



Comhairle Ceantair  
**an Iúir, Mhúrn  
agus an Dúin**  
**Newry, Mourne  
and Down**  
District Council

## 2018 Updating and Screening Assessment for Newry, Mourne and Down District Council

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

December 2018

1.1.1

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## Executive Summary

Newry Mourne and Down District Council has completed this 2018 Updating and Screening Assessment in accordance with the provisions of the Environment (Northern Ireland) Order 2002 and the Northern Ireland Local Air Quality Management Policy Guidance document.

This 2018 Updating and Screening Assessment for Newry Mourne and Down District Council provides a review and assessment of all new or existing potential sources of air quality pollutants and a summary of air quality monitoring results for the calendar year 2017.

Newry Mourne and Down District Council has measured concentrations of NO<sub>2</sub> above the annual mean objective at Market Street Downpatrick. A detailed assessment for Market Street, Downpatrick will be carried out.

Five of the 27 NO<sub>2</sub> diffusion tubes located within Newry City Centre exceeded the annual mean objective for nitrogen dioxide (NO<sub>2</sub>) and monitoring at all sites will continue into 2019 to assess if a Detailed assessment will be necessary on the AQMA.

The PM<sub>10</sub> daily mean objective was not exceeded within Canal Street, Newry. This location is within an existing Air Quality Management Area - Newry (Canal Street) Air Quality Management Order 2013. Monitoring at this site will continue into 2019 to assess if a Detailed assessment will be necessary on the AQMA.

This report has not identified any new sources with relevant exposure therefore it is not considered necessary to proceed to a Detailed Assessment based on potential sources.

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## **2 Introduction**

### **2.1 Description of Local Authority Area**

Newry, Mourne and Down District Council area has a population of approximately 171,500. The area lies on the east coast of Ireland with its southern boundary forming part of the border between Northern Ireland and the Republic of Ireland. The district's main settlement is Newry city which has a thriving commercial sector and with its proximity to the border with the Republic of Ireland it experiences fluctuations in cross border trade depending on the exchange rate between sterling and the euro. When the exchange rate is favourable shoppers from the Republic of Ireland visit Newry City with resultant increases in traffic volumes.

The area has two declared AQMAs Newry (Urban Centre) Air Quality Management Area (AQMA) (Annual mean objective for NO<sub>2</sub>) and Newry (Canal St) Air Quality Management Area (24 hour mean objective for PM<sub>10</sub>).

In 2017 there were 2 air quality monitoring stations in operation, 1 in Newry city area and 1 in Downpatrick. The AQMS in Newry monitored PM<sub>10</sub> and NO<sub>2</sub> and the Downpatrick station monitored NO<sub>2</sub>.

### **2.2 Purpose of Report**

This report fulfils the requirements of the Local Air Quality Management process as set out in the Environment (Northern Ireland) Order 2002, the Air Quality Strategy for England, Scotland, Wales and Northern Ireland 2007 and the relevant Policy and Technical Guidance documents. The LAQM process places an obligation on all local authorities to regularly review and assess air quality in their areas, and to determine whether or not the air quality objectives are likely to be achieved. Where 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.

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

## 2.3 Air Quality Objectives

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

**Table 2.1 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 $\mu\text{g}/\text{m}^3$	Running annual mean	31.12.2003
	3.25 $\mu\text{g}/\text{m}^3$	Running annual mean	31.12.2010
1,3-Butadiene	2.25 $\mu\text{g}/\text{m}^3$	Running annual mean	31.12.2003
Carbon monoxide	10.0 $\text{mg}/\text{m}^3$	Running 8-hour mean	31.12.2003
Lead	0.5 $\mu\text{g}/\text{m}^3$	Annual mean	31.12.2004
	0.25 $\mu\text{g}/\text{m}^3$	Annual mean	31.12.2008
Nitrogen dioxide	200 $\mu\text{g}/\text{m}^3$ not to be exceeded more than 18 times a year	1-hour mean	31.12.2005
	40 $\mu\text{g}/\text{m}^3$	Annual mean	31.12.2005
Particles ( $\text{PM}_{10}$ ) (gravimetric)	50 $\mu\text{g}/\text{m}^3$ , not to be exceeded more than 35 times a year	24-hour mean	31.12.2004



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

## 2.4 Summary of Previous Review and Assessments

<b>Title of Work</b>	<b>Summary of Report</b>
<b>USA (2004)</b>	Potential exceedances of the <b>NO<sub>2</sub></b> and <b>PM<sub>10</sub></b> AQS objectives in the vicinity of several roads in Newry City centre
<b>Detailed Assessment (2005)</b>	Concluded a risk of exceeding air quality objectives for <b>NO<sub>2</sub></b> and <b>PM<sub>10</sub></b> in Newry city centre. There was a high degree of uncertainty in the modelling results. Following discussions with the Environment and Heritage Service of the Department of Environment (NI), NMDC resolved to declare five AQMAs for the annual mean <b>NO<sub>2</sub></b> objective and the 24-hour <b>PM<sub>10</sub></b> objective
<b>USA (2006)</b>	Concluded that the risk of the air quality objectives for <b>NO<sub>2</sub></b> being exceeded outside existing AQMAs was negligible for all sources. In addition, the USA indicated that there was little likelihood of the 2004 air quality objectives for <b>PM<sub>10</sub></b> being exceeded.
<b>Further Assessment (2007)</b>	The results showed that <b>NO<sub>2</sub></b> annual average concentrations within the AQMA were still likely to exceed the AQS objective along Canal Street, Water Street and Kilmorey Street in Newry City.

	Given the uncertainties in modelling <b>PM<sub>10</sub></b> , the focus of the further assessment and source apportionment study was therefore focused on <b>NO<sub>x</sub></b> and <b>NO<sub>2</sub></b>
<b>Further Modelling (2009)</b>	<p>The model performance was improved from 2005 results.</p> <p>The results showed that <b>NO<sub>2</sub></b> annual average concentrations within the AQMA were still likely to exceed the AQS objective along Canal Street, Water Street, Kilmorey Street, and a newly identified street, Sandy Street in Newry City.</p> <p>The model indicated that there was little likelihood of the 2004 air quality objectives for <b>PM<sub>10</sub></b> being exceeded within Newry City.</p> <p>The Council resolved to revoke existing 5 AQMA's and to declare one AQMA for the annual mean <b>NO<sub>2</sub></b> objective covering all areas of possible exceedance - Newry (Urban Centre) AQM.</p>
<b>USA (2009)</b>	<p>As no new or significantly changed sources of pollutants were identified a further detailed assessment was not required.</p> <p>Newry and Mourne Council finalised the Action Plan for the Newry (Urban Centre) AQMA.</p>
<b>Progress Report 2010</b>	<p>The <b>PM<sub>10</sub></b> AQ Objective was not breached during 2009. A new site was established at Canal Street in June 2009. This site recorded 21 exceedances of the daily mean objective for <b>PM<sub>10</sub></b>. The street had formally been declared an AQMA for <b>PM<sub>10</sub></b> but this was revoked following further dispersion modelling results (Further Assessment 2009), which indicated that exceedance of <b>PM<sub>10</sub></b> objective was not likely within Newry City. Monitoring of <b>PM<sub>10</sub></b> has continued at this location. 2009 monitoring data found that a</p>

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	<p>number of sites of relevant exposure breached the annual mean objective for nitrogen dioxide. All of these sites were within the existing AQMA.</p>
<b>Progress Report 2011</b>	<p>2010 monitoring data identified exceedances of the annual mean objective for nitrogen dioxide (NO<sub>2</sub>) (40µg/m<sup>3</sup>) for a number of streets within Newry City. These streets were within an existing Air Quality Management Area - Newry (Urban Centre) Air Quality Management Area for which there is an agreed Action Plan.</p> <p>Air quality monitoring results for NO<sub>2</sub> and PM<sub>10</sub> for 2010 were elevated from 2009 and it was argued that these increases were due mainly to the prevailing weather conditions during 2010 rather than as a result of new or increased sources of pollutants.</p> <p>During 2010 air quality monitoring in Canal Street, Newry, monitored exceedances for the 1-hour mean objective (200µg/m<sup>3</sup>) for NO<sub>2</sub> at and for the 24-hour mean objective (50 mgm<sup>-3</sup>) for PM<sub>10</sub>. It was concluded that a Detailed Assessment for the 1-hour mean objective for NO<sub>2</sub> and the 24-hour mean objective for PM<sub>10</sub> at Canal Street, Newry was required.</p>
<b>Detailed Assessment 2011</b>	<p>As a result of the findings of Progress Report 2010 a Detailed Assessment was carried out to determine if risk of 1-hour mean objective for NO<sub>2</sub> and daily mean objective for PM<sub>10</sub> being exceed for Canal Street, Newry. Findings of the assessment did not establish a risk for 1-hour mean objective for NO<sub>2</sub> being exceeded but there was a risk identified for the daily mean objective for PM<sub>10</sub> being exceeded for</p>

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	Canal Street. It was recommended that an AQMA be declared in Canal Street for the daily mean objective for PM <sub>10</sub> .
<b>Progress Report 2013</b>	<p>The 2013 report identified the following issues;</p> <p>Exceedance in Annual Mean objective for nitrogen dioxide (NO<sub>2</sub>) (40µg/m<sup>3</sup>) at Trevor Hill AQMS and Canal St AQMS. 15 of the 26 diffusion tubes located within Newry City Centre exceeded the annual mean objective for nitrogen dioxide (NO<sub>2</sub>) (40µg/m<sup>3</sup>).</p> <p>Exceedance of hourly mean objective for (NO<sub>2</sub>) (200µg/m<sup>3</sup>) at Canal St AQMS, at three diffusion sites in Newry Urban AQMA,(Canal Street and Kilmorey Street) the annual mean NO<sub>2</sub> level recorded by diffusion tubes exceeded 60 µg/m<sup>3</sup>.</p> <p>No exceedance of annual mean or daily mean objective for PM<sub>10</sub>.</p> <p>These results were in contradiction to the conclusions drawn from the Detailed Assessment carried out in 2012 where it was concluded that there was no risk of the 1-hour mean objective for NO<sub>2</sub> being exceeded in Newry AQMA but there was a risk identified for the daily mean objective for PM<sub>10</sub> being exceeded in Canal Street.</p> <p>It was not proposed to make any declaration in relation to a likelihood of an exceedance of the hourly mean objective for (NO<sub>2</sub>) (200µg/m<sup>3</sup>) in Canal Street and Kilmorey Street but monitoring at both these locations has continued.</p>
<b>Further Assessment 2014</b>	A further assessment of PM <sub>10</sub> concentrations within the Canal Street Air Quality Management Area (AQMA) was undertaken in early 2014. The further

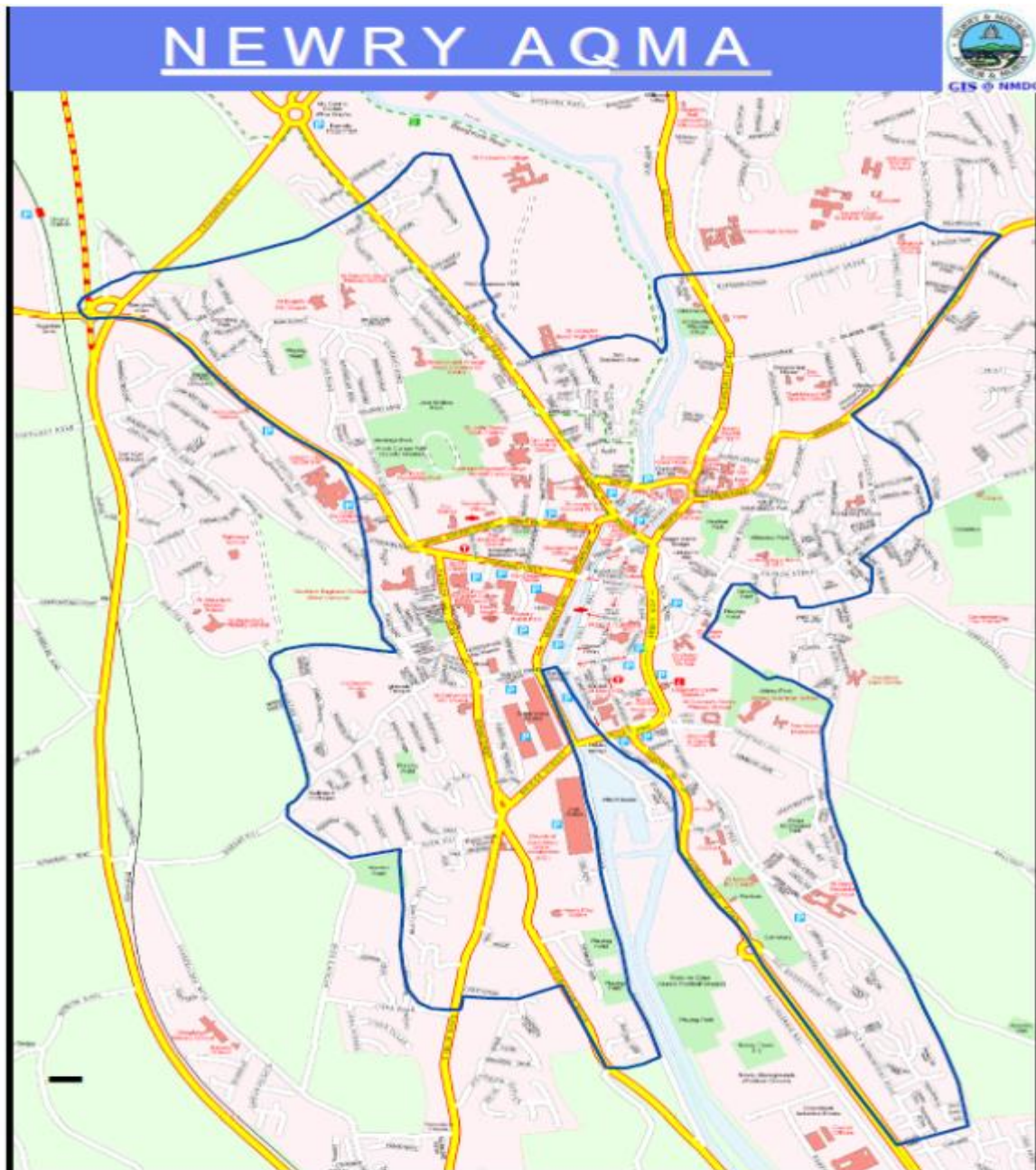
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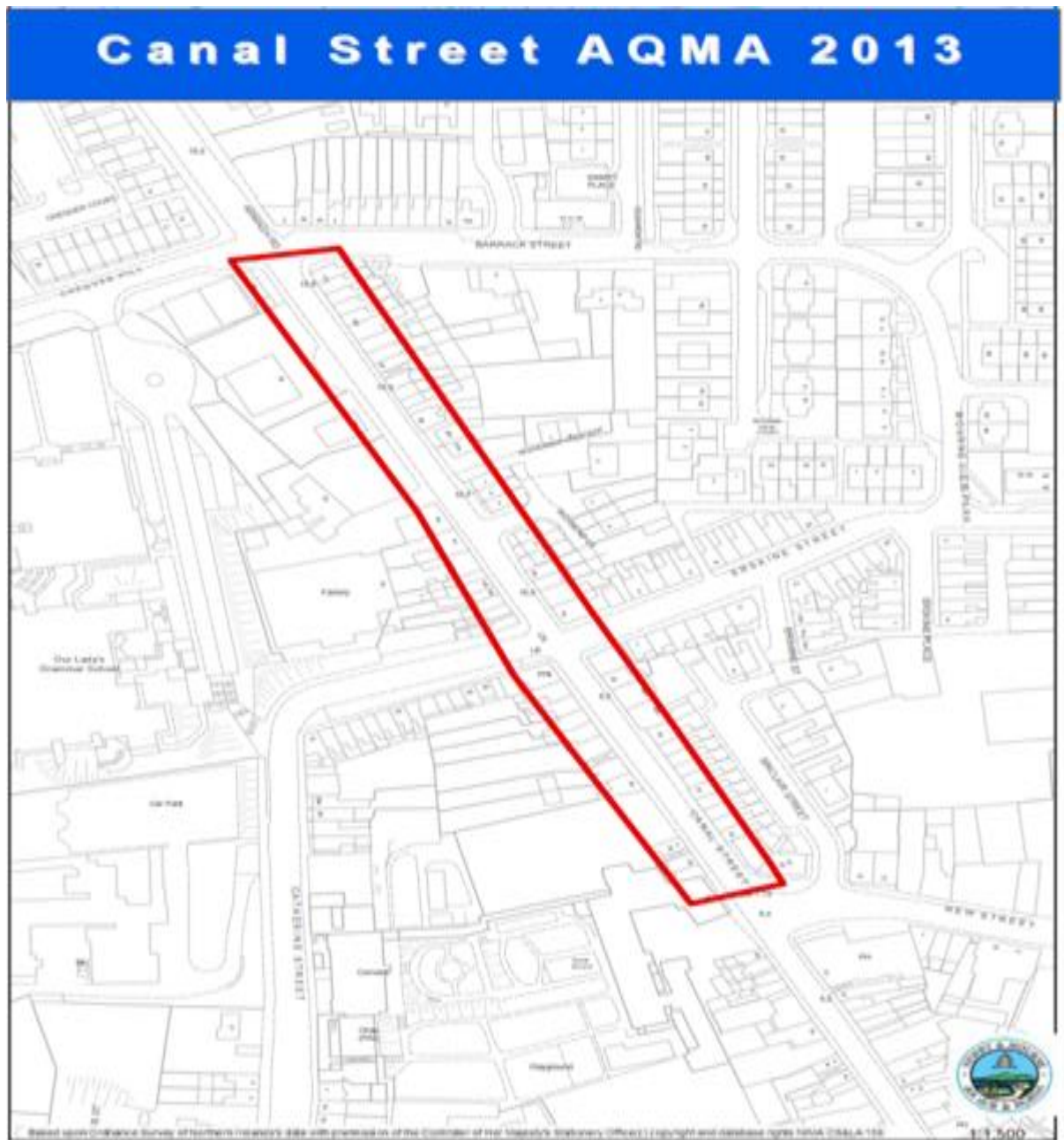
	<p>assessment involved a review of air quality monitoring data, dispersion modeling for road and domestic chimney sources and source apportionment. The assessment found that the PM<sub>10</sub> objective was exceeded in both 2012 and 2013 and recommended that the AQMA should remain and monitoring continue. Source apportionment of local emission found that ambient background concentrations contribute the largest proportion to the overall concentration followed by emissions from cars on local roads</p>
<b>Progress Report 2014</b>	<p>The 2014 Progress Report for the former Newry and Mourne District Council which contained 2013 monitoring data has identified the following:</p> <p>Exceedance of daily mean objective for PM<sub>10</sub> at Canal Street AQMS.</p> <p>Exceedance in Annual Mean objective for nitrogen dioxide (NO<sub>2</sub>) (40µg/m<sup>3</sup>) at Trevor Hill AQMS and Canal St AQMS. 10 of the 28 diffusion tubes located within Newry City Centre exceeded the annual mean objective for nitrogen dioxide (NO<sub>2</sub>) (40µg/m<sup>3</sup>).</p> <p>Exceedance of hourly mean objective for (NO<sub>2</sub>) (200µg/m<sup>3</sup>) at Trevor Hill AQMS and Canal St AQMS.</p> <p>A diffusion tube site at Canal St in Newry Urban AQMA recorded an annual mean NO<sub>2</sub> level of 60 µg/m<sup>3</sup> which is an indicator that the hourly mean objective (200µg/m<sup>3</sup>) may be exceeded.</p> <p>No exceedance of annual mean objective for PM<sub>10</sub>.</p>
<b>Progress Report 2017</b>	<p>The 2017 Progress Report which contained 2016 monitoring data identified the following:</p>

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	<ul style="list-style-type: none"><li>• No exceedance of annual mean objective for PM<sub>10</sub>.</li><li>• No exceedance of daily mean objective for PM<sub>10</sub>.</li><li>• 9 of the 24 diffusion tubes located within Newry City Centre exceeded the annual mean objective for nitrogen dioxide (NO<sub>2</sub>) (40µg/m<sup>3</sup>).</li><li>• Exceedance of the annual mean objective for NO<sub>2</sub> at Market Street automatic station.</li><li>• Council will proceed to a detailed assessment for the Market Street location.</li></ul>
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Figure 2.1 Map of AQMA Boundaries





**Figure 2.2 Map showing boundary of Newry (Canal Street) AQMA**



## 3 New Monitoring Data

### 3.1 Summary of Monitoring Undertaken

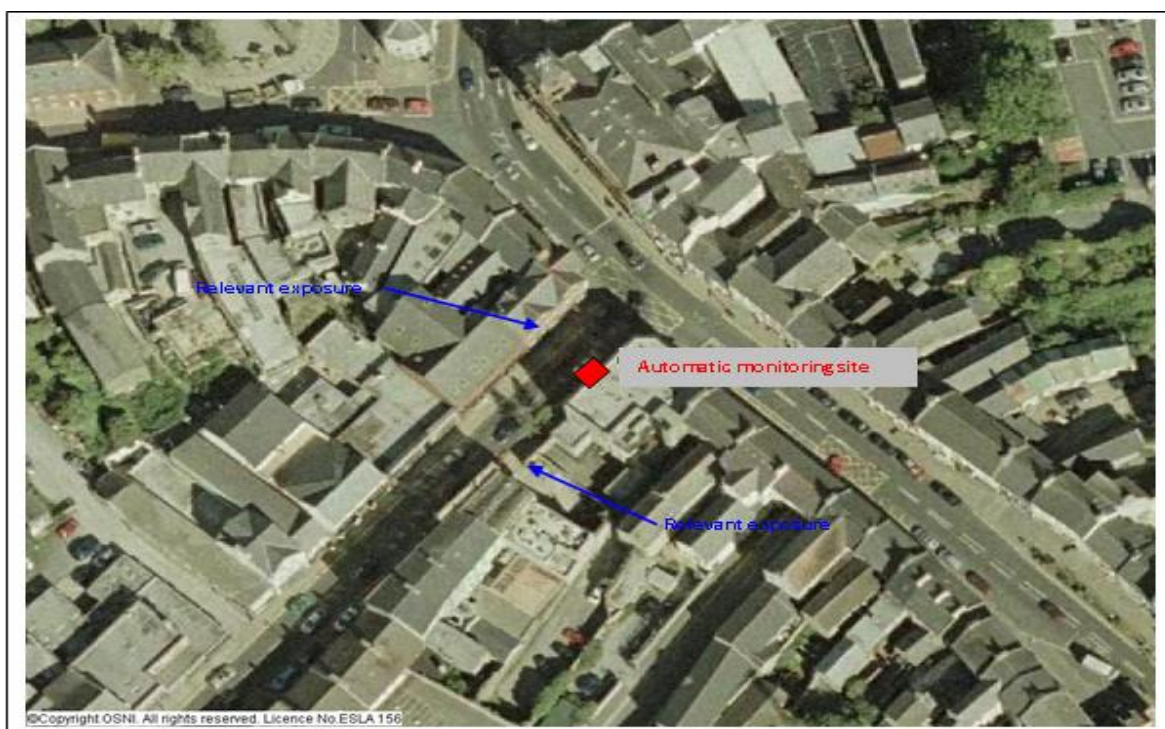
#### 3.1.1 Automatic Monitoring Sites

Table 3.1 provides details of the automatic monitoring sites that operated within Newry, Mourne and Down District Council area during the calendar year 2017.

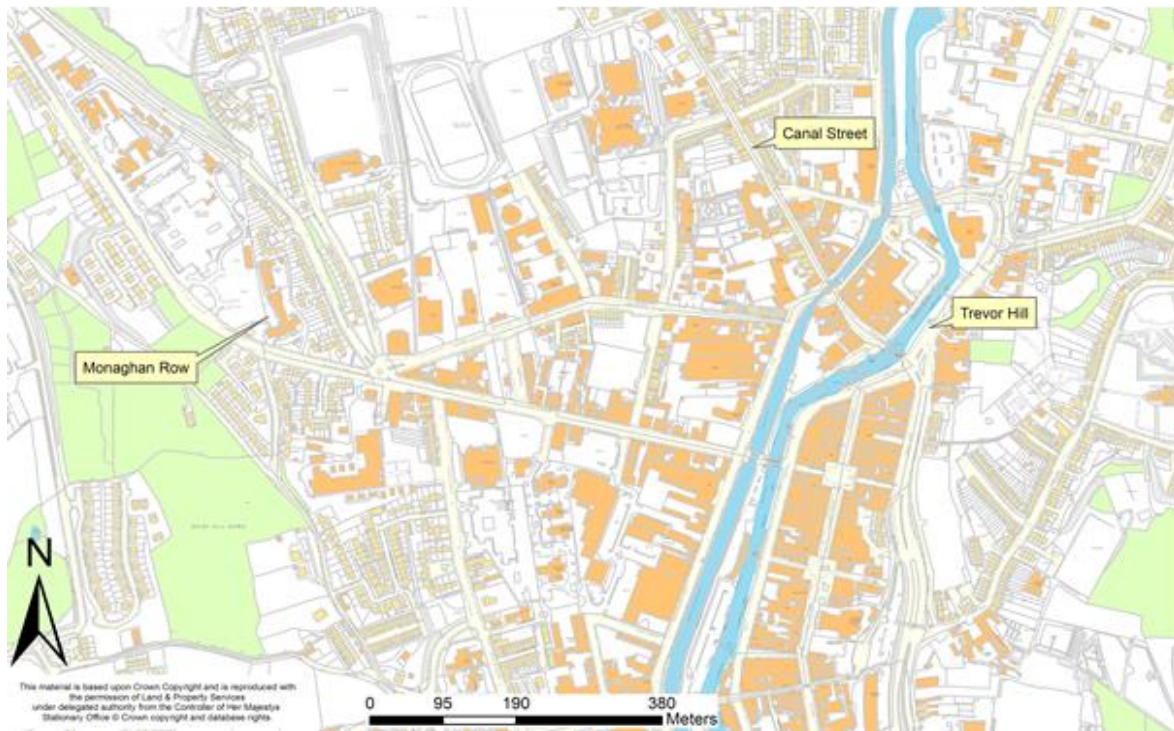
The automatic monitoring stations within the district are National Environmental Technology Centre (NETCEN) type tested and approved analysers, which contain air-conditioned units to maintain the correct operating temperature. In 2017 Newry, Mourne and Down District Council had a QA/QC contract with Ricardo-AEA and Data Management contract with AQDM. QA/QC audits have been completed on the automatic monitoring equipment currently located within the Council area.

All data from each station is downloaded daily by remote communication via modem to Council Offices.

**Figure 3.1 Maps of Automatic Monitoring Sites-  
Downpatrick**



**Newry automatic monitoring stations**



Note-only Canal Street is still operating.

**Table 3.1 Details of Automatic Monitoring Sites**

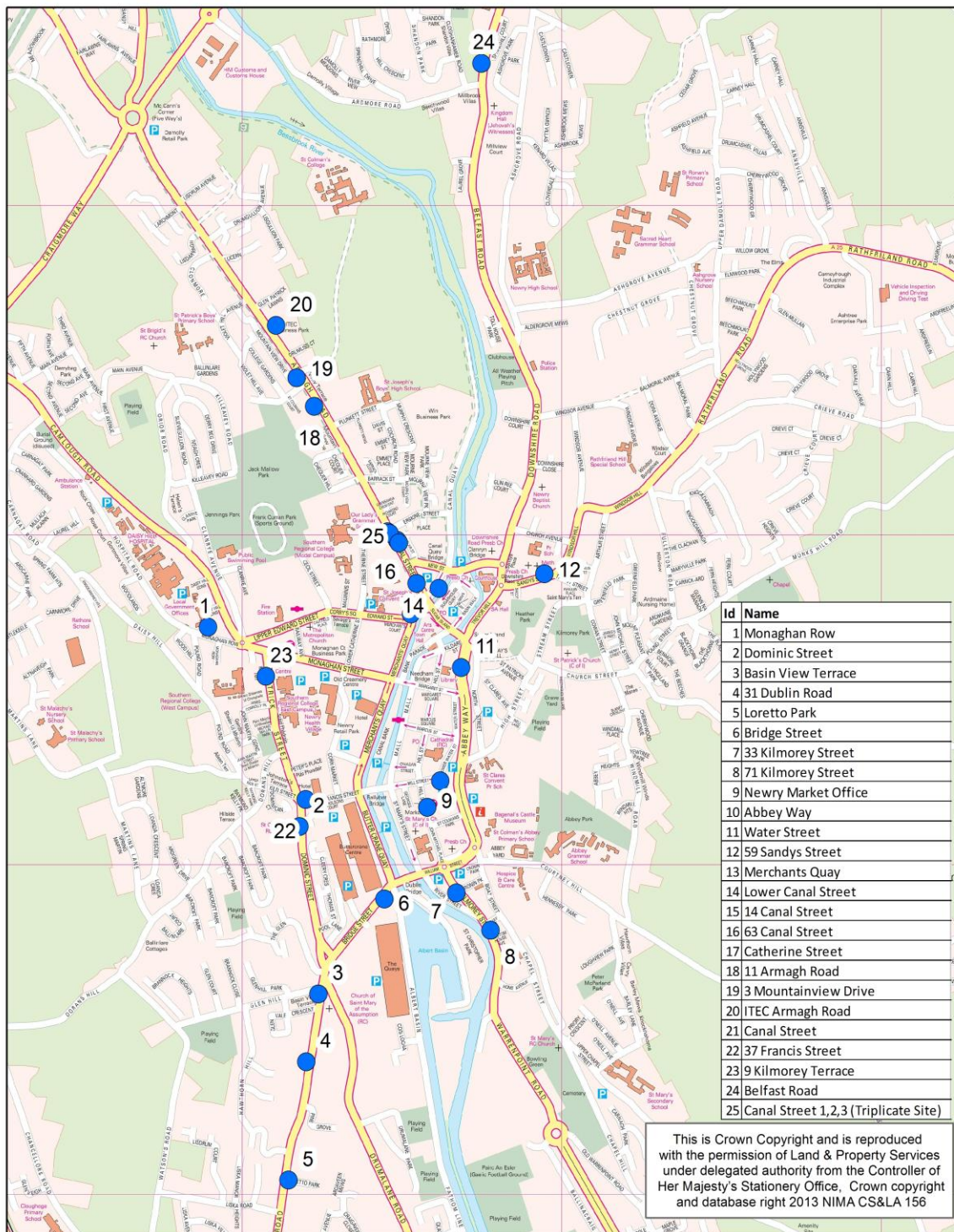
<b>Site Name</b>	<b>Site Type</b>	<b>X OS Grid Ref</b>	<b>Y OS Grid Ref</b>	<b>Pollutants Monitored</b>	<b>In AQMA?</b>	<b>Monitoring Technique</b>	<b>Relevant Exposure? (Y/N with distance (m) to relevant exposure)</b>	<b>Distance to kerb of nearest road (N/A if not applicable)</b>	<b>Does this location represent worst-case exposure?</b>
Canal Street, Newry	Roadside	308485	326976	PM <sub>10</sub> NO <sub>2</sub>	Y	N/A	Y (<1M)	3M	Y
Market Street, Downpatrick	Roadside	348655	344596	NO <sub>2</sub>	N	N/A	Y (10M)	1.5M	Y

### **3.1.2 Non-Automatic Monitoring Sites**

In the calendar year 2017 Newry Mourne and Down District Council deployed 27 NO<sub>2</sub> diffusion tubes per month at 25 sites within its District. One site at Canal Street was a triplicate site. The NO<sub>2</sub> diffusion tubes used were prepared and analysed by Environmental Scientifics Group using the 50% TEA in acetone method. The laboratory methods are currently UKAS accredited.



Figure 3.2 Map of Non-Automatic Monitoring sites



Newry AQMA



0 300 600 m

**Table 3.2 Details of Non-Automatic Monitoring Sites**

Site Name	Site Type	X OS Grid Ref	Y OS Grid Ref	Pollutants Monitored	In AQMA?	Is monitoring collocated with a Continuous Analyser (Y/N)	Relevant Exposure? (Y/N with distance (m) to relevant exposure)	Distance to kerb of nearest road (N/A if not applicable)	Does this location represent worst-case exposure?
Monaghan Row	Urban background	307851	326751	NO <sub>2</sub>	Y	N	N	50m	Y
Lower Canal Street	Roadside	308562	326481	NO <sub>2</sub>	Y	N	Y	1m	Y
14 Canal Street	Roadside	308538	326864	NO <sub>2</sub>	Y	N	Y	2m	Y
Canal Street Station 1,2,3	Roadside	308697	326715	NO <sub>2</sub>	Y	Y	Y	2m	Y
63 Canal Street	Roadside	308483	326984	NO <sub>2</sub>	Y	N	Y	2m	Y
Canal Street	Roadside	308463	326998	NO <sub>2</sub>	Y	N	Y	1m	Y
Catherine Street	Roadside	308454	327009	NO <sub>2</sub>	Y	N	Y	2m	Y
Southern ITEC	Roadside	308172	327586	NO <sub>2</sub>	Y	N	Y	2m	Y
2 Mountain View Drive	Roadside	308650	327479	NO <sub>2</sub>	Y	N	Y	2m	Y
59 Sandy Street	Roadside	308929	326861	NO <sub>2</sub>	Y	N	Y	1m	Y
Abbey Way	Roadside	308655	326340	NO <sub>2</sub>	Y	N	Y	2m	Y
Water Street	Roadside	308686	326602	NO <sub>2</sub>	Y	N	Y	1m	Y
Market Office	Urban Background	308539	326125	NO <sub>2</sub>	Y	N	Y	25m	Y
33 Kilmorey Street	Roadside	308668	325916	NO <sub>2</sub>	Y	N	Y	1m	Y
71 Kilmorey Street	Roadside	308775	325803	NO <sub>2</sub>	Y	N	Y	1m	Y
4 Bridge Street	Roadside	308443	325896	NO <sub>2</sub>	Y	N	Y	2m	Y
Loretto Park	Roadside	308188	325037	NO <sub>2</sub>	Y	N	Y	2m	Y
Basin View Terrace	Roadside	308237	325606	NO <sub>2</sub>	Y	N	Y	1m	Y
Dominic Street	Roadside	308190	326128	NO <sub>2</sub>	Y	N	Y	2m	Y
11 Armagh Road	Roadside	308278	327324	NO <sub>2</sub>	Y	N	Y	3m	Y
21 Merchant Quay	Roadside	308487	326643	NO <sub>2</sub>	Y	N	Y	3m	Y
31 Dublin Road	Roadside	308209	325408	NO <sub>2</sub>	Y	N	Y	1m	Y
37 Francis Street	Roadside	308205	326179	NO <sub>2</sub>	Y	N	Y	2m	Y
9 Kilmorey Terrace	Roadside	308073	326569	NO <sub>2</sub>	Y	N	Y	2m	Y
Belfast Road	Roadside	308877	327143	NO <sub>2</sub>	Y	N	Y	5m	Y

## 3.2 Comparison of Monitoring Results with Air Quality Objectives

The existing monitoring network consists of two continuous monitoring stations at Canal Street, Newry and Market Street, Downpatrick and 27 NO<sub>2</sub> diffusion tubes at 25 sites across Newry city centre.

### 3.2.1 Nitrogen Dioxide

#### Automatic Monitoring Data

In 2017 the Council monitored NO<sub>2</sub> at two sites, Market Street, Downpatrick and Canal Street, Newry.

**Table 3.3 Results of Automatic Monitoring of Nitrogen Dioxide: Comparison with Annual Mean Objective**

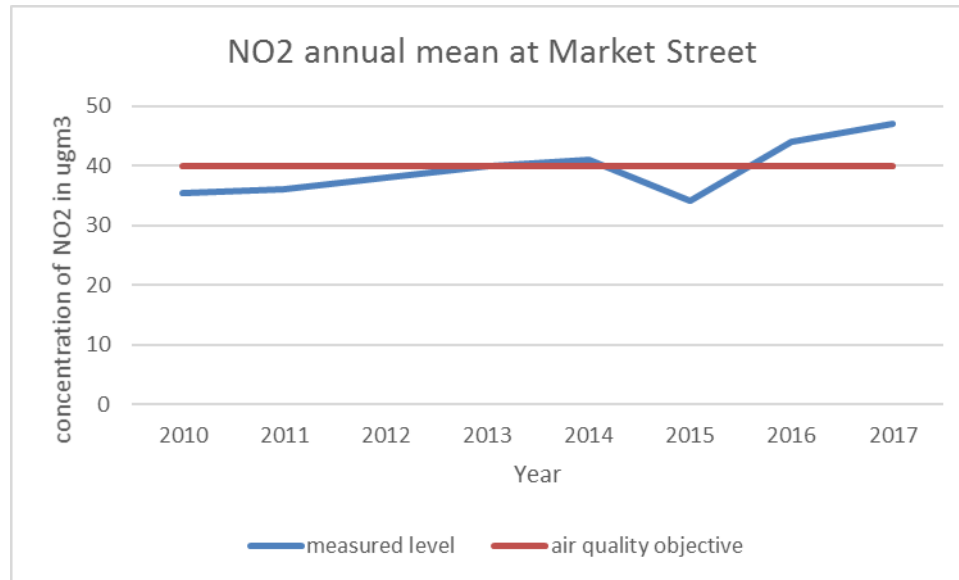
Site ID	Site Type	Within AQMA?	Valid Data Capture for period of monitoring % <sup>a</sup>	Valid Data Capture 2017 % <sup>b</sup>	Annual Mean Concentration µg/m <sup>3</sup>				
					2013* <sup>c</sup>	2014* <sup>c</sup>	2015* <sup>c</sup>	2016* <sup>c</sup>	2017 <sup>c</sup>
Canal Street, Newry	Roadside	YES	n/a	66	47	-	-	-	33
Market Street, Downpatrick	Roadside	NO	n/a	99	40	<b>41</b>	34	<b>44</b>	<b>47</b>

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

<sup>b</sup> 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%).

<sup>c</sup> Means should be "annualised" as per Boxes 7.9 and 7.10 of LAQM.TG16, if monitoring was not carried out for the full year.

\*Annual mean concentrations for previous years are optional.

**Figure 3.3 Trends in Annual Mean Nitrogen Dioxide Concentrations measures at Automatic Monitoring Sites**

The annual mean concentration of NO<sub>2</sub> from 2010-2017 as displayed in Figure 3.3 shows an upward trend in levels culminating in breaches of the air quality objective in 2016 and 2017. Where it has been identified that an air quality objective will be exceeded at a location with relevant public exposure (as in this case), the Council is required to undertake a Detailed Assessment following the guidance set out in the Technical Guidance document. Where a likely exceedance is identified, the assessment should be sufficiently detailed to determine both its magnitude and geographical extent. The Council will not declare an AQMA until a Detailed Assessment has been completed and submitted. For the purposes of this Detailed Assessment additional NO<sub>2</sub> diffusion tubes have been placed along Market Street, Irish Street, English Street and Church Street, Downpatrick from January 2018. At the end of 2018 a full year of monitoring will have occurred permitting a detailed assessment to be completed. It is important to recognise that the monthly NO<sub>2</sub> levels recorded by the automatic monitoring site in Market Street rose dramatically in November and December 2017. Although rises may be expected during this seasonal time it is now a possibility that the analyser was beginning to malfunction (this station required replacement in Spring 2018) and results impacted upon.



**Table 3.4 Results of Automatic Monitoring for Nitrogen Dioxide: Comparison with 1-hour mean Objective**

Site ID	Site Type	Within AQMA?	Valid Data Capture for period of monitoring % <sup>a</sup>	Valid Data Capture 2017 % <sup>b</sup>	Number of Exceedences of Hourly Mean (200 $\mu\text{g}/\text{m}^3$ )				
					2013* <sup>c</sup>	2014* <sup>c</sup>	2015* <sup>c</sup>	2016* <sup>c</sup>	2017 <sup>c</sup>
Market Street	Roadside	NO	N/A	99	1	0	0(117)	1	13
Canal Street	Roadside	Yes	N/A	66	29	-	-	-	0(147)

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

<sup>b</sup> 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%).

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

\*Number of exceedences for previous years are optional.

**Diffusion Tube Monitoring Data**

Type in bold demonstrates an exceedance of the NO<sub>2</sub> annual mean AQS objective of 40µg/m<sup>3</sup>. The full data set is included in Appendix B.

**Table 3.5 Results of Nitrogen Dioxide Diffusion Tubes in 2017**

Site ID	Location	Site Type	Within AQMA?	Triplicate or Collocated Tube	Data Capture 2017 (Number of Months)	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 = 0.77)
								2017 (µg/m <sup>3</sup> )
83610	Monaghan Row	Urban background	Y	N	12		N	12
84610	Lower Canal Street	Roadside	Y	N	12		N	32
87268	14 Canal Street	Roadside	Y	N	12		N	26
87241 87252 87253	Canal Street Station 1,2,3	Roadside	Y	Y	12		N	36
87242	63 Canal Street	Roadside	Y	N	12		N	36
84609	Canal Street	Roadside	Y	N	12		N	<b>55</b>
84611	Catherine Street	Roadside	Y	N	12		N	39
87313	Southern ITEC	Roadside	Y	N	11		N	24
87312	2 Mountain View Drive	Roadside	Y	N	12		N	15
84649	59 Sandy Street	Roadside	Y	N	12		N	<b>40</b>
87314	Abbey Way	Roadside	Y	N	12		N	20
82651	Water Street	Roadside	Y	N	11		N	<b>50</b>
87085	Market Office	Urban background	Y	N	12		N	18
85064	33 Kilmorey Street	Roadside	Y	N	12		N	<b>52</b>
87088	71 Kilmorey Street	Roadside	Y	N	12		N	<b>58</b>
87089	4 Bridge Street	Roadside	Y	N	12		N	30
87315	Loretto Park	Roadside	Y	N	12		N	12
85070	Basin View Terrace	Roadside	Y	N	12		N	34
85077	Dominic Street	Roadside	Y	N	12		N	32
87369	11 Armagh Road	Roadside	Y	N	12		N	39
87370	21 Merchant Quay	Roadside	Y	N	11		N	32
87371	31 Dublin Road	Roadside	Y	N	12		N	39
85076	37 Francis Street	Roadside	Y	N	12		N	35
87092	9 Kilmorey Terrace	Roadside	Y	N	12		N	30
87093	Belfast Road	Near road	Y	N	12		N	26

**Table 3.6 Results of Nitrogen Dioxide Diffusion Tubes 2017**

Site ID	Site Type	Within AQMA?	2017 (Bias Adjustment Factor =0.77)
83610	Urban background	Y	12
84610	Roadside	Y	32
87268	Roadside	Y	26
87241	Roadside	Y	36
87252			
87253			
87242	Roadside	Y	36
84609	Roadside	Y	<b>55</b>
84611	Roadside	Y	39
87313	Roadside	Y	24
87312	Roadside	Y	15
84649	Roadside	Y	<b>40</b>
87314	Roadside	Y	20
82651	Roadside	Y	<b>50</b>
87085	Urban background	Y	18
85064	Roadside	Y	<b>52</b>
87088	Roadside	Y	<b>58</b>
87089	Roadside	Y	30
87315	Roadside	Y	12
85070	Roadside	Y	34
85077	Roadside	Y	32
87369	Roadside	Y	39
87370	Roadside	Y	32
87371	Roadside	Y	39
85076	Roadside	Y	35
87092	Roadside	Y	30
87093	Near road	Y	26

**PM<sub>10</sub>**

In 2017 the Council monitored PM<sub>10</sub> at Canal Street using a R & P Teom instrument. This instrument changed on 8<sup>th</sup> March 2017 to a BAM PM<sub>10</sub> analyser.

**Table 3.7 Results of Automatic Monitoring of PM<sub>10</sub>: Comparison with Annual Mean Objective**

Site ID	Site Type	Within AQMA?	Valid Data Capture for monitoring Period % <sup>a</sup>	Valid Data Capture 2017 % <sup>b</sup>	Confirm Gravimetric Equivalent (Y or NA)	Annual Mean Concentration µg/m <sup>3</sup>				
						2013* <sup>c</sup>	2014* <sup>c</sup>	2015* <sup>c</sup>	2016* <sup>c</sup>	2017 <sup>c</sup>
Canal Street*	Roadside	Y		89	Y	29	33	28	29	19

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

<sup>b</sup> 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%).

<sup>c</sup> Means should be "annualised" as in Boxes 7.9 and 7.10 of LAQM.TG16, if monitoring was not carried out for the full year.

\* Optional

**Table 3.8 Results of Automatic Monitoring for PM<sub>10</sub>: Comparison with 24-hour mean Objective**

Site ID	Site Type	Within AQMA?	Valid Data Capture for monitoring Period % <sup>a</sup>	Valid Data Capture 2017 % <sup>b</sup>	Confirm Gravimetric Equivalent	Number of Exceedences of 24-Hour Mean (50 µg/m <sup>3</sup> )				
						2013* <sup>c</sup>	2014* <sup>c</sup>	2015* <sup>c</sup>	2016* <sup>c</sup>	2017 <sup>c</sup>
Canal Street	Roadside	Y		89	Y	42	48	32	23	6

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

<sup>b</sup> 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%).

<sup>c</sup> if data capture is less than 85%, include the 90.4<sup>th</sup> percentile of 24-hour means in brackets

\* Optional

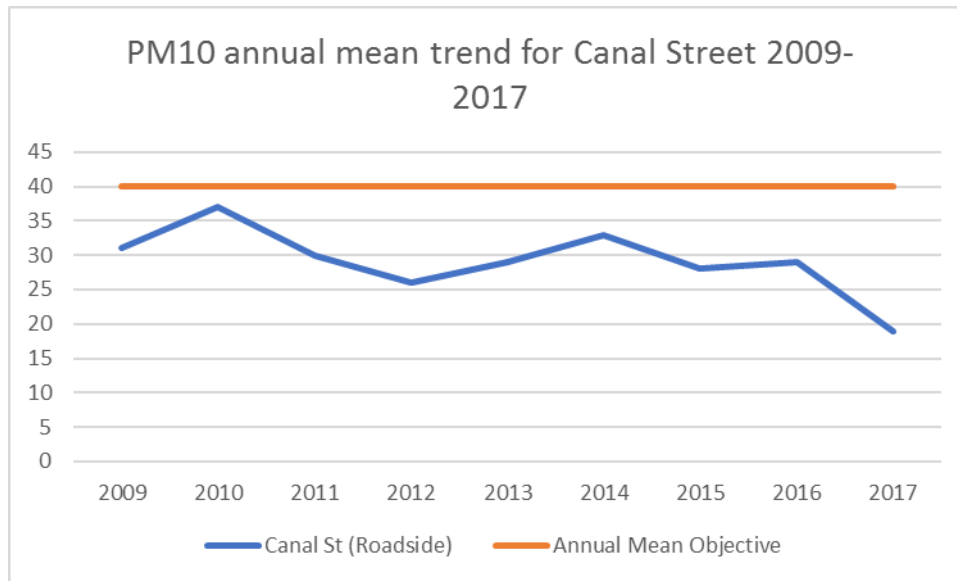
**Figure 3.4 Trends in Annual Mean PM<sub>10</sub> Concentrations**

Figure 3.4 above shows annual mean concentrations of PM<sub>10</sub> at Canal Street, Newry (Roadside Site) during the period 2009 to 2017. This is the only station now monitoring for PM<sub>10</sub> in Newry Mourne and Down District Council area. For reference purposes the annual mean objective of 40 µg/m<sup>3</sup> is also provided. Figure 2.5 demonstrates that there has been a general downward trend in PM<sub>10</sub> concentrations over the past number of years.

### 3.2.2 Sulphur Dioxide

In 2017 there was no monitoring of sulphur dioxide undertaken within the council area.

### 3.2.3 Benzene

In 2017 there was no monitoring of benzene undertaken within the council area.

### 3.2.4 Other pollutants monitored

In 2017 there were no other pollutants monitored within the council area.

### 3.2.5 Summary of Compliance with AQS Objectives

Newry, Mourne and Down District Council has measured concentrations of NO<sub>2</sub> above the annual mean objective at Market Street, Downpatrick outside of an AQMA and **will be submitting a Detailed Assessment**, for the area around Market Street Downpatrick.

Newry, Mourne and Down District Council 2017 monitoring data also identified the following:

- No exceedance of annual mean objective for PM<sub>10</sub>.
- No exceedance of daily mean objective for PM<sub>10</sub>.
- 5 of the 27 diffusion tubes located within Newry City Centre exceeded the annual mean objective for nitrogen dioxide (NO<sub>2</sub>) (40µg/m<sup>3</sup>).

## **4 Road Traffic Sources**

### **4.1 Narrow Congested Streets with Residential Properties Close to the Kerb**

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

### **4.2 Busy Streets Where People May Spend 1-hour or More Close to Traffic**

Newry, Mourne and Down District Council confirms that there are no new/newly identified busy streets where people may spend 1 hour or more close to traffic.

### **4.3 Roads with a High Flow of Buses and/or HGVs.**

Newry, Mourne and Down District Council confirms that there are no new/newly identified roads with high flows of buses/HDVs.

### **4.4 Junctions**

Newry, Mourne and Down District Council confirms that there are no new/newly identified busy junctions/busy roads.



## **4.5 New Roads Constructed or Proposed Since the Last Round of Review and Assessment**

Newry, Mourne and Down District Council confirms that there are no new/proposed roads.

## **4.6 Roads with Significantly Changed Traffic Flows**

Newry, Mourne and Down District Council confirms that there are no new/newly identified roads with significantly changed traffic flows.

## **4.7 Bus and Coach Stations**

Newry, Mourne and Down District Council confirms that there are no relevant bus stations in the Local Authority area.

## **5 Other Transport Sources**

### **5.1 Airports**

Newry, Mourne and Down District Council confirms that there are no airports in the Local Authority area.

### **5.2 Railways (Diesel and Steam Trains)**

#### **5.2.1 Stationary Trains**

Newry, Mourne and Down District Council confirms that there are no locations where diesel or steam trains are regularly stationary for periods of 15 minutes or more, with potential for relevant exposure within 15m.

#### **5.2.2 Moving Trains**

Newry, Mourne and Down District Council confirms that there are no locations with a large number of movements of diesel locomotives, and potential long-term relevant exposure within 30m.

### **5.3 Ports (Shipping)**

Newry, Mourne and Down district Council confirms that there are no ports or shipping that meet the specified criteria within the Local Authority area.

## **6 Industrial Sources**

### **6.1 Industrial Installations**

#### **6.1.1 New or Proposed Installations for which an Air Quality Assessment has been Carried Out**

Newry, Mourne and Down District Council confirms that there are no new or proposed industrial installations for which planning approval has been granted within its area or nearby in a neighbouring authority.

#### **6.1.2 Existing Installations where Emissions have Increased Substantially or New Relevant Exposure has been Introduced**

Newry, Mourne and Down District Council confirms that there are no industrial installations with substantially increased emissions or new relevant exposure in their vicinity within its area or nearby in a neighbouring authority.

#### **6.1.3 New or Significantly Changed Installations with No Previous Air Quality Assessment**

Newry, Mourne and Down District Council confirms that there are no new or proposed industrial installations for which planning approval has been granted within its area or nearby in a neighbouring authority.

## 6.2 Major Fuel (Petrol) Storage Depots

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

There are major fuel (petrol) storage depots within the Local Authority area, but these have been considered in previous reports.

## 6.3 Petrol Stations

Newry, Mourne and Down District Council confirms that there are no petrol stations meeting the specified criteria.

## 6.4 Poultry Farms

Newry, Mourne and Down District Council confirms that there are no poultry farms meeting the specified criteria.

## **7 Commercial and Domestic Sources**

### **7.1 Biomass Combustion – Individual Installations**

Newry, Mourne and Down District Council confirms that there are no biomass combustion plant in the Local Authority area.

### **7.2 Biomass Combustion – Combined Impacts**

Newry, Mourne and Down District Council confirms that there are no biomass combustion plants in the Local Authority area.

### **7.3 Domestic Solid-Fuel Burning**

Newry, Mourne and Down District Council confirms that there are no areas of significant domestic fuel use in the Local Authority area since the last Progress Report.

## **8 Fugitive or Uncontrolled Sources**

Newry, Mourne and Down District Council confirms that there are no potential sources of fugitive particulate matter emissions in the Local Authority area.

## **9 Conclusions and Proposed Actions**

### **9.1 Conclusions from New Monitoring Data**

Newry, Mourne and Down District Council has measured concentrations of NO<sub>2</sub> above the annual mean objective at Market Street, Downpatrick outside of an AQMA and will be submitting a Detailed Assessment, for the area around Market Street Downpatrick. Newry, Mourne and Down District Council 2017 monitoring data also identified the following:

- No exceedance of annual mean objective for PM<sub>10</sub>.
- No exceedance of daily mean objective for PM<sub>10</sub>.
- 5 of the 27 diffusion tubes located within Newry City Centre exceeded the annual mean objective for nitrogen dioxide (NO<sub>2</sub>) (40µg/m<sup>3</sup>).

### **9.2 Conclusions from Assessment of Sources**

There have been no new industrial installations or new commercial or fugitive source emissions within the Newry, Mourne and Down District Council area in 2017.

Newry City and Downpatrick have smoke control areas. All new developments within these areas are required to comply with the restrictions within the smoke control areas in relation to the use of authorised fuels.

### **9.3 Proposed Actions**

The 2018 Updating and Screening Assessment has identified a need to produce a detailed assessment for NO<sub>2</sub> at the Market Street/Irish Street junction in Downpatrick.

The automatic monitoring station is sited in accordance with guidance and at relevant exposure. Diffusion tubes have been installed in 2018 on Market Street, Irish Street and Church Street, Downpatrick to assist in the detailed assessment. The 2017 monitoring data for Nitrogen Dioxide from the diffusion tubes located within Newry City Centre indicate exceedances of the annual mean objective at some locations and hence the need to retain Newry (Urban Centre) AQMA. The Council will

## **Newry, Mourne and Down District Council**

continue to assess this pollutant now that the NO<sub>2</sub> analyser at Canal Street is monitoring again.

The 2017 monitoring data for PM<sub>10</sub> from the AQMS shows no exceedances of the daily mean objective but it would be prudent to retain Newry (Canal Street) AQMA 2013. After the next Progress Report in 2019 the Council may progress to a Detailed Assessment for the AQMAs.



## 10 References

Local Air Quality Management Technical Guidance – LAQM.TG(09)

Local Authority Air Quality Support website

<http://laqm.defra.gov.uk/>

Local Air Quality Management Technical Guidance (TG16)

# Appendices

## Appendix A: QA/QC Data

### **Diffusion Tube Bias Adjustment Factors**

In 2017 the NO<sub>2</sub> diffusion tubes were prepared and analysed by ESG Limited. The tubes are prepared by coating the grids in a 50% v/v solution of the absorbent, triethanolamine (TEA) in water. Analysis is carried out using a segmented flow auto analyser with ultraviolet detection. The laboratory methods are currently UKAS accredited. This laboratory takes part in the NO<sub>2</sub> Network QA/QC Field Intercomparison survey.

The National Bias Adjustment Factor for ESG in 2017 was found to be 0.77 Cm/Dm. This was taken from spreadsheet version 09/18.

### **PM Monitoring Adjustment**

The data from the PM<sub>10</sub> monitor was subject to QA/QC inspection by Ricardo AEA for the 2017 monitoring period. The Canal Street site was an R&P Teom and data has been corrected using the Volatile Correction Method (VCM). The TEOM was replaced by a BAM instrument on 8th March 2017. Adjustments have been made with the 1/1.21 correction for the BAM period.

### **Short-term to Long-term Data adjustment**

No short-term to long term data adjustments were required.

### **QA/QC of automatic monitoring**

During 2017 Newry, Mourne and Down District Council had a QA/QC contract with Ricardo AEA. AQDM acted as the Data Management contractor. QA/QC audits have been completed on the automatic monitoring equipment currently located within the Council area.

### **QA/QC of diffusion tube monitoring**

ESG is assessed annually by UKAS to establish conformance of the Laboratory Quality Procedures and have demonstrated a good performance in the latest round of AIR-PT assessment for nitrogen dioxide diffusion tubes.

Newry, Mourne and Down District Council QA/QC procedure ensures that the diffusion tubes are handled and stored in accordance with ESG Diffusion Tube Instruction Manual for exposure and location.

# Newry, Mourne and Down District Council

## Appendix B

### Newry Centre NO<sub>2</sub> Diffusion tube results 2017

2017	Grid Ref	Grid Ref	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Monaghan Row	307851	326751	25	20	16	12	13	11	9	11	13	14	18	16
Lower canal street	308562	326841	53	53	46	40	39	36	34	28	40	39	48	47
14 Canal street	308538	326864	45	40	36	31	36	27	25	26	29	31	37	42
Canal Street Stat 1	308697	326715	59	51	50	54	48	38	41	36	39	40	52	48
Canal Street Stat 2	308697	326715	52	56	49	51	60	41	40	35	43	46	47	50
Canal Street Stat 3	308697	326715	53	58	51	49	56	43	38	36	52	40	43	41
63 Canal street	308483	326984	57	48	52	46	52	41	40	35	42	43	57	52
Canal Street	308454	327009	95	69	79	79	74	70	50	67	70	70	83	57
Catherine Street	308463	326998	64	62	56	48	53	43	42	44	45	53	50	52
Southern ITEC	308172	327586	48	38	36	29		27	18	22	28	28	39	32
2 Mountain View Drive	308650	327479	32	28	22	18	20	15	12	12	18	22	25	21
59 Sandy Street	308929	326861	64	62	62	52	52	45	43	44	46	55	53	50
Abbey Way	308655	326340	35	34	32	21	21	20	19	19	25	27	30	32
Water Street	308686	326602	75	74	74	72	58	48	55	60		60	67	75
Market Office	308539	326125	35	35	27	19	20	18	16	17	20	24	26	23
33 Kilmorey Street	308668	325196	82	71	84	71	61	56	59	65	59	63	74	67
71 Kilmorey Street	308775	325803	86	81	86	81	87	61	66	66	69	70	78	70
4 Bridge street	308443	325896	49	48	45	34	42	39	35	36	31	37	38	39
Loretto Park	308188	325037	25	22	18	15	12	10	11	12	14	14	18	16
Basin View Terrace	308237	325606	53	50	46	46	44	35	34	38	43	42	52	50
Dominic Street	308190	326128	52	50	49	44	38	36	34	34	42	42	51	36
11 Armagh Road	308278	327324	68	60	60	52	51	42	42	40	44	57	49	45
21 Merchant Quay	308487	326643	53	51	53		41	36	29	34	35	39	47	42
31 Dublin Road	308209	325408	59	59	58	56	46	43	46	51	51	52	52	40
37 Francis street	308213	326180	59	58	54	44	47	39	36	36	36	45	55	39
9 Kilmory terrace	308078	326567	46	42	43	43	33	32	30	31	37	36	50	44
Belfast road	308880	327149	44	37	36	35	31	15	27	30	33	37	48	39