-2015 sets out the spending plans for the four year period from April 2011- March 2015. Given the two-fifths reduction in the Executives overall capital funding the funds currently allocated to the Department for Regional Development would not allow construction of the Londonderry to Dungiven dual carriageway to commence before 2014-2015 at the earliest."

More recently the budget statement of 17 December 2015 set out the Executive's plans to invest £258m in improving the A6 route between Londonderry and Belfast over the 5 year period between 2016/17 and 2020/21. This funding will facilitate the construction of elements of the A6 Londonderry to Dungiven dualling scheme, including a bypass of Dungiven.

Council input

Council has continued to monitor pollution levels within the AQMA both continuously and passively. All monitoring data from the continuous monitor can be viewed online by interested parties. Discussions have been held at a local level with Transport NI to keep the Department updated and to explore what options are available.

As the relevant authority, it will be Transport NI who will be responsible for improving the road infrastructure around Dungiven. Discussions have looked again at the 'softer' options whereby traffic volumes could be reduced but it is felt that the only viable option is the construction of the bypass.

8 Climate Change Strategies

The Northern Ireland Climate Change Impacts Partnership (NICCIP) was established following the release of the 2007 DOE/Scotland and Northern Ireland Forum for Environmental Research (SNIFFER) report "Preparing for Climate Change in Northern Ireland". The NICCIP membership includes business, voluntary and government sectors to widen knowledge and impacts of climate change in Northern Ireland. It promotes adaptation of business and society to climate change and the development of discussion and ideas for the possibility and relevance of mitigation measures and cross-community strategies. The NICCIP produces a regular newsletter and is in the process of compiling a web-based list of contacts in Northern Ireland. It has also published "Climate Change: what will you do?" which is the findings of a survey of people, politicians and key decision makers. The SNIFFER report on climate change addressed the two key challenges: to reduce emissions and to mitigate emissions. It outlined the likely future impacts on rain, soil moisture, weather patterns and wind speeds and sea level. It also outlined the impacts of climate change on:

- Biodiversity
- Agriculture
- Forestry
- Fisheries
- Water resources
- Coastal and flood risk
- Buildings, construction and planning
- Economic infrastructure – business, insurance, transport, tourism and energy
- Social wellbeing – health, sport and recreation,

The report recommended a multi-party approach to adapt to the climate change through the assessment of adaptive capacity and the delivery of adaptive actions:

- Adaptive Capacity
- Increasing awareness, training and knowledge;
- Contribute to the development and use of climate change, and socio-economic scenarios;
- Review the regulatory and legislative frameworks with respect to climate change and the provision of incentives for adaptation;
- Contingency/ emergency planning;
- Incorporation of climate change into models, and impacts and adaptations into scheme –specific assessments;
- Consideration of cross-sector implications of responses.

<u>Delivery of Adaptive Actions</u>

- Increasing resilience through diversification and buffer zones;
- Avoidance of losses (e.g. altering building materials) and the acceptance of unavoidable losses;
- Embracing changes through maximising opportunities, and exploiting new opportunities e.g. forestry management;
- Planning for risks and opportunities in new infrastructure projects (e.g. transport and construction);

- Changes to management practices to accommodate climate change; Managing heat gain, energy use and water and environmental deficiencies in building design and construction;
- Enhance health surveillance and responses to heat waves.

9 Implementation of Action Plans

It is accepted that the only viable solution to the NO2 issue within Dungiven is the construction of a bypass to take through traffic away from the Main Street area. The provision of such a bypass falls within the remit of Transport NI. The budget statement of 17 December 2015 set out the Executive's plans to invest £258m in improving the A6 route between Londonderry and Belfast over the 5 year period between 2016/17 and 2020/21. This funding will facilitate the construction of elements of the A6 Londonderry to Dungiven dualling scheme, including a bypass of Dungiven.

Table 9.1 – Action Plan Progress

No.	Measure	Focus	Lead Authority	Planning Phase	Implementation Phase	Indicator	Target Annual Emission Reduction in the AQMA	Progress to Date	Progress in Last 12 Months	Estimated Completion Date	Comments Relating to Emission Reductions
1	Measure emission levels within AQMA	Evaluate NO_2 levels	Causeway Coast and Glens Borough Council	Completed	Ongoing			Ongoing	ongoing	ongoing	
2	Vehicle emissions testing	Assess feasibility of testing vehicle emissions when routine servicing carried out/compliance with MOT emissions criteria	Causeway Coast and Glens Borough Council	Completed	Ongoing	Reduce no: of highly polluting vehicles on the road		Ongoing	ongoing	ongoing	Identification of highly polluting vehicles in fleet and reduction in emissions of NO_2
3	Cleaning up Council vehicles	Fitting pollution abatement equipment to older HGV's depending on EURO classification	Causeway Coast and Glens Borough Council	Completed	ongoing	Reduction in pollution emissions from Council vehicles		Abatement not fitted – rolling programme of EURO compliant replacement vehicles	Rolling programme of EURO compliant replacement vehicles	2-5 years	
4	Vehicle upgrading programme to comply with EURO emission standards	Replacement programme for council vehicles	Causeway Coast and Glens Borough Council	completed	ongoing	Reduction in pollution emissions from Council vehicles		Purchase vehicles that comply with prevailing EURO standards – rolling programme	ongoing		

10 Conclusions and Proposed Actions

10.1 Conclusions from New Monitoring Data

NO_2 levels remain high within the AQMA in Dungiven. Levels beyond the AQMA remain below the annual mean concentration of 40ugm^{-3}. Within the AQMA the NO_2 annual mean is above the annual mean threshold of 40ugm^{-3}, at a level where it the AQMA cannot be revoked .No further or detailed assessments are required with regard to NO_2 or other pollutants.

10.2 Conclusions relating to New Local Developments

Council is not aware of any new developments within the Borough which would impact upon ambient air quality or create relevant exposure within the locality

10.3 Other Conclusions

The implementation of the action plan recommendations will depend upon the availability of funding within the Department for Infrastructure. Recent discussions have alluded to the dualling of the A6 being proposed in the not too distant future.
The budget statement of 17 December 2015 set out the Executive's plans to invest £258m in improving the A6 route between Londonderry and Belfast over the 5 year period between 2016/17 and 2020/21. This funding will facilitate the construction of elements of the A6 Londonderry to Dungiven dualling scheme, including a bypass of Dungiven.

10.4 Proposed Actions

No additional assessments are required given that the monitoring data collected to date indicates any additional issues. The existing AQMA should remain in place but it is not our opinion that it is not necessary to extend its boundaries or declare any additional AQMA's.

11 References

- Local Air Quality Management Technical Guidance LAQM.TG(09). February 2009. Published by Defra in partnership with the Scottish Government, Welsh Assembly Government and Department of the Environment Northern Ireland
- Local Air Quality Management Policy Guidance LAQM.PG(09). February 2009. Published by Defra in partnership with the Scottish Government, Welsh Assembly Government and Department of the Environment Northern Ireland
- Diffusion Tubes for Ambient NO_2 Monitoring: Practical Guidance for Laboratories and Users, Report to Defra and the Devolved Administrations , Feb 2008
- EU Emissions Trading Scheme Charging Scheme Northern Ireland. Department for the Environment, November 2009
- Preparing for Climate Change in Northern Ireland. DoE/ Scotland and Northern Ireland Forum for Environmental Research, 2007.
- Shaping Our Future: Adjustments to the Regional Development Strategy (RDS) 2025. Department for Regional Development, June 2008
- Sub-Regional Transport Plan 2015. Department for Regional Development, March 2007.
- The Northern Ireland Climate Change Partnership. http://www.sniffer.org.uk/ourwork/climate-change/niccip.asp

Appendices

Appendix A: QA/QC Data

Diffusion Tube Bias Adjustment Factors

Gradko supply and analysis the diffusion tubes. They are 20% TEA in water. The adjustment factor obtained from the most recent datatbase for 2016 is 0.92

Tube precision for Gradko tubes (20%TEA in water) is ‘good’.

In terms of laboratory performance Gradko achieved 100% in AIR PT AR0 12-16 in 2016

2016 Passive monitoring - AQMA Main Street Dungiven

Location	Jan	Feb	Mar	April	May	June	July	August	Sept	Oct	Nov	Dec	Annual mean concentration	Annual mean- bias adjustment factor applied (0.92)
A New St	21.3	18.4	21.2	17.1	17.3	14.4	14.0	-	16.8	21.6	17.7	18.8	18.0	16.5
B Main St	45.0	42.6	45.5	37.3	38.3	47.3	44.2	44.7	47.5	58.4	49.3	48.2	45.7	42.0
C Main St	49.3	43.1	45.9	40.0	46.7	47.5	36.9	47.3	46.8	49.1	44.8	43.1	45.0	41.4
D Main St	39.8	35.8	39.2	28.4	35.4	37.9	31.0	34.9	35.6	38.2	36.6	35.9	35.7	32.8
E Main St	29.8	28.4	29.2	25.5	26.6	26.7	23.7	24.4	23.1	31.8	27.5	30.5	27.2	25.0
F Main St	31.1	32.9	32.8	32.8	41.0	36.4	26.6	28.7	29.8	37.0	34.2	35.0	33.2	30.3
G Main St	43.2	42.4	44.4	45.8	55.7	51.7	33.1	41.0	38.7	50.1	42.3	44.7	44.4	40.8

A – background

- Denotes missing tubes

2016 Passive monitoring - Ballycastle

Location	Jan	Feb	Mar	April	May	June	July	August	Sept	Oct	Nov	Dec	Annual mean concentration	Annual mean- bias adjustment factor applied (0.92)
BC1 B'castle	17.1	33.2	14.8	20.5	16.9	17.4	-	15.0	16.2					
BC2 B'castle	27.0	27.7	32.6	28.1	27.6	28.8	-	26.1	28.1	31.5	38.4	27.6	29.4	27.0
BC3 B'castle	19.1	18.5	24.6	20.7	22.8	30.4	22.5	22.0	21.9	22.2	24.8	23.5	22.7	20.8
BC4 B'castle	19.3	19.5	18.4	18.6	17.2	14.8	12.7	13.9	16.2					
CD1 Cushendall	19.4	12.1	21.7	19.4	16.6	15.9	17.3	16.8	17.3					
CD2 Cushendall	11.2	15.3	11.0	13.4	10.9	8.0	8.7	7.4	9.5					
BM1 Bushmills	11.2	23.7	12.0	15.7	13.5	14.2	14.9	14.8	14.1					
BM2 Bushmills	23.9	10.0	30.0	21.4	20.8	25.4	25.8	25.7	28.9	29.6	32.7	31.2	26.2	24.1
BM3 Bushmills	10.7	15.2	10.8	11.5	12.1	9.2	8.6	9.7	9.4					
AM1 Armoy	14.9	12.0	13.3	12.9	12.8	13.1	13.2	13.2	14.1					

2016 Passive monitoring - Ballymoney

Location	Jan	Feb	Mar	April	May	June	July	August	Sept	Oct	Nov	Dec	Annual mean concentration	Annual mean- bias adjustment factor applied (0.92)
Linenhall St	23.2	21.4	23.3	27.6	22.5	26.1	-	17.4	22.4	31.6	24.8	25.4	24.1	22.1
Portrush Rd	19.6	20.3	18.3	22.6	23.4	22.7	17.5	18.8	18.6	19.9	18.3	18.7	19.8	18.2
Riverside	7.6	6.9	9.2	8.8	8.2	6.1	6.1	6.4	6.5	11.3	11.4	10.1	8.2	7.5
Semicock Rd	5.6	6.3	6.2	5.3	7.1	7.8	6.5	7.8	8.5	14.4	13.9	8.9	8.1	7.4
Charles St	14.9	16.2	15.9	15.0	16.8	16.5	16.2	-	17.8	26.5	22.1	19.7	17.9	16.4
Queens St	22.6	21.9	23.8	23.5	20.9	22.1	20.2	22.0	24.2	32.1	30.1	25.1	24.0	22.0
M'house St	28.6	27.7	28.0	31.2	29.2	34.3	28.7	24.2	34.0	25.6	27.6	28.2	28.9	26.5
Castle St	17.2	16.8	16.2	15.7	15.5	15.1	13.4	19.1	14.0	29.1	24.5	19.2	17.5	16.1

2016 Passive monitoring - Coleraine

Location	Jan	Feb	Mar	April	May	June	July	August	Sept	Oct	Nov	Dec	Annual mean concentration	Annual mean- bias adjustment factor applied (0.92)
Union Street Lower	28.5	33.8	29.2	28.9	30.9	31.2	30.2	28.7	27.9	28.5	39.1	35.5	31.0	28.5
Union Street/ Brook St	29.2	36.0	32.9	28.5	27.5	28.4	26.8	25.6	27.1	32.1	43.7	33.9	30.9	28.4
Union Street Upper	25.2	27.1	22.4	18.6	19.6	20.7	21.3	20.2	21.8	22.4	30.8	26.3	23.0	21.1