Lisburn & Castlereagh City Council

2020 Air Quality Progress Report

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

August 2020

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Report Reference number	LCCC PR 2020
Date	September 2020

Executive Summary

The Air Quality Strategy has established the framework for air quality management in the UK. Local Authorities have a duty under the Environment Act 1995 and subsequent regulations to review and assess air quality in their areas on a periodic basis so as to identify all areas where the air quality objectives are being or are likely to be exceeded. A phased approach has been adopted for the review and assessment process so that the level of assessment undertaken is commensurate with the risk of an exceedence of an air quality objective.
An updating and screening assessment (USA) is required to be prepared every three years by all local authorities in the UK with two interim progress reports. The last updating and screening assessment of air quality was undertaken in 2018, this is the 2020 progress report for Lisburn and Castlereagh City Council (LCCC) and has been completed using the recommended template. The report is fully compliant with the applicable policy and technical guidance.

This report identified no exceedances with relevant exposure, of the Air Quality Strategy objectives during 2019 for any of the pollutants assessed. NO_2 levels due to vehicle emissions is still the main source of concern within Lisburn & Castlereagh City Council (LCCC) as it has several main commuter belts into Belfast City centre. The real-time analyser with good data capture and accurate results showed a continuing decrease of NO_2 in 2019 and the NO_2 tubes within the AQMA also continued to show a decrease.
Monitoring shall continue within the AQMA and throughout the Council area using NO_2 tubes to ascertain further trends. In 2020 the AQMA shall remain in the Dundonald area, as a continuing trend and consistent reduction of NO_2 has not been yet been determined.

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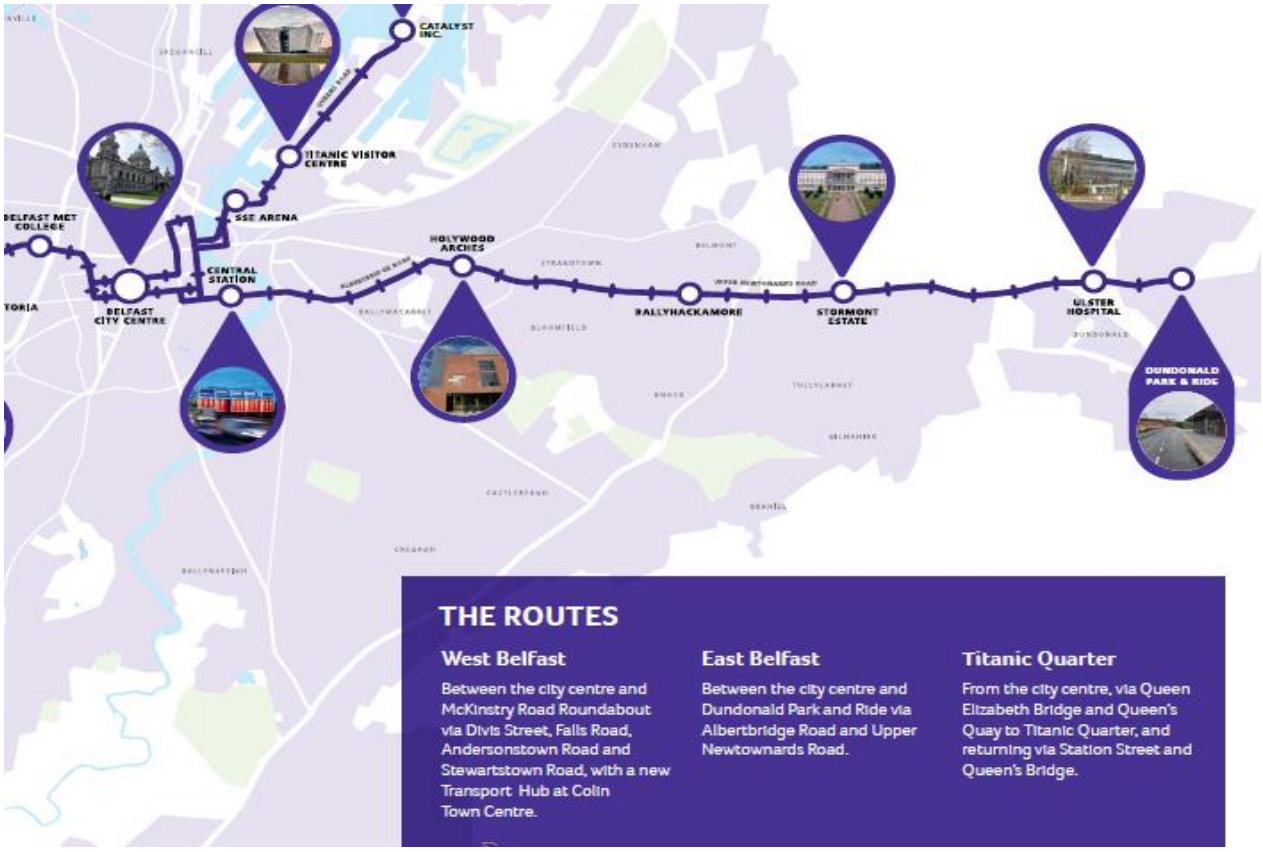
1.1 Description of Local Authority Area

LCCC has a population of 142,640 and an area of approximately 200 square miles. The area is of urban rural character and the predominant wind direction is from the Southwest. It is bounded by a number of other council areas and has the largest boundary with Belfast City Council. This has made LCCC a very popular residential area due to the ease of the commute to Belfast City Centre. There are several main arterial routes into Belfast City centre through LCCC, and the Council was located within Belfast Metropolitan Transport plan. (www.infrastructure-ni.gov.uk/publications/belfast-metropolitan-transport-plan). Dundonald to the East also falls within the New Belfast Rapid transport network which was completed in September 2018 https://www.infrastructure-ni.gov.uk/articles/belfast-rapid-transit-glider-introduction Road transport remains one of the main concerns, however solid fuel use as a secondary fuel is still quite common in the Lisburn area.

Figure 1.1 Map showing position of LCCC within Northern Ireland

Figure 1.2 Map of new Rapid transport route (glider bus) from Dundonald



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 exceedences 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 exceedence 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 exceedences 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

Local authorities in Northern Ireland amalgamated on 1st April 2015 creating 11 new councils. Lisburn & Castlereagh City Council (LCCC) is one of the new 11 councils and the following reports have since been submitted.

https://www.airqualityni.co.uk/laqm/district-council-reports

2015 - Update and Screening Assessment

2016 - Progress report

2017 - Progress report

2018 - Update and Screening Assessment

2019 - Progress report

Figure 1.3 – Map of AQMA Location within LCCC

AQMA No's 2,6,10,1,5,7 Normandy Court Dundonald BT16 2LA

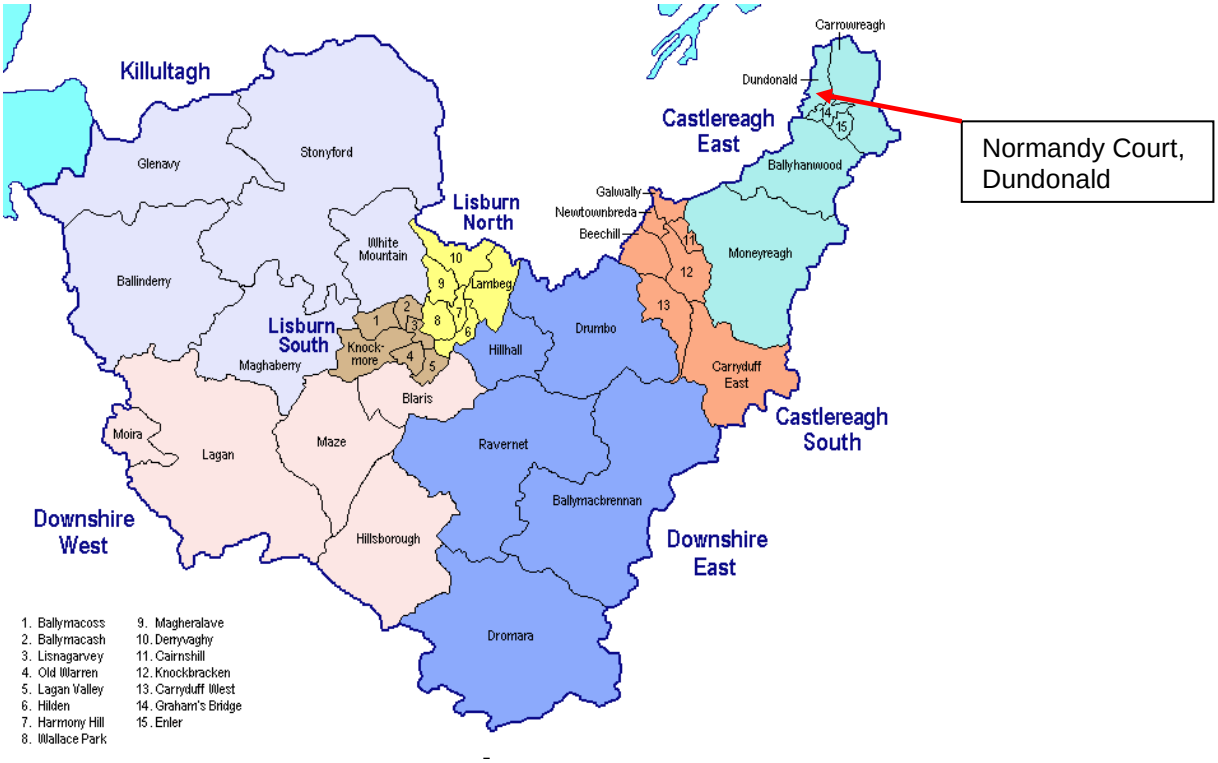
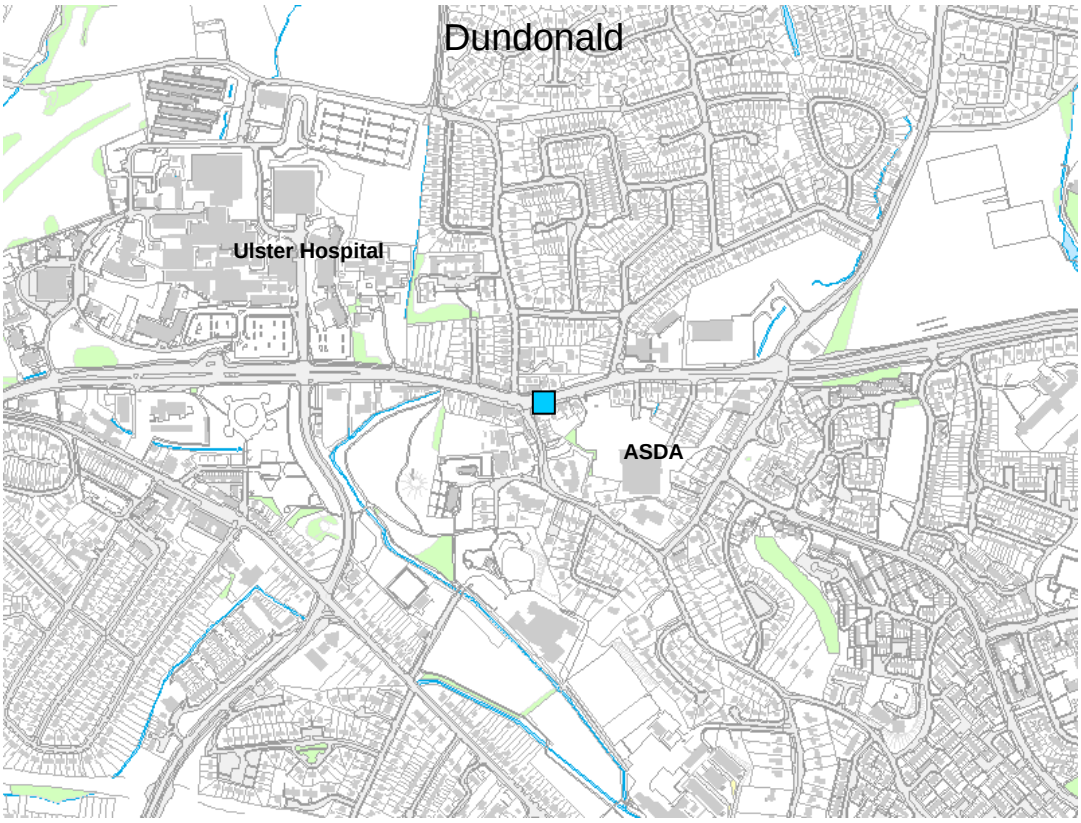


Figure 1.4 Map showing position of AQMA in Dundonald Village



Normandy Court A20 Upper Newtownards Road, Dundonald

Figure 1.5 Ariel photograph showing position of AQMA in Dundonald Village

Figure 1.6 Photograph showing position of Normandy Court within AQMA

2 New Monitoring Data

2.1 Summary of Monitoring Undertaken

2.1.1 Automatic Monitoring Sites

Lisburn & Castlereagh City Council has two automatic monitoring sites.

Kilmakee Activity Centre Seymour Hill

Measuring SO_2 and PM_{10}, this site also houses a Defra network PAH and black carbon monitor and therefore meets the requirements for the AURN specifications. Data has been available from this site since Nov 2012. This site is now well established and the 2015 - 2019 data is included in this report.

Dundonald

Measuring NOx using a chemiluminescence analyser, this site is within 30m of an AQMA. A co-location study for the NO_2 diffusion tubes is also carried out at this site. Results from this study were submitted to the national data base for 2019 to be included in the March data.

Manual calibrations are carried out every two weeks by the Local Air Quality officer. AQDM (Air Quality Data Management) are employed to ratify and validate the data. A specialist engineer is employed to service and maintain the site as required. Results and correction factors are detailed in Appendix A.

Map(s) of Automatic Monitoring Sites

Figure 2.1 - Position of Automatic monitoring sites within LCCC

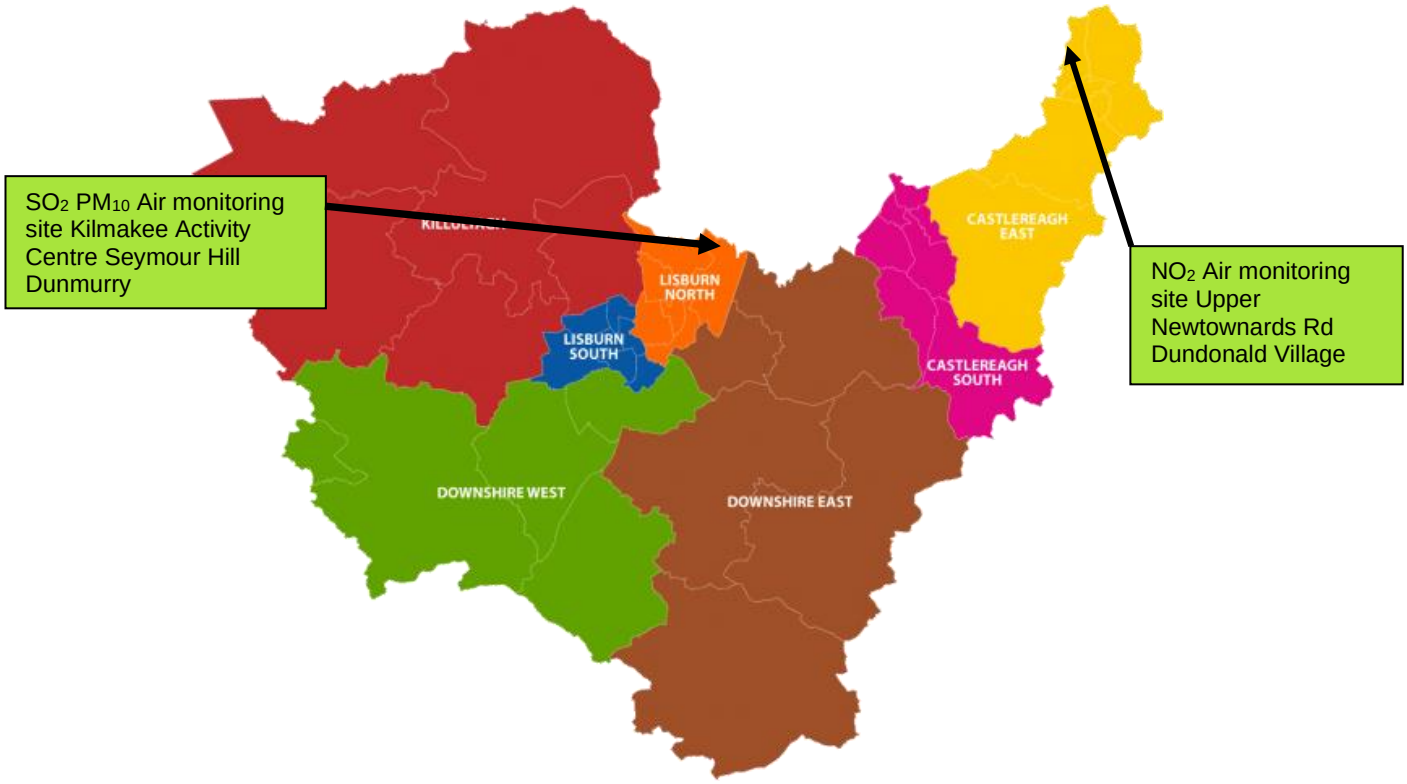


Figure 2.2 Position of Air monitoring site in Seymour Hill

▲ **Kilmakee Activity Centre Seymour Hill**

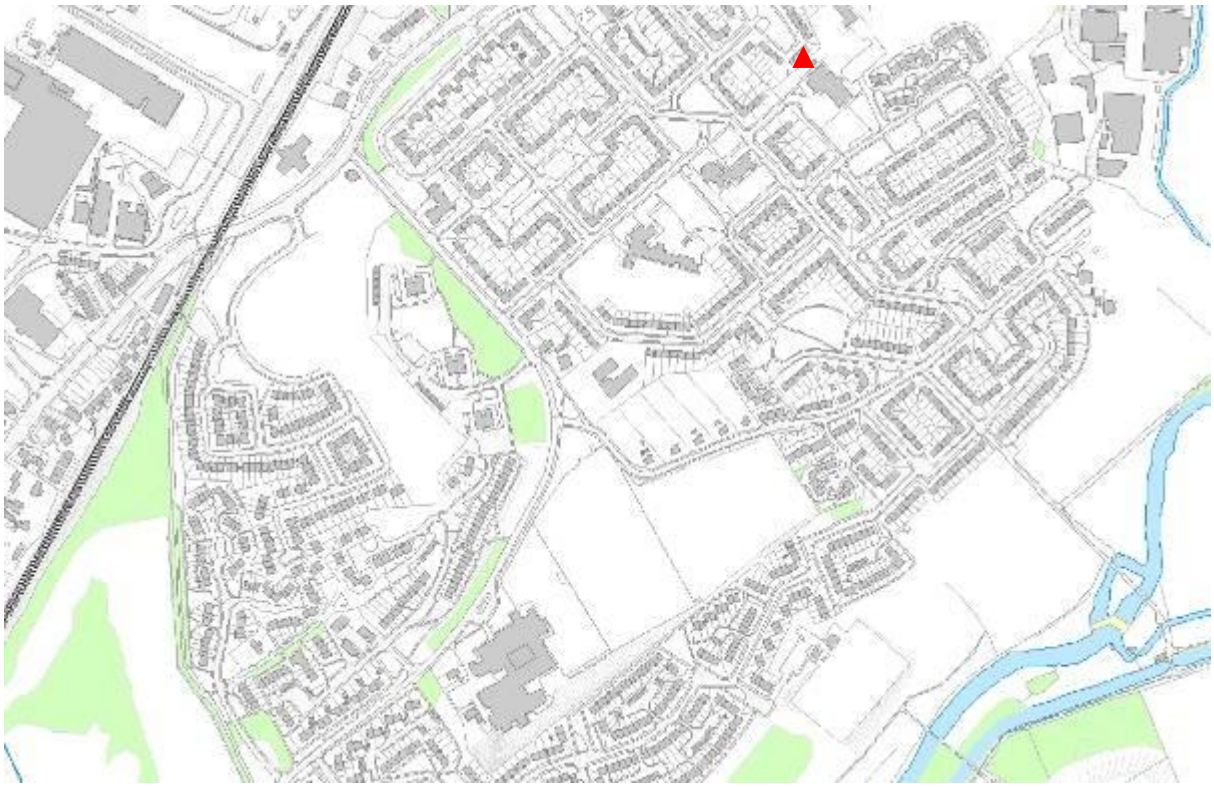


Figure 2.3 Position of Automatic Monitoring Site at Kilmakee Activity Centre

■ Air monitoring station

Figure 2.4 Picture of Automatic Monitoring Stations at Kilmakee Activity Centre

Figure 2.5 Position of automatic monitoring site in Dundonald Village

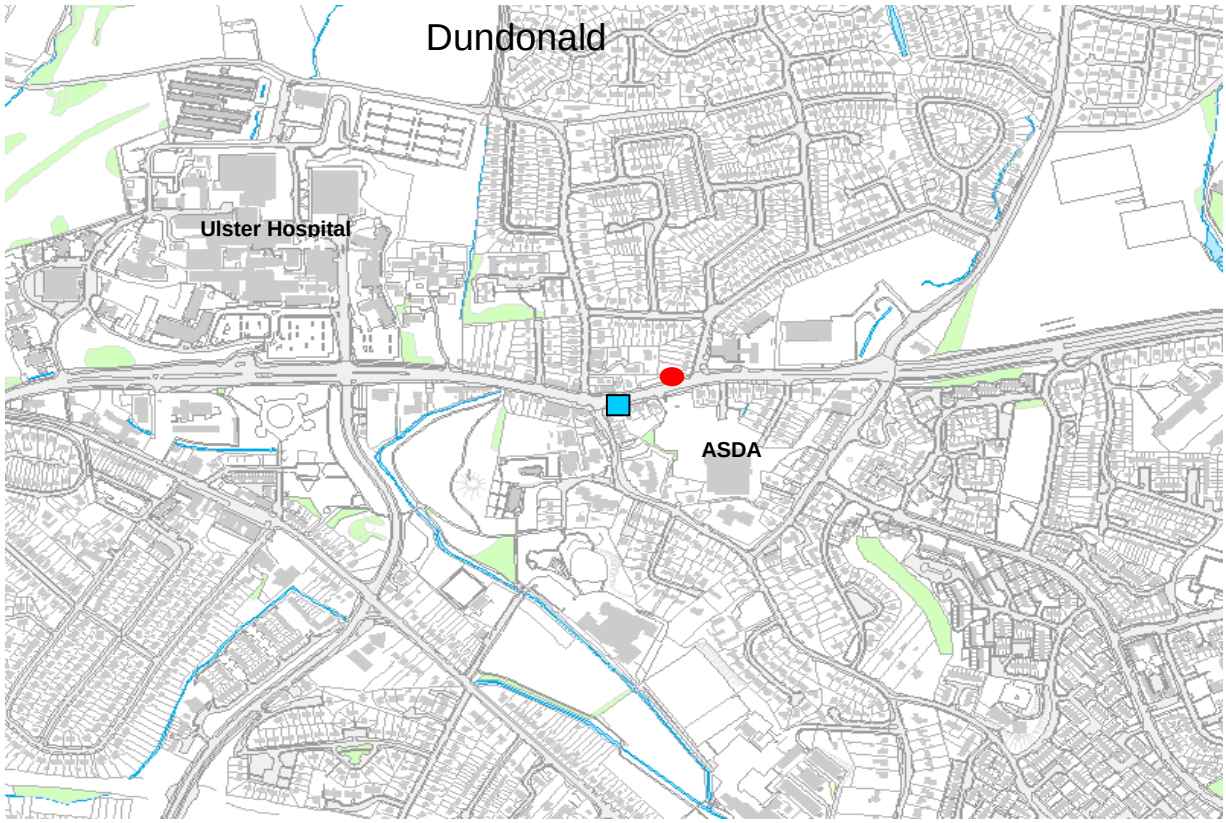


Figure 2.6 Picture of Automatic Monitoring Station in Dundonald Village

Table 2.1 – Details of Automatic Monitoring Sites

Site ID	Site Name	Site Type	Irish Grid Reference	Irish 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?
	Kilmakee Activity Centre	Urban Background	E328956	N367973	**2.5**	PM_{10}, SO_2	NO	TEOM FDMS UV Analyser	YES 10m	NA	YES
	Dundonald Village	Roadside	E342016	N374041	**2.5**	NO_2,	NO	Chemiluminescence	YES 22m	3M	YES (30m from AQMA)

2.1.2 Non-Automatic Monitoring Sites

Lisburn and Castlereagh City Council in 2019 had 21 passive monitoring NO_2 diffusion tubes, at 17 roadside and background sites and a co-location study is also carried out at the automatic station in Dundonald. Most are positioned along the main arterial routes into Belfast, triplicate tubes are positioned on the façade of Normandy Court within the AQMA. Two new sites were identified in 2018 and established in 2019 these where:

1. Blaris Green / Drive – A number of new houses have been built in this area adjacent to the M1 motorway with plans for further residential developments and link road to a new train halt.
2. Knockmore Road – A new road layout is proposed for the future also leading to the proposed new train halt.

Tube 13 Blaris Road due to vandalism, permission was granted to move it to the façade of the nearest relevant exposure (tube 13a)

Results from the co-location study at the automatic station in Dundonald, were submitted into the national data base

The diffusion tube studies for the past five years do not show any particular trends outside of the AQMA (See Fig. 2.19)

The NO_2 diffusion tubes were supplied and analysed by Gradko Environmental.

Details of the QA/QC for the diffusion tubes and the reason for the use of the bias adjustment factor can be found in Appendix A

Below are maps of the diffusion tube sites, and the two new sites identified in 2019.

Figure 2.7 – Map(s) of Non-Automatic Monitoring Sites

Distribution of NO_2 diffusion tubes within Council area

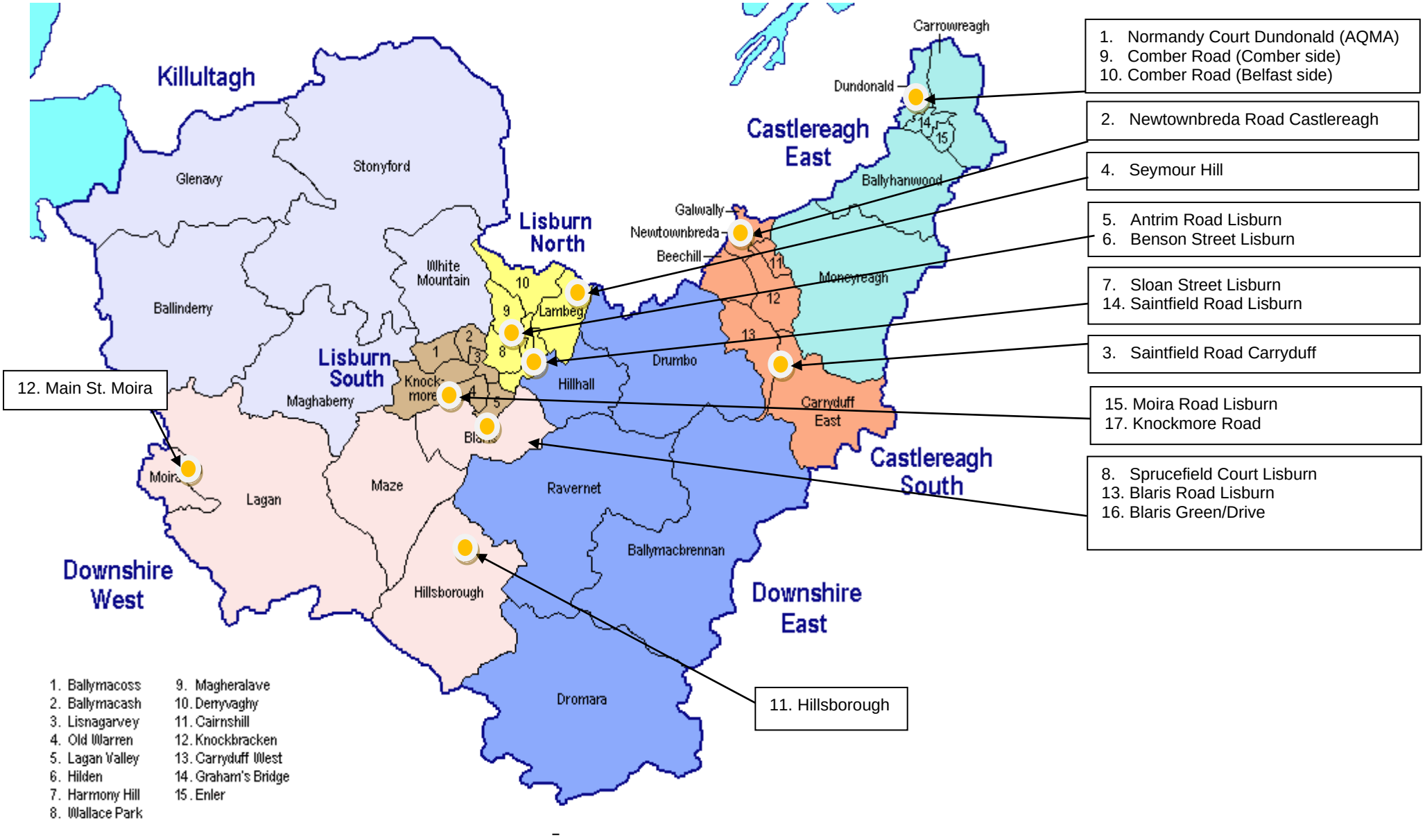


Figure 2.8 Position of tube 1. Dundonald village in AQMA(Normandy Court), and Comber Road Dundonald (9,10)

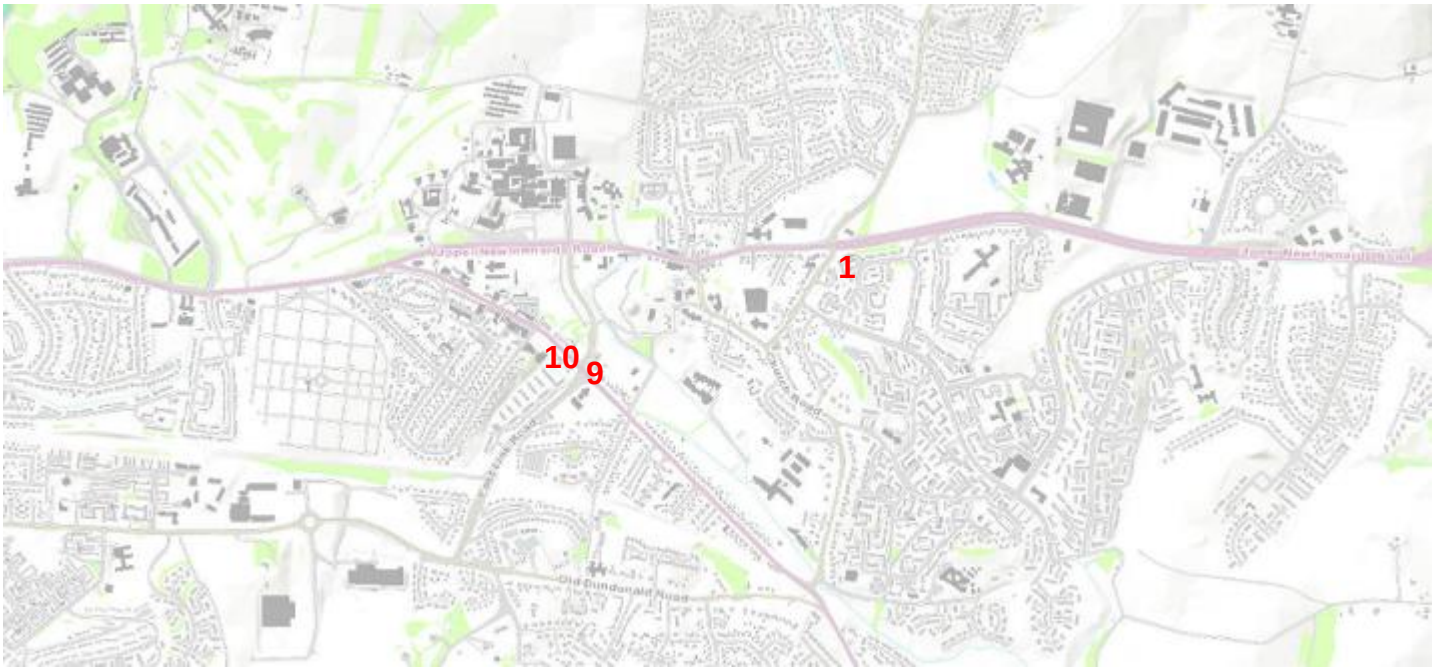


Figure 2.9 Picture of NO_2 Tubes in AQMA Normandy Court Dundonald

Figure2.10 Position of tubes Castlereagh area (Newtownbreda)

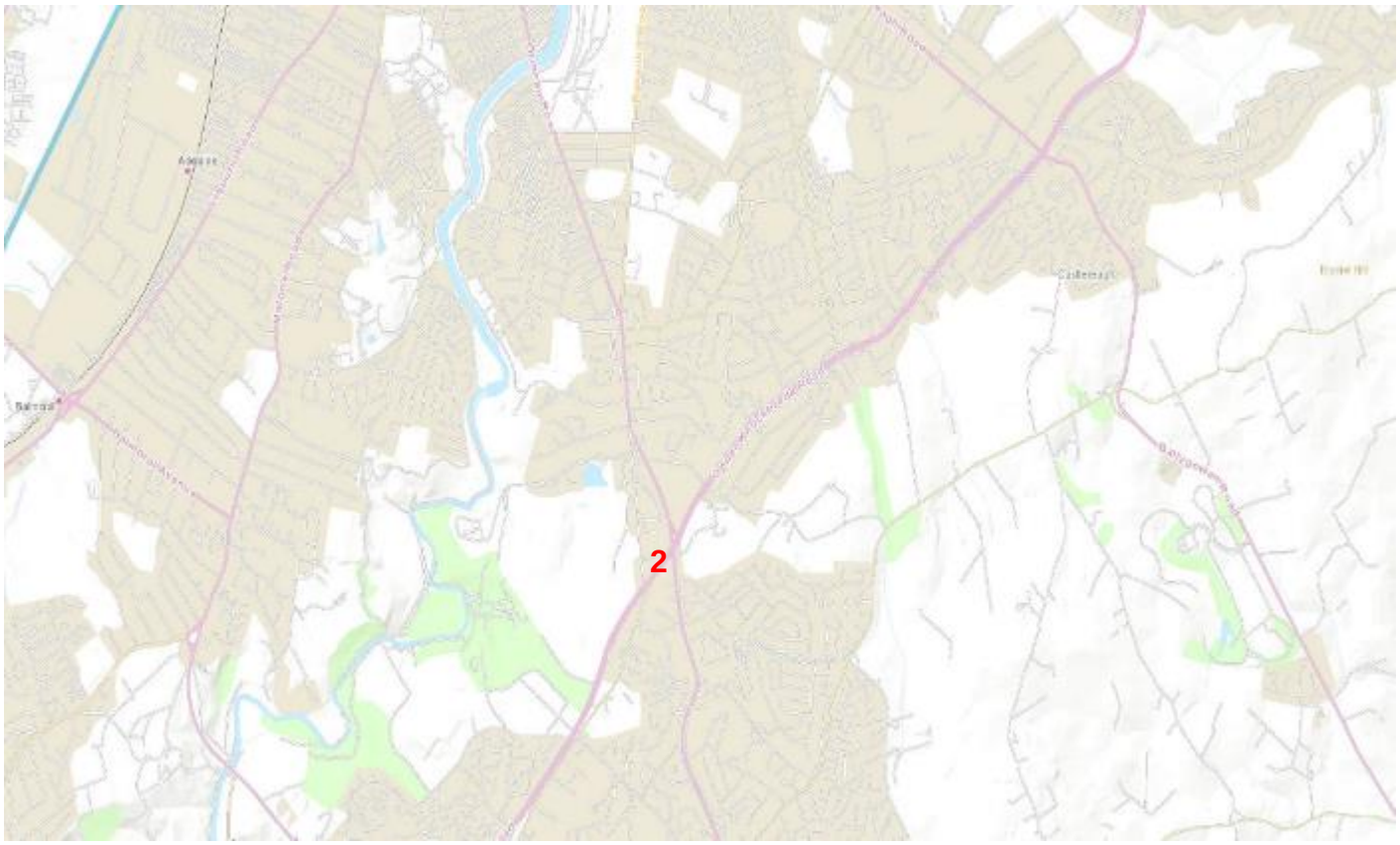


Figure2.11 Position of tube Saintfield Road Carryduff

Figure2.12 Position of tube Seymour Hill

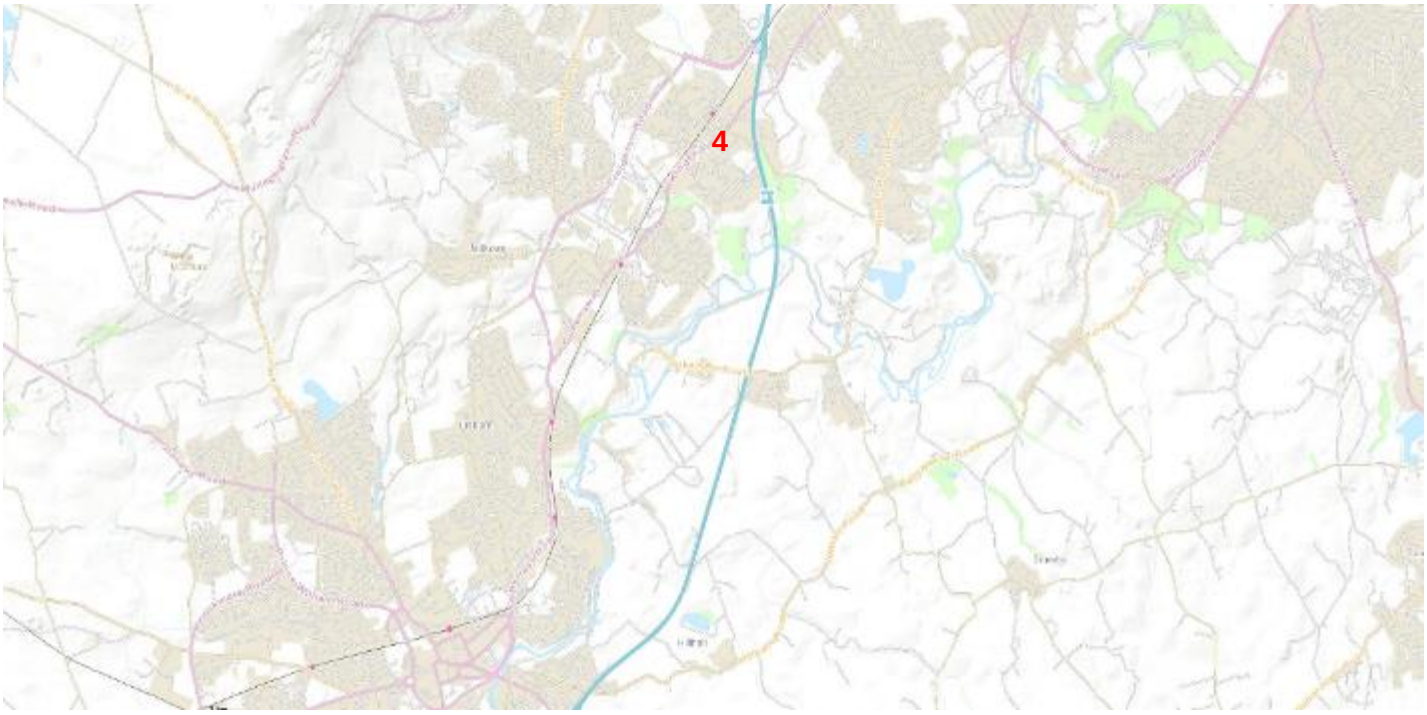


Figure 2.13 Position of tubes in Lisburn City

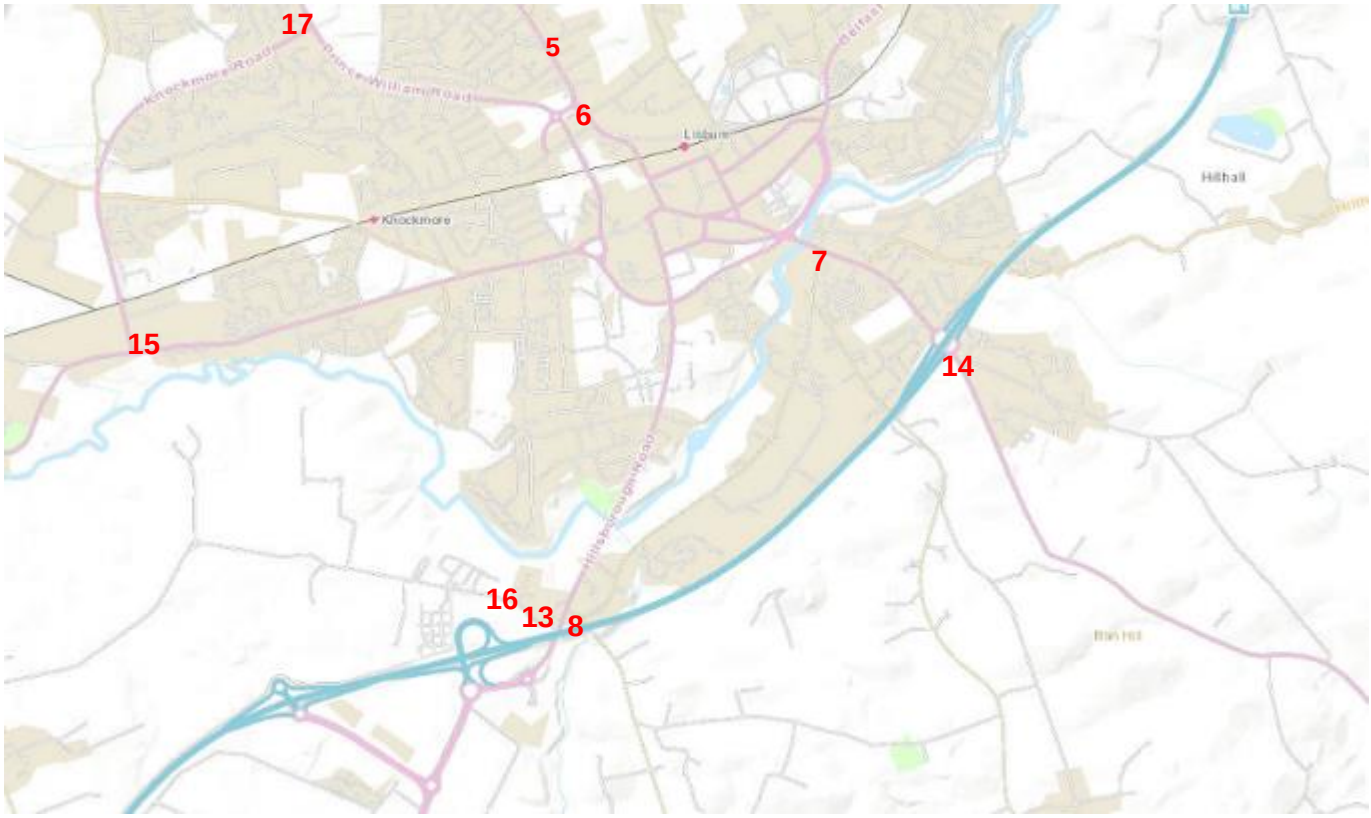


Figure 2.14 Map of tube in Hillsborough

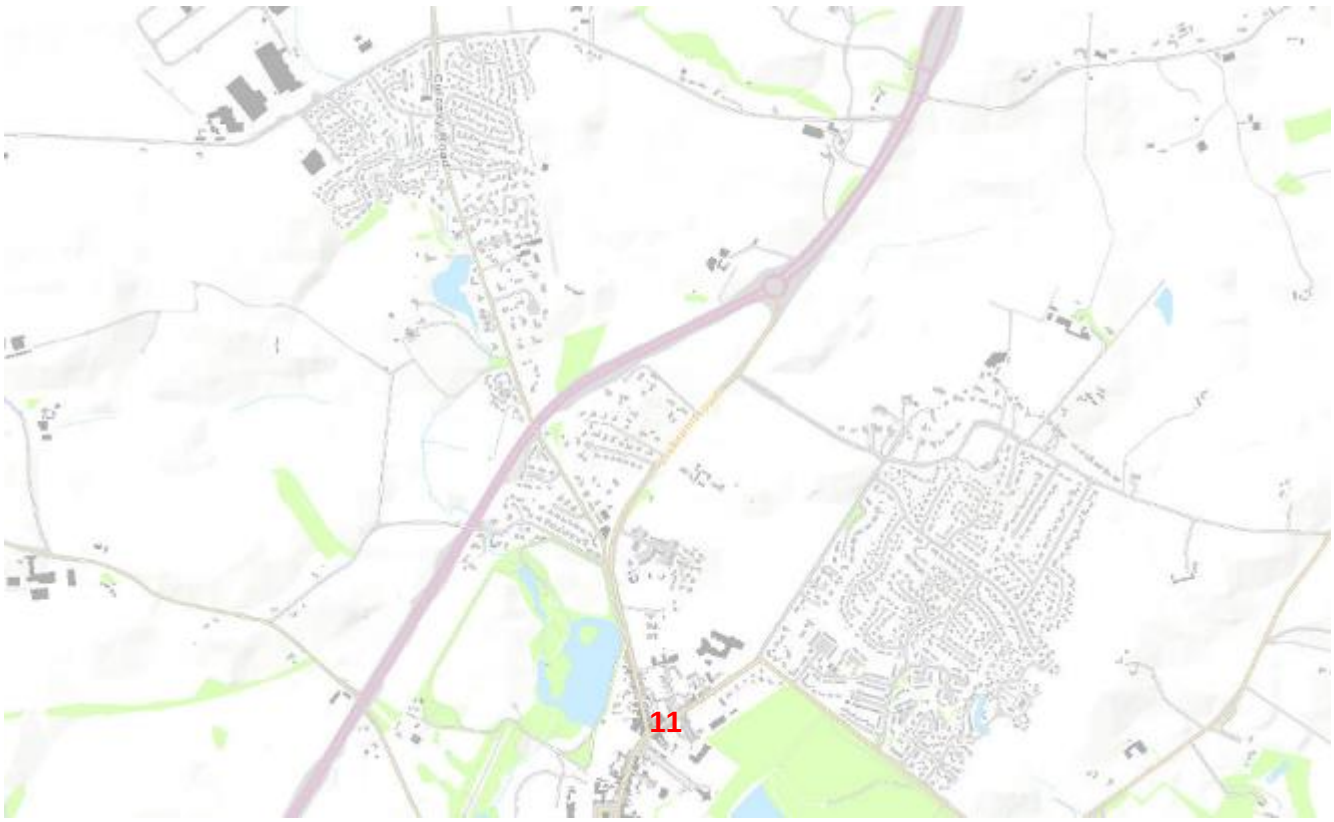
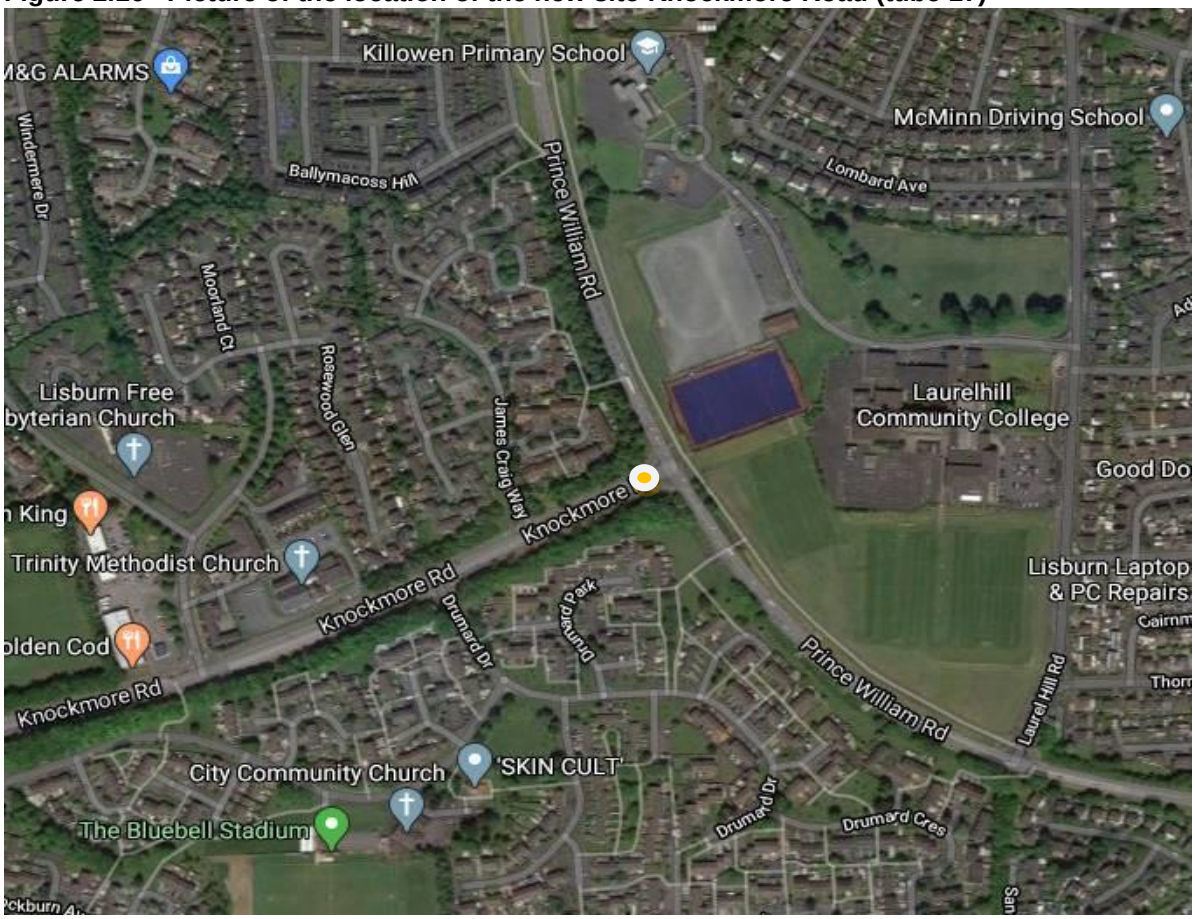


Figure 2.15 Position of tube in Moira

Figure 2.16 Picture of the location of the new site Knockmore Road (tube 17)



Position of diffusion tube

Figure 2.17 Picture of the location of the new diffusion tube Blaris Green/Drive

Position of existing Diffusion tube **13**

Position of new tube Diffusion tube **16**

Position of tube 13 after relocation 13a

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?
1	Normandy Court Dundonald (AQMA)	Roadside	341991	374013	3m	NO_2	Yes	No	Yes (0m)	0.5m	Yes
2	Newtownbreda Road Castlereagh	Roadside	335246	370061	2.5m	NO_2	No	No	Yes (7m)	2.5m	Yes
3	Saintfield Road Carryduff	Roadside	336832	365625	2m	NO_2	No	No	Yes (70m)	10m	Yes
	Ventnor Pk Lambeg	Background	326900	362013	2.5m	NO_2	No	No	No (6m)	0.5m	No
4	Seymour Hill	Background	328585	368117	2.5m	NO_2	No	No	No (50m)	100m	
5	Antrim Rd Lisburn	Roadside	326313	364621	2.5m	NO_2	No	No	Yes (7m)	1m	Yes
6	Benson Street Lisburn	Roadside	326090	364619	2m	NO_2	No	No	Yes (0.1m)	Yes	Yes
7	Sloan Street Lisburn	Roadside	327236	364102	2.5m	NO_2	No	No	Yes (1.5m)	2m	Yes

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?
8	Sprucefield Court Lisburn	Roadside	327586	363586	2m	NO_2	No	No	Yes (1m) Façade of garage adjacent to house from road	15m	Yes
	Harry's Road Culcavy	Roadside	323811	360577	3m	NO_2	No	No	Yes (10m)	5m	Yes
	Culcvavy Road Culcavy	Roadside	323849	360318	2.5m	NO_2	No	No	Yes (10m)	2m	Yes
9	Comber Road (Comber side)	Roadside	341731	373666	2.5m	NO_2	No	No	Yes (4m)	1.5m	Yes
10	Comber Road (Belfast side)	Roadside	341622	373759	2.5m	NO_2	No	No	Yes (4m)	1.5m	Yes
11	Hillsborough	Roadside	324404	358876	2m	NO_2	No	No	Yes (0.1m)	1m	Yes
12	58-62 Main Street,Moira	Roadside	314994	360589	3m	NO_2	No	No	Yes (4m)	1.5m	Yes
13	Blaris Road Lisburn	Roadside	325993	362462	2.5m	NO_2	No	No	Yes (4m)	1.5m	Yes
13a	Blaris Road Lisburn facade	Roadside	325993	362462	2m	NO_2	No	No	Yes (0m)	5.5m	Yes
14	Saintfield Road Lisburn	Roadside	327810	363609	2.5m	NO_2	No	No	Yes (4m)	1.5m	Yes

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?
15	Moira Road Lisburn	Roadside	324169	363671	2.5m	NO_2	No	No	Yes (4m)	1.5m	Yes
16.	Blaris Green/Drive	Roadside	325883	362501	2.5m	NO_2	No	No	Yes (7m)	1m	Yes
17.	Knockmore Road	Roadside	324883	365180	2.5m	NO_2	No	No	Yes (19m)	1.5m	Yes

(Sites listed in purple are new in 2019)

(sites listed in blue were new in 2017)

(sites listed in green where re-located to new sites in 2017)

2.2 Comparison of Monitoring Results with Air Quality Objectives

No exceedances of the AQS objectives have been identified from the monitoring data collected since the last progress report. All monitored pollutant concentrations outside of the AQMA have been below their respective air quality objective limits at relevant exposure. In the following section results are presented for NO_2 at the automatic and diffusion tube sites and compared with the objective.

2.2.1 Nitrogen Dioxide (NO_2)

In the following section results are presented for NO_2 at the automatic and diffusion tube sites and compared with the objective. There was no signification change in the results in 2019 outside of the AQMA and all sites were below the objective.

Automatic Monitoring Data

Table 2.3 presents the annual mean concentrations of NO_2 determined at the automatic site in 2019 from the hourly measurements.

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 2019 % [b]	Annual Mean Concentration (µg/m^3)				
					2015	2016	2017	2018	2019
Castlereagh Dundonald	Roadside	N (within 30M)	N/A	99.8%	29	27	27	24	22

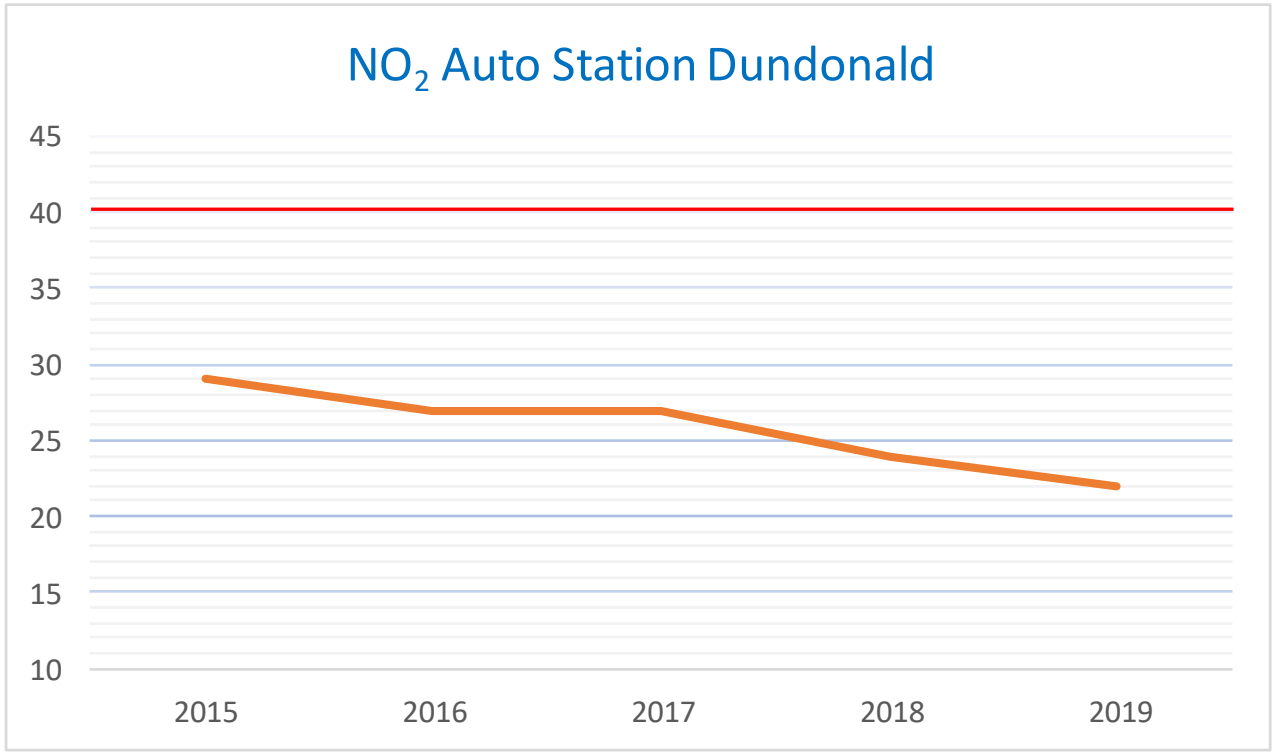
Table 2.4 – Results of Automatic Monitoring for NO_2: Comparison with 1-hour Mean Objective

Site ID	Site Type	Within AQMA?	Valid Data Capture for Monitoring Period % [a]	Valid Data Capture 2019 % [b]	Number of Hourly Means > 200µg/m^3				
					2015	2016	2017	2018	2019
Castlereagh Dundonald	Roadside	N (within 30M)	N/A	99.8%	0	0	0	0	0

Trends in Annual Mean NO_2 Concentrations Measured at Automatic Monitoring Sites

The automatic station was installed in Dundonald in 2008 because of high results from NO_2 tubes at the Upper Newtownards Road site at Normandy Court. Results had been consistent at this site, there was a noticeable reduction in 2015 and this trend has continued with a significant reduction by 2019.This coincides with the opening of the Park & Ride in 2014 and the new Rapid transport System coming into operation in September 2018, in 2019 the Park & Ride was at full capacity during working hours.

Figure 2.18 trend in annual mean NO_2 at Dundonald Automatic site



Diffusion Tube Monitoring Data

Results at the NO_2 diffusion tube sites, situated within the council area are shown below in Table 2.5. They are sited in accordance with the technical guidance LAQM.TG (16)

A diffusion tube co-location study was carried out at the Dundonald automatic site. The results of this study have been submitted into the national data base. The 2019 local bias was **0.78.** As in previous years a decision has been made to apply the national bias adjustment factor of **0.92,** as based on 30 studies this was deemed to be a more realistic figure. All diffusion tube sites are below the objective at relevant exposure. Two sites Newtownbreda Road and Blaris Road have been distance calculated to the nearest relevant exposure as both are kerbside sites and results were close to the objective, this is to determine if a detailed assessment is necessary.

Details of the QA/QC for the diffusion tubes and the reason for the use of the bias adjustment factor **0.92** can be found in Appendix A

Results from the façade of the property at the Sprucefield Court site have remained close to the objective for a number of years. Monitoring is carried out at this site as the M1 motorway runs behind the dwelling, traffic has increased on the Motorway since this site was identified but there has been no significant increase in the results.

A further monitoring sites in this area was identified at Blaris Road where a major residential development is near completion, monitoring commenced at this site in 2017 and extended in 2019.

The Normandy Court Dundonald NO_2 tube site within the AQMA showed a further reduction in 2019, most likely due to the Park & Ride in Dundonald which opened in 2014 and has continued to grow in popularity and can regularly be found to be at capacity, especially since the completion in September 2018 of the new Glider Rapid Transport Network with a direct link to Belfast City, LCCC will continue to monitor NO_2 in Dundonald to establish further trends and levels within the AQMA.

Trends for the 17 diffusion tube sites within the Council area are shown in Figure 2.19

Table 2.5 – Results of NO_2 Diffusion Tubes 2019

Site ID	Location	Site Type	Within AQMA?	Triplicate or Collocated Tube	Data Capture 2018 (Number of Months or %)	Data with less than 9 months has been annualised (Y/N)	Confirm if data has been distance corrected (Y/N)	Annual mean concentration (Bias Adjustment factor = 0.92) 2019 (µg/m^3)
1	Normandy Court Dundonald (AQMA)	Roadside	Y	Triplicate	12 months	N/A	N	31
2	Newtownbreda Road Castlereagh	Roadside	N	single	12 months	N/A	Y	**31**[b]
3	Saintfield Road Carryduff	Roadside	N	single	12 months	N/A	N	17
4	Seymour Hill	Background	N	single	11 months	N/A	N	17
5	Antrim Rd Lisburn	Roadside	N	single	12 months	N/A	N	27
6	Benson Street Lisburn	Roadside	N	single	12 months	N/A	N	26
7	Sloan Street Lisburn	Roadside	N	single	10 months	N/A	N	28
8	Sprucefield Court Lisburn	Roadside	N	single	12 months	N/A	N	34
9	Comber Road (Comber side)	Roadside	N	single	12 months	N/A	N	24
10	Comber Road (Belfast side)	Roadside	N	single	12 months	N/A	N	23

Site ID	Location	Site Type	Within AQMA?	Triplicate or Collocated Tube	Data Capture 2018 (Number of Months or %)	Data with less than 9 months has been annualised (Y/N)	Confirm if data has been distance corrected (Y/N)	Annual mean concentration (Bias Adjustment factor = 0.92) 2019 (μg/m^3)
11	Hillsborough	Roadside	N	single	12 months	N/A	N	25
12	58-62 Main Street Moira	Roadside	N	single	12 months	N/A	N	26
13a	Blaris Road Lisburn facade	Roadside	N	single	6 months	N/A	Y	**31**[a]
14	Saintfield Road Lisburn	Roadside	N	single	12 months	N/A	N	29
15	Moira Road Lisburn	Roadside	N	single	11 momths	N/A	N	23
16.	Blaris Green/Drive	Roadside	N	single	11 momths	N/A	N	27
17.	Knockmore Road	Roadside	N	single	12 months	N/A	N	32

Sites in blue were new in 2017 , sites in purple were new in 2019

[a] This site has been "annualised" as in Boxes 7.9 and 7.10 of LAQM.TG16, as full calendar year data capture was less than 75%

[b] These sites have been distance calculated to the nearest relevant exposure using the following tool "NO_2 fall-off with distance" calculator (http://laqm.defra.gov.uk/tools-monitoring-data/no2-falloff.html),

Table 2.6 – Results of NO_2 Diffusion Tubes (2015 to 2019)

Site ID	Site Type	Within AQMA?	Annual mean concentration (adjusted for bias) µg/m³				
			2015 (Bias Adjustment Factor =0.88)	2016 (Bias Adjustment Factor = 0.92)	2017 (Bias Adjustment Factor = 0.89)	2018 (Bias Adjustment Factor = 0.93)	2019 (Bias Adjustment Factor = 0.92)
1	Normandy Court Dundonald (AQMA)	Roadside	35	39	40	34	31
2	Newtownbreda Road Castlereagh	Roadside	29[b]	33[b]	31[b]	32[b]	31[b]
3	Saintfield Road Carryduff	Roadside	14	17	19	23	17
	Ventnor	Background	13	14			
4	Seymour Hill	Roadside			14	18	17
5	Antrim Rd Lisburn	Roadside	26	29	27	30	27
6	Benson Street Lisburn	Roadside	24	27	26	28	26
7	Sloan Street Lisburn	Roadside	29	34	26	32	28
8	Sprucefield Court Lisburn	Roadside	32	37	39	38	34
	Harry's road Culcavy	Roadside	19	20			
	Culcavy Road	Roadside	14	17			
9	Comber Road (Comber side)	Roadside			28	25	24
10	Comber Road (Belfast side)	Roadside			29	28	23
11	Hillsborough	Roadside	25	28	27	29	25
12	58-62 Main Street Moira	Roadside	25	30	29	29	26

Site ID	Site Type	Within AQMA?	Annual mean concentration (adjusted for bias) μg/m^3				
			2015 (Bias Adjustment Factor =0.88)	2016 (Bias Adjustment Factor = 0.92)	2017 (Bias Adjustment Factor = 0.89)	2018 (Bias Adjustment Factor = 0.93)	2019 (Bias Adjustment Factor = 0.92)
13	Blaris Road Lisburn	Roadside			28[b]	29[b]	N/A
13a	Blaris Road Lisburn facade	Roadside					31[a]
14	Saintfield Road Lisburn	Roadside				33	29
15	Moira Road Lisburn	Roadside			25	25	23
16	Blaris Green/Drive	Roadside					27
17	Knockmore Road	Roadside					32

[a] This site has been "annualised" as in Boxes 7.9 and 7.10 of LAQM.TG16, as full calendar year data capture was less than 75%

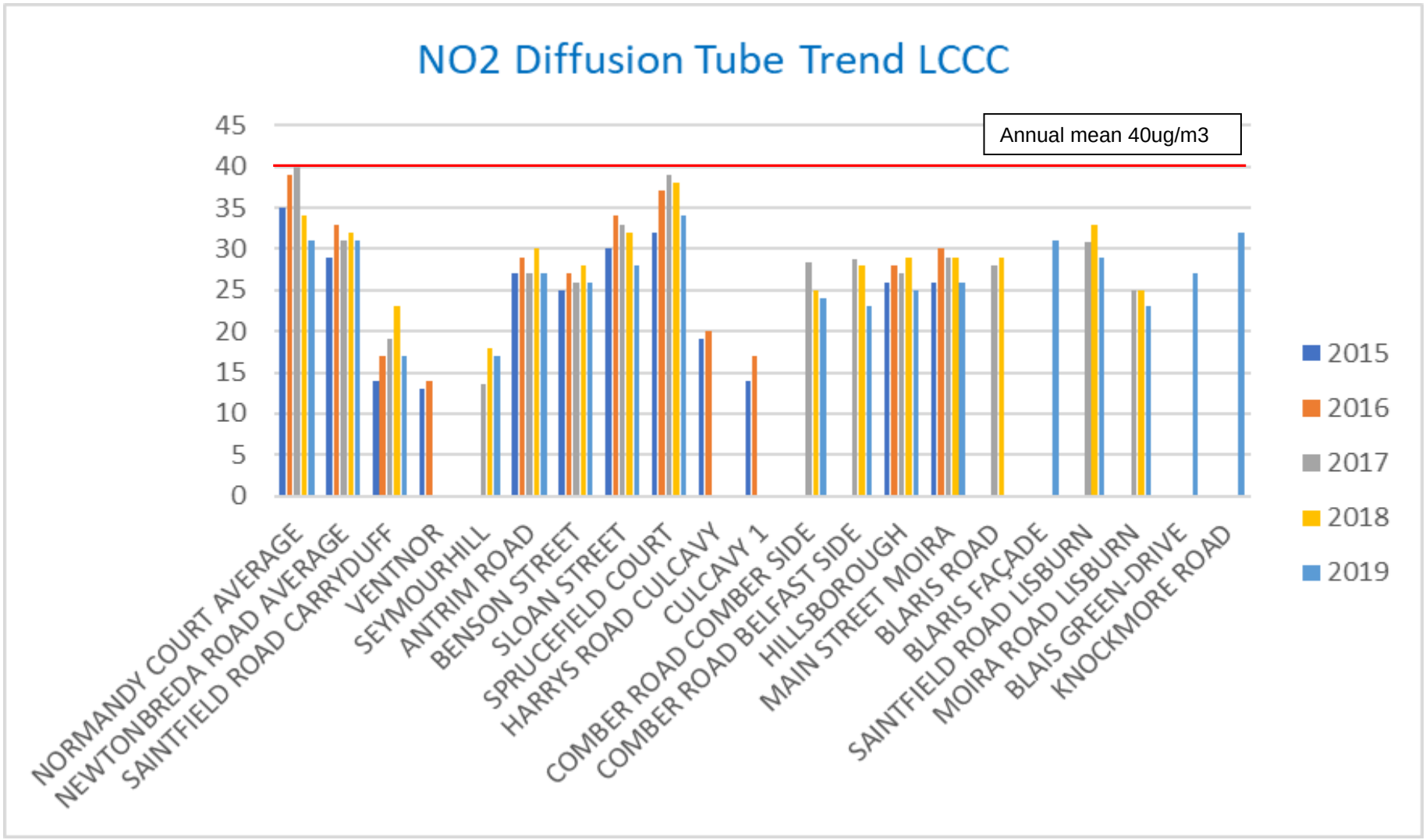
[b] figures in red are the distance calculated figures

Sites in green were re-located in 2017

Sites in blue were new in 2017

Sites in purple were new in 2019

Figure 2.22 – Trends in Annual Mean Nitrogen Dioxide Concentrations Measured at Diffusion Tube Monitoring Sites



2.2.2 Particulate Matter (PM_{10})

Automatic monitoring of PM_{10} in 2019 was undertaken at Kilmakee Activity Centre, Rowan Drive, Seymour Hill situated between Lisburn City and Belfast City.

This location is also the site for the AURN PAH and Black Carbon monitors and was chosen due to the high use of secondary solid fuel use at that time.

In 2019 measurements were recorded using a TEOM instrument, the results are ratified and adjusted accordingly by AQDM, the data management company. Summaries of this data, with regard to annual and hourly mean objectives, are presented below.

All results remain below the objective.

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 2019 % [b]	Confirm Gravimetric Equivalent (Y or N/A)	Annual Mean Concentration (µg/m^3)				
						2015	2016	2017	2018	2019
Kilmakee Activity Centre (PM_{10})	Urban Background	N	N/A	88.9%	Y	14	12	11	14	14

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

PM_{10} has remained consistently low in Dunmurry

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 2019 % [b]	Confirm Gravimetric Equivalent (Y or N/A)	Number of Daily Means > 50µg/m^3				
						2015	2016	2017	2018	2019
Kilmakee Activity Centre (PM_{10})	Urban Background	N	N/A	88.9%	Y	0	2	0	0	0

2.2.3 Sulphur Dioxide (SO_2)

Lisburn and Castlereagh City Council have an SO_2 automatic site situated at Kilmakee alongside the PM_{10} and PAH analysers, installed at the end of 2012. This site was chosen due to high PAH results in the area and across Northern Ireland compared to the rest of the UK, there was high secondary solid fuel use in the area at the time and it is adjacent to relevant exposure. There were no exceedances of the air quality objective in 2019.

The data has been fully ratified by AQDM.

Details of the QA/QC are available in Appendix A

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 2019 % [b]	Number of exceedances:		
					15-minute Means > 266µg/m^3	1-hour Means > 350µg/m^3	24-hour Means > 125µg/m^3
Kilmakee Activity Centre Dunmurry	Urban Background	N	N/A	72.3%	0	0	0

Figure 2.6 – Trends in SO_2 Concentrations

Results have remained very low at this site.

2.2.4 Benzene

No monitoring of Benzene was carried out in 2019.

2.2.5 Other Pollutants Monitored

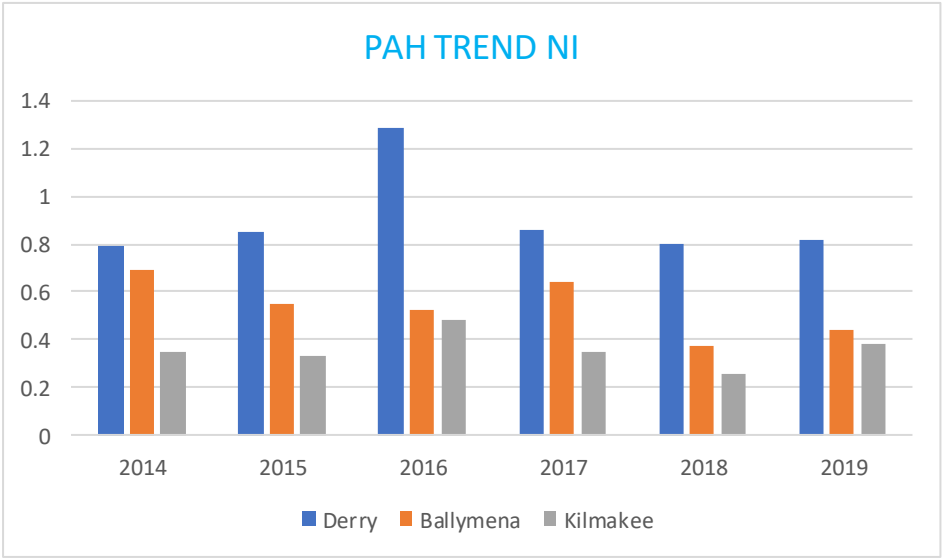
Polycyclic aromatic hydrocarbons (PAH)

The national network monitoring for PAH includes three monitoring sites in Northern Ireland, Kilmakee Activity Centre, Seymour Hill in LCCC is one of these. The UK National Air Quality Objective for PAH is an annual average of 0.25ng /m3, the EU limit value for PAH is an annual average of 1ng BaP/m3. The Kilmakee site is below the EU objective but slightly over the UK non-mandatory objective. Results have shown an increase in 2016 which is most probably climatic as the Derry site showed a similar percentage increase and there have been no new local developments.

The following table shows the results 2014 - 2019.

Site	2014 ng/m^3 annual mean	2015 ng/m^3 annual mean	2016 ng/m^3 annual mean	2017 ng/m^3 annual mean	2018 ng/m^3 annual mean	2019 ng/m^3 annual mean
Derry	0.79	0.85	1.29	0.86	0.80	0.82
Ballymena	0.69	0.55	0.52	0.64	0.37	0.44
Kilmakee	0.35	0.33	0.48	0.35	0.26	0.38

Figure 2.23 Trends in PAH Northern Ireland



Radiation Monitoring

Radiation monitoring has been carried out in Lisburn & Castlereagh City Council the following table shows the results for a number of sites in 2018:

Site	31/01/18	25/10/18
Derriaghy (96)	-	0.07
Ballinderry (97)	-	0.06
Glenavy (79)	-	0.07
Dundrod (80)	-	0.05
Red Hill Road	-	0.08
Dundonald	0.08	
Carryduff	0.08	
Drumlough	0.08	
Cargycreevy	0.08	

2.2.6 Summary of Compliance with AQS Objectives

Lisburn and Castlereagh City Council has examined the results from monitoring in the area.

Concentrations within the AQMA (Normandy Court, Dundonald) are not exceeding the objective for NO_2 in 2019. LCCC shall continue to monitor levels within the AQMA in 2020.

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

3 New Local Developments

Lisburn & Castlereagh City Council confirms that there are no new or newly identified local developments in 2019 which may have an impact on air quality within the Local Authority area.

Lisburn & Castlereagh City 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 Planning Applications

The following planning applications were commented on by the Environmental Health department in relation to Air Quality

Air quality assessments completed

1. LA05/2019/0107/PAD - Development of golf resort, including luxury hotel, spa and conference centre, 18 hole championship golf course and associated facilities, enabling housing units and associated site works (12/02/19)

   AQ report requested but not provided

2. LA05/2019/1270/F - Proposed part demolition of existing buildings, refurbishment of former SuperValu building and construction of 2 no. retail units, 1 no. bar/restaurant unit, 1 no. off licence unit and 21 no. apartments with associated car parking and landscaping (amendment to planning approval under reference LA05/2018/0459/F)

   No issues identified in the AQ report

3. LA05/2019/1024/F - The development is for an asphalt surfaced car park, which shall be an extension to the existing DFI Park and Ride site. The extension shall provide 359 additional parking spaces. The scheme shall include new concrete kerbs and boundary fencing. Additional street lighting shall be provided for the extension

   No issues identified in the AQ report

Significant application

1. LA05/2019/0712/F - Proposed residential development comprising erection of 139 dwellings (65 detached, 58 semi-detached and 16 apartments), associated open space and landscaping, access and ancillary works.

5 Local Transport Plans and Strategies

Lisburn & Castlereagh City Council falls within the Belfast Metropolitan Area Plan and therefore the Belfast Metropolitan Transport plan, https://www.infrastructure-ni.gov.uk/publications/regional-strategic-transport-network-transport-plan-2015 This included the development of the Belfast Rapid Transport System with one of the routes leading from the new Park & Ride in Dundonald into Belfast City Centre, which was completed in September 2018.

Department for Regional Development
www.drdni.gov.uk

Objectives of BRT

The Department for Regional Development is implementing the first phase of the new Belfast Rapid Transit (BRT) system which will help to address the current and future transport needs in Belfast and support sustainable economic growth and regeneration.

BRT will provide a modern, safe, efficient and high quality public transport service which will encourage people to travel by public transport instead of by car. It will help to integrate communities and link people to jobs, shops, leisure, health and education services. The first phase of BRT will connect East Belfast, West Belfast and Titanic Quarter via the city centre.

Belfast Rapid Transit

Key Features of BRT

Services

- Operating approximately 05:30 - 23:30 weekdays and later at weekends subject to demand.
- Faster and more reliable journey times with high frequency services.
- Integration with other forms of transport and other public transport services.
- Direct services between East and West Belfast.
- Replace Metro 4 and 10 services with feeder services connecting to residential areas in the Dundonald & Colin Areas.

Vehicles

- Modern high capacity buses with easy access.
- High quality passenger environment with advanced ticketing and information systems.
- Advanced hybrid engine technology producing less noise and emissions.

Halts and interchanges

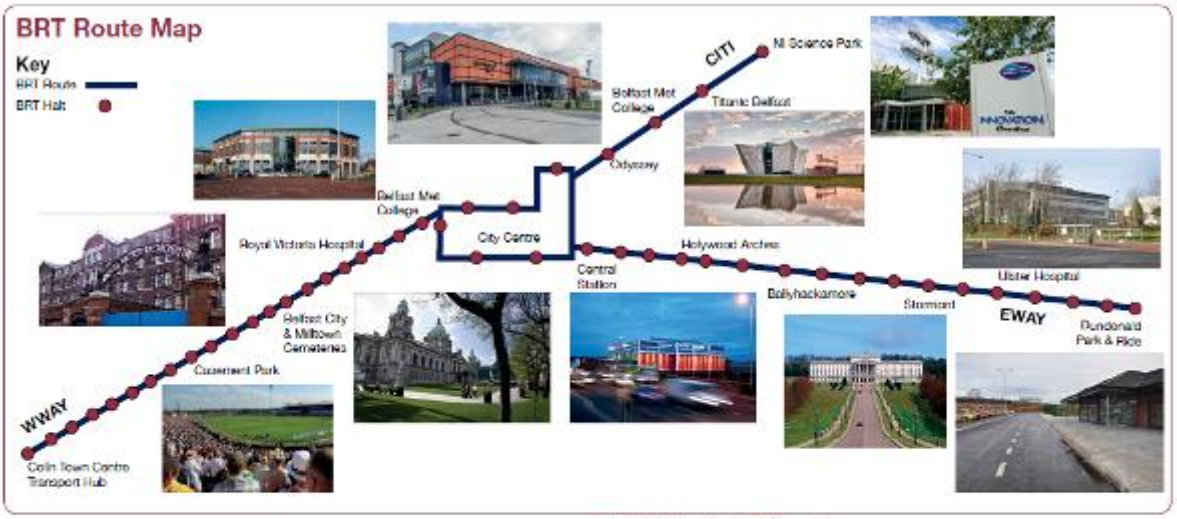
- High quality materials and appearance.
- Real time passenger information.
- CCTV for safety and security.
- Facilate easier boarding.
- Ticket machine and validator.
- Spaced approximately 400m apart on the routes.

Bus lanes

- Extensive bus lanes along the routes with anticipated operating hours of 07:00 – 19:00hrs, Monday to Saturday.
- Traffic lights giving priority for BRT vehicles at junctions.
- Improved pedestrian crossing facilities.
- Improved road surfaces for smoother journeys.

Fares and fare collection

- Use of Smartcard and new technologies.
- Off-board ticketing integrated with other public transport services.
- Concessionary fares will apply.



The Routes

CITI route - from the city centre, via Queen Elizabeth Bridge, along Queen's Quay and Queen's Road to Titanic Quarter, returning via Queen's Road, Queen's Quay, Station Street, Bridge End and Queen's Bridge.

EWAY route - from the city centre along Albertbridge Road and Upper Newtownards Road to a new park and ride site at Dunlady Road in Dundonald.

WWAY route - from the city centre along Divis Street, Falls Road, Andersonstown Road and Stewartstown Road to McKinstry Road Roundabout via a new transport hub at Colin Town Centre.

BRT Project Timeline

2013 - 2014

Detailed Design

Start work on routes and Park & Ride facilities

[This will include road widening and resurfacing along sections of the route]

2015-2018

Finish work on routes and Park & Ride facilities

Introduce bus lanes

[Bus lanes will gradually operate during morning and evening rush hours until 2018 when they will convert to 12 hour operation]

Finalise operations plan

Purchase BRT vehicles

Install halts

2018

BRT operational

6 Implementation of Action Plans

LCCC Updating and Screening Assessment 2015 explained the amalgamation of local authorities in Northern Ireland, and how LCCC was made up from the previous council areas of Lisburn City and Castlereagh Borough with a substantial portion moving into Belfast City Council.

Castlereagh Borough Council declared the AQMA within LCCC area in Dundonald village (apartments Normandy Court), in January 2011 and an Air Quality Action plan was submitted to the Department in 2013.

A survey carried out by TransportNI indicated the Park & Ride situated east of the AQMA in Dundonald and the introduction of the new rapid Transport system (Glider Bus) could have a possible reduction in road traffic vehicles by 20%.

There was a reduction of 10.8% in NO_2 2015 which now appears to have been climatic as levels increased again in 2016 and 2017. However during 2018 when the Upper Newtownards Road layout was changed in preparation for the new glider bus from the Park & Ride, which came into operation in September 2018, there was a noticeable reduction in NO_2, the opening times of the Park & Ride were extended to midnight at this time and in 2019 it continued to grow in popularity and was at capacity during working hours, the 2019 recorded NO_2 annual mean was 31ug/m^3 within the AQMA Normandy Court showing a further 10% reduction from 2018. If this trend continues or levels remain at 31ug/m3 LCCC will revoke the AQMA, monitoring shall continue within the AQMA to enable a trend to be established.

LCCC is committed to maintaining the recently recorded levels and shall update the 2013 Action Plan before the 2021 Update and Screening Assessment is submitted.

Pictures of the new Park & Ride Dundonald

Table 9.1 – Action Plan Progress

Action Plan Measure	Lead Authority	Original Timescale	Implementation	On Target	Comments
1.LCCC to investigate using cleaner more sustainable vehicles	Lisburn & Castlereagh City Council	July 2014	No. of vehicles purchased meeting EURO 5 standard rating. Purchase of electric vehicles for trial use within Environmental Health.	Yes	LCCC continues to only purchase vehicles meeting EURO 5 classification. Two electric vans purchased in 2012 and charging points installed for use within the Environmental Health department.
2.Continue to provide Eco bus driver training	Translink	On-going	No of drivers trained and devices fitted	Yes	All drivers have received Eco-Driving Training and Eco-Driving is a continual part of their CPC training.
3.Continue to purchase EURO 5 Classified vehicles and sustainable transport methods	Translink	On-going	Continue to upgrade vehicles	Yes	Translink continue to upgrade their vehicles and consider more sustainable transport links
4.LCCC to introduce/Encourage Sustainable travel	Lisburn & Castlereagh City Council	September 2013	Production of Green Travel Plan		Castlereagh Borough Council's Travel Plan has included: • Bike to Work Scheme
5.Park & Ride Scheme	TransportNI	June 2014	Park & Ride Scheme Implemented	Yes	The Park & Ride opened in Dundonald in December 2014 and has grown in popularity, levels of NO_2 have continued to reduce at the automatic site in Dundonald and since the new Rapid Transport System came into operation in September 2018 levels have also reduced within the AQMA Normandy Court Dundonald, this trend has continued in 2019..
6. Comment on planning applications to ensure that all relevant air quality issues are highlighted and mitigation measures are considered wherever possible	Lisburn & Castlereagh City Council	On-going	No. of plans commented on	Yes	Environmental Health comments on all planning applications in respective any loss of amenity and includes Air quality issues, requesting an air quality assessment when necessary.

7.Promote Sustainable initiatives in conjunction with Travelwise NI	Travelwise NI	On-going	Initiatives undertaken	Yes	LCCC have been working with Travelwise NI in relation to Bike to Work Week and walk to school initiatives, a new educational no idling outside our schools initiative was launched in 2019.

7 Conclusions and Proposed Actions

7.1 Conclusions from New Monitoring Data

All monitoring at relevant exposure sites within the Council Area have not shown an increase at key locations in 2019.

The NO_2 levels within the AQMA continued to reduce in 2019, there is a positive early indicator of a trend in reduced vehicle emissions in Dundonald village since the new Rapid Transport System (Glider Bus) commenced in 2018. Lisburn & Castlereagh City Council shall continue monitoring at this location in 2020 to establish a further trend in NO_2 levels.

7.2 Conclusions relating to New Local Developments

Lisburn & Castlereagh City Council assessed the NO_2 diffusion tube sites in 2018 and in 2019 a new site was established at Knockmore Road where there is likely to be increased traffic in the future with the proposed development of a new road layout.

7.3 Proposed Actions

This 2020 Progress Report for has identified there is no need to proceed to a detailed assessment for any of the pollutants. Lisburn & Castlereagh City Council is focused upon improving air quality as a whole, therefore all existing monitoring sites shall continue in 2020, and the existing TEOM PM_{10} monitor will be replaced with a new dust monitoring system capable of analysing both PM_{10} and $PM_{2.5}$ so that we may be reliably informed of continuing trends.

Lisburn & Castlereagh City Council jointly with Ards and North Down Borough Council initiated a ‘No Idling outside schools’ campaign in 2019 and although this was not carried on in 2020 due to Covid restrictions, we hope to extend this in the future.

Although the reduction of NO_2 levels in Dundonald have remained consistent in 2019 the Air Quality Management Area shall remain in place until a trend in reduced levels

can be shown. LCCC shall update The Action Plan published 2013 before the submission of the 2021 Update and Screening Assessment.

8 References

TG (2009) Part IV of the Environment Act 1995. Local Air Quality Management: Technical

Guidance LAQM.TG(16). Guidance prepared by the Department for Environment, Food and Rural Affairs and the Devolved Administrations, February 2009

Appendices

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

QA/QC Data of automatic sites

Lisburn City & Castlereagh City Council commissioned AQDM Technology to provide the QA/QC of the automatic measurements of NO_2, SO_2, PM_{10}, for the Kilmakee, Seymour Hill and Dundonald A20 sites. Local authority staff act as the local site operator and visit the sites on a weekly basis carrying out any manual calibration or filter changes required. The sites were repaired as necessary and Environmental Monitoring Services were contracted to service the sites.

Automatic station reports produced by the data Management Company

Produced by AQDM on behalf of Lisburn

LISBURN Seymour Hill, Kilmakee Activity Centre 2019

These data have been fully ratified by AQDM to LAQM TG(16) standards

Air Quality Statistics (Kilmakee Activity Centre)

Pollutant	PM_{10}^{+}	PM_{10}*	SO_2
Number Very High #	0		0
Number High #	0		0
Number Moderate #	2		0
Number Low #	325		25216
Maximum 15-min mean	-	96 µg m^{-3}	16 µg m^{-3}
Maximum hourly mean	87 µg m^{-3}	86 µg m^{-3}	16 µg m^{-3}
Maximum running 8-hr mean	62 µg m^{-3}	58 µg m^{-3}	13 µg m^{-3}
Maximum running 24-hr mean	53 µg m^{-3}	39 µg m^{-3}	8 µg m^{-3}
Maximum daily mean	48 µg m^{-3}	38 µg m^{-3}	8 µg m^{-3}
Average	14 µg m^{-3}	13 µg m^{-3}	1 µg m^{-3}
Data capture	88.9 %	89.4 %	72.3 %

Daily Air Quality Index (DAQI) as defined by COMEAP January 2012 and revised April 2013
+ PM_{10} as measured by a TEOM using the VCM for indicative Gravimetric Equivalent
* PM_{10} as measured by a TEOM
Mass units for the gases are at 20'C and 1013mb

Air Quality Exceedences

Pollutant	Air Quality Regulations (Northern Ireland) 2003	Max Conc	Number	Days	Allowed	Exceeded
PM_{10} Particulate Matter (Gravimetric)	Daily mean > 50 µg m^{-3}	48 µg m^{-3}	0	0	35 days	No
PM_{10} Particulate Matter (Gravimetric)	Annual mean > 40 µg m^{-3}	14 µg m^{-3}	0	-	-	No
Sulphur Dioxide	15-minute mean > 266 µg m^{-3}	16 µg m^{-3}	0	0	35 15 mins	No
Sulphur Dioxide	Hourly mean > 350 µg m^{-3}	16 µg m^{-3}	0	0	24 hours	No
Sulphur Dioxide	Daily mean > 125 µg m^{-3}	8 µg m^{-3}	0	0	3 days	No
Sulphur Dioxide	Annual mean > 20 µg m^{-3}	1 µg m^{-3}	0	-	-	No

CASTLEREAGH DUNDONALD 2019

These data have been fully ratified by AQDM to LAQM TG(16) standards

Site Description

Near the Upper Newtownards Road but not quite classed as a roadside site

Air Quality Statistics

Pollutant	NO_2	NO	NO_X
Number Very High #	0	-	-
Number High #	0	-	-
Number Moderate #	0	-	-
Number Low #	8740	-	-
Maximum 15-min mean	132 µg m^{-3}	354 µg m^{-3}	671 µg m^{-3}
Maximum hourly mean	117 µg m^{-3}	296 µg m^{-3}	543 µg m^{-3}
Maximum running 8-hr mean	79 µg m^{-3}	171 µg m^{-3}	338 µg m^{-3}
Maximum running 24-hr mean	60 µg m^{-3}	107 µg m^{-3}	221 µg m^{-3}
Maximum daily mean	58 µg m^{-3}	103 µg m^{-3}	215 µg m^{-3}
Average	22 µg m^{-3}	17 µg m^{-3}	48 µg m^{-3}
Data capture	99.8 %	99.8 %	99.8 %

Daily Air Quality Index (DAQI) as defined by COMEAP January 2012 and revised April 2013
Mass units for the gases are at 20'C and 1013mb
NO_X mass units are NO_X as NO_2 µg m^{-3}

Air Quality Exceedences

Pollutant	Air Quality Regulations (Northern Ireland) 2003	Max Conc	Number	Days	Allowed	Exceeded
Nitrogen Dioxide	Annual mean > 40 µg m^{-3}	22 µg m^{-3}	0	-	-	No
Nitrogen Dioxide	Hourly mean > 200 µg m^{-3}	117 µg m^{-3}	0	0	18 hours	No

QA/QC of Diffusion Tube Monitoring

In 2019 the NO_2 tubes were supplied, prepared and analysed by Gradko International Limited, using the preparation method 20%TEA/Water. Gradko International Ltd. participates in the AIR-PT/WASP scheme, Quarterly summaries of participating laboratories' performance can be found here:
https://laqm.defra.gov.uk/assets/laqmno2performancedatauptofebruary2019v1.pdf

Diffusion Tube Bias Adjustment Factors

Factor from Local Co-location Studies

A co-location study was carried out at the Dundonald site and the data submitted to the national data base.
http://laqm.defra.gov.uk/bias-adjustment-factors/national-bias.html

The local bias adjustment figure has been calculated as **0.78.**

Decision to use the bias adjustment factor 0.92

The results of the local co-location study at the Dundonald site were submitted to the national data base, the Dundonald local bias adjustment factor was calculated at **0.78,** this co-location study is 30M from the AQMA in Dundonald and is on one of the main arterial routes into Belfast City centre.

The September 2020 National bias adjustment figure for Gradko in 2019 is **0.92.**

A decision was made to apply the national figure of **0.92** as 30 studies were included in this and therefore deemed to be a more realistic figure.

A copy of the National bias adjustment spread sheet can be found below:

National Diffusion Tube Bias Adjustment Factor Spreadsheet — Spreadsheet Version Number: 06/20

Follow the steps below **in the correct order** to show the results of **relevant** co-location studies
Data only apply to tubes exposed monthly and are not suitable for correcting individual short-term monitoring periods
Whenever presenting adjusted data, you should state the adjustment factor used and the version of the spreadsheet
This spreadhseet will be updated every few months: the factors may therefore be subject to change. This should not discourage their immediate use.

This spreadsheet will be updated at the end of September 2020
LAQM Helpdesk Website

The LAQM Helpdesk is operated on behalf of Defra and the Devolved Administrations by Bureau Veritas, in conjunction with contract partners AECOM and the National Physical Laboratory.

Spreadsheet maintained by the National Physical Laboratory. Original compiled by Air Quality Consultants Ltd.

Step 1: Select the Laboratory that Analyses Your Tubes from the Drop-Down List
If a laboratory is not shown, we have no data for this laboratory.

Step 2: Select a Preparation Method from the Drop-Down List
If a preparation method is not shown, we have no data for this method at this laboratory.

Step 3: Select a Year from the Drop-Down List
If a year is not shown, we have no data [2]

Step 4: Where there is only one study for a chosen combination, you should use the adjustment factor shown with caution. Where there is more than one study, use the overall factor [3] shown in blue at the foot of the final column.
If you have your own co-location study then see footnote [4]. If uncertain what to do then contact the Local Air Quality Management Helpdesk at LAQMHelpdesk@bureauveritas.com or 0800 0327953

Analysed By [1]	Method	Year	Site Type	Local Authority	Length of Study (months)	Diffusion Tube Mean Conc. (Dm) (µg/m³)	Automatic Monitor Mean Conc. (Cm) (µg/m³)	Bias (B)	Tube Precision [4]	Bias Adjustment Factor (A) (Cm/Dm)
Gradko	20% TEA in water	2019	R	Dudley MBC	12	33	32	4.5%	G	**0.96**
Gradko	20% TEA in water	2019	R	Dudley MBC	12	44	42	3.9%	G	**0.96**
Gradko	20% TEA in water	2019	UB	Dudley MBC	12	23	19	19.8%	G	**0.83**
Gradko	20% TEA in water	2019	UB	Eastleigh Borough Council	12	24	26	-7.1%	G	**1.08**
Gradko	20% TEA in water	2019	R	Gateshead Council	12	34	27	23.7%	P	**0.81**
Gradko	20% TEA in water	2019	R	Gateshead Council	11	40	44	-10.5%	G	**1.12**
Gradko	20% TEA in water	2019	R	Gateshead Council	10	32	34	-7.2%	G	**1.08**
Gradko	20% TEA in water	2019	R	Gateshead Council	12	30	25	18.1%	G	**0.85**
Gradko	20% TEA in water	2019	R	Thurrock Borough Council	12	29	24	21.6%	G	**0.82**
Gradko	20% TEA in water	2019	R	Brighton & Hove City Council	11	45	46	-1.3%	G	**1.01**
Gradko	20% TEA in water	2019	R	Belfast City Council	12	40	33	21.0%	G	**0.83**
Gradko	20% TEA in water	2019	R	Belfast City Council	12	44	45	-2.2%	G	**1.02**
Gradko	20% TEA in water	2019	R	Belfast City Council	12	28	26	5.4%	G	**0.95**
Gradko	20% TEA in water	2019	UB	Southampton City Council	12	30	28	8.6%	G	**0.92**
Gradko	20% TEA in water	2019	UB	Liverpool City Council	12	20	19	1.7%	G	**0.98**
Gradko	20% TEA in water	2019	R	Ards and North Down Borough Council	12	33	25	31.1%	G	**0.76**
Gradko	20% TEA in water	2019	R	Eastleigh Borough Council	12	25	26	-3.3%	G	**1.03**
Gradko	20% TEA in water	2019	R	Lisburn & Castlereagh City Council	12	28	22	28.3%	G	**0.78**
Gradko	20% TEA in water	2019		**Overall Factor [3] (30 studies)**				Use		**0.92**

Method used to distance calculate in accordance to current guidance

The following tool was used to distance calculate NO_2 levels at the Newtownbreda Road and Blaris Road sites at relevant exposure

https://laqm.defra.gov.uk/tools-monitoring-data/no2-falloff.html

Newtownbreda Road

BUREAU VERITAS

Enter data into the pink cells

Step 1	How far from the KERB was your measurement made (in metres)?	2.5	metres
Step 2	How far from the KERB is your receptor (in metres)?	7	metres
Step 3	What is the local annual mean background NO_2 concentration (in µg/m³)?	14	µg/m³
Step 4	What is your measured annual mean NO_2 concentration (in µg/m³)?	37	µg/m³
Result	The predicted annual mean NO_2 concentration (in µg/m³) at your receptor	31.1	µg/m³

The following method was used to annualise the data for the NO_2 tube 13a at Blaris Road façade as only six months data was available

Boxes 7.9 and 7.10 of LAQM.TG16

(Am)B1=17

D1=33

(Pm)B1=18

Am/Pm=0.944

=33 x 0.944 = 31