2021 Updating and Screening Assessment for Causeway Coast and Glens Borough Council

In fulfilment of Environment (Northern Ireland) Order 2002

Local Air Quality Management

Date: December 2022

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Report Reference Number	
Date	December 2022

Executive Summary

The new Council of Causeway Coast and Glens Borough Council was formed under Local Government Reform on 1st April 2015, merging Legacy Councils; Ballymoney, Coleraine, Limavady and Moyle.

Within the Borough of Causeway Coast and Glens monitoring of nitrogen dioxide (NO_2) has been undertaken since 2008. This monitoring was undertaken as a result of desktop and stage 1 assessments carried out in the preceding years. Nitrogen dioxide from traffic emissions was identified as a significant pollutant which required detailed investigation.

An Air Quality Management Area (AQMA) was declared within the legacy Limavady District Council, along Dungiven Main Street, in 2009 as levels were in excess of the annual mean concentration of $40ugm^{-3}$.

A continuous automatic monitor was installed along Main Street on 4th August 2010 in order to monitor Nitrogen dioxide pollutant concentrations (see below).

Passive monitoring has been undertaken in other legacy Council locations within the Borough to ensure that levels did not increase.

This report details the air quality information/data gathered by Causeway Coast and Glens Borough Council within the year 2021 and compares it with air quality pollutant levels obtained in previous years as far back as 2017.

Whilst there have been difficulties with the automatic monitoring site due to intermittent mechanical malfunctions in 2021, passive monitoring data derived has shown that levels have remained constant if not, in some cases, slightly reduced on last year.

It is assumed that the 2020 & 2021 data may have been influenced by COVID restrictions on travel.

The action plan derived by legacy Limavady Borough Council, now Causeway Coast and Glens Borough Council, had identified the only long-term solution to the elevated levels due to road traffic within the Dungiven AQMA as being the construction of a bypass in Dungiven.

This bypass has been alluded to for decades, and up until 2018 no progress had been made. The bypass was to form part of a wider dualling scheme of the A6 from Drumahoe to Dungiven, but financial constraints up until then had meant that the project was delayed.

The scheme is nearing completion. It is expected that the scheme will be completed in its entirety by early 2023.

In previous reports it was documented that most of the traffic going through Dungiven was through traffic. These vehicles did not stop in the town to access businesses or dwellings. Local traffic only accounted for a small proportion of the daily volumes.

It is envisaged that the bypass will divert through traffic, a significant percentage of which are HGV's, away from the town, and that significant improvements in air quality will be achieved.

Monitoring will continue within the existing AQMA as NO_2 levels remain high.

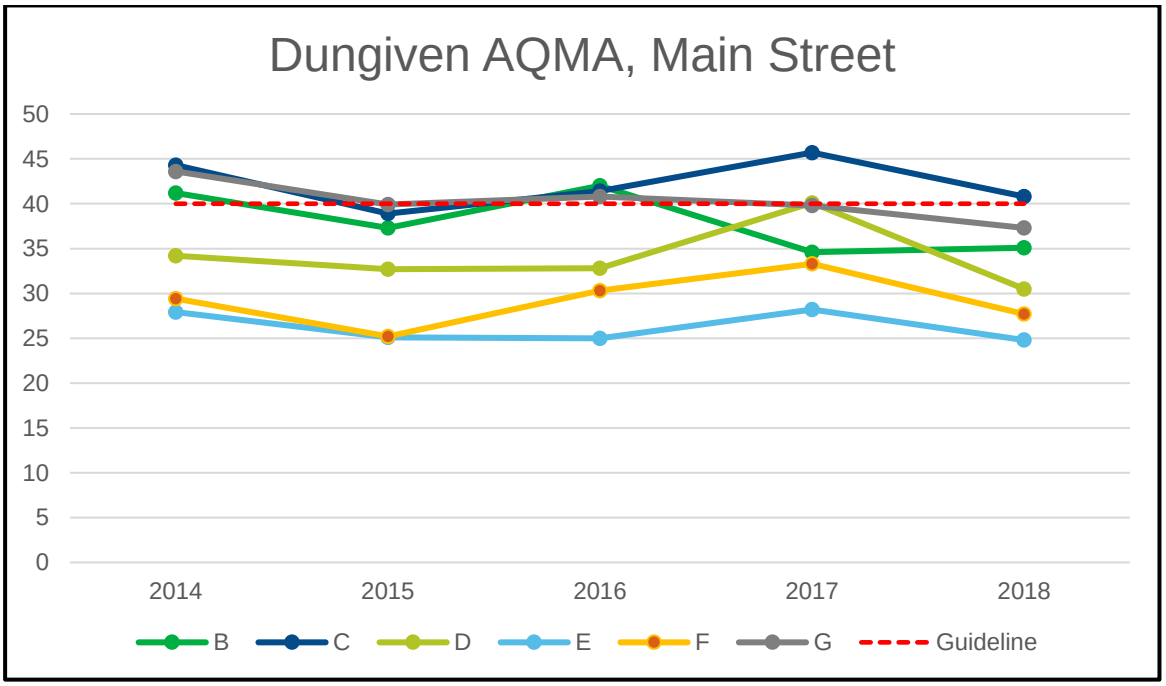
Passive monitoring in the other main urban areas of the Borough was discontinued in 2019, following the publication of the report entitled "Passive Diffusion Monitoring of NO_2 within Causeway Coast and Glens Borough Council 2014-2018" (Appendix A).

Analysis of the NO_2 data at the passive monitoring sites throughout the Borough over the period 2014 – 2018 showed that concentrations were below the applicable annual

mean objective level at the legacy monitoring locations in Ballymoney Borough Council, Moyle District Council and Coleraine Borough Council areas.

From the passive diffusion data derived, results showed the levels were below the annual mean concentration of 40ugm^{-3}.

However, the annual mean objective level of 40ug/m^3 continued to be exceeded during this period (2014-2018) at two passive monitoring sites within the Dungiven AQMA. These two sites (locations C and G) correspond with junctions which lead onto Main Street, Dungiven.



No further detailed assessments have been deemed necessary to evaluate air quality within the Borough. This will be reviewed in the next Progress Report, or if Council become aware of any new developments which have the potential to adversely impact air quality.

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1.0 Introduction

1.1 Description of Local Authority Area

Causeway Coast and Glens Borough Council is located along the North and East coasts of Northern Ireland and encompasses the former Councils of Ballymoney, Coleraine, Limavady and Moyle. From the 2021 Northern Ireland Census data, it has a population of just over 141,746 residents (NISRA, 2022).

The land area is approximately 2000km^2.

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

1.2 Purpose of Report

This report fulfils the requirements of the Local Air Quality Management process as set out in the Environment (Northern Ireland) Order 2002, the Air Quality Strategy for England, Scotland, Wales and Northern Ireland 2007 and the relevant Policy and Technical Guidance documents. The LAQM process places an obligation on all local authorities to regularly review and assess air quality in their areas, and to determine whether the air quality objectives are likely to be achieved.

Where exceedances are considered likely, the local authority must then declare an Air Quality Management Area (AQMA) and prepare an Air Quality Action Plan (AQAP) setting out the measures it intends to put in place in pursuit of the objectives.

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

1.3 Air Quality Objectives

The air quality objectives applicable to LAQM in Northern Ireland are set out in the Air Quality Regulations (Northern Ireland) 2003, Statutory Rules of Northern Ireland 2003, no. 342, and are shown in

Table 1.1. This table shows the objectives in units of micrograms per cubic metre µg/m^3 (milligrams per cubic metre, mg/m^3 for carbon monoxide) with the number of exceedances in each year that are permitted (where applicable).

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

Pollutant	Air Quality Objective Concentration	Air Quality Objective Measured as	Date to be achieved by
Benzene	16.25µg/m^3	Running annual mean	31.12.2003
Benzene	3.25µg/m^3	Running annual mean	31.12.2010
1,3-Butadiene	2.25µg/m^3	Running annual mean	31.12.2003
Carbon monoxide	10.0mg/m^3	Running 8-hour mean	31.12.2003
Lead	0.5µg/m^3	Annual mean	31.12.2004
Lead	0.25µg/m^3	Annual mean	31.12.2008
Nitrogen dioxide	200µg/m^3 not to be exceeded more than 18 times a year	1-hour mean	31.12.2005
Nitrogen dioxide	40µg/m^3	Annual mean	31.12.2005
Particles (PM_{10}) (gravimetric)	50µg/m^3, not to be exceeded more than 35 times a year	24-hour mean	31.12.2004
Particles (PM_{10}) (gravimetric)	40µg/m^3	Annual mean	31.12.2004
Sulphur dioxide	350µg/m^3, not to be exceeded more than 24 times a year	1-hour mean	31.12.2004
Sulphur dioxide	125µg/m^3, not to be exceeded more than 3 times a year	24-hour mean	31.12.2004
Sulphur dioxide	266µg/m^3, not to be exceeded more than 35 times a year	15-minute mean	31.12.2005

1.4 Summary of Previous Review and Assessments

Desktop assessments were carried out within legacy Councils (Ballymoney, Coleraine, Limavady and Moyle) to determine if the defined air quality pollutant levels were likely to exceed the National Air Quality Objective levels as set out within the Air Quality Regulations (NI) 2003.

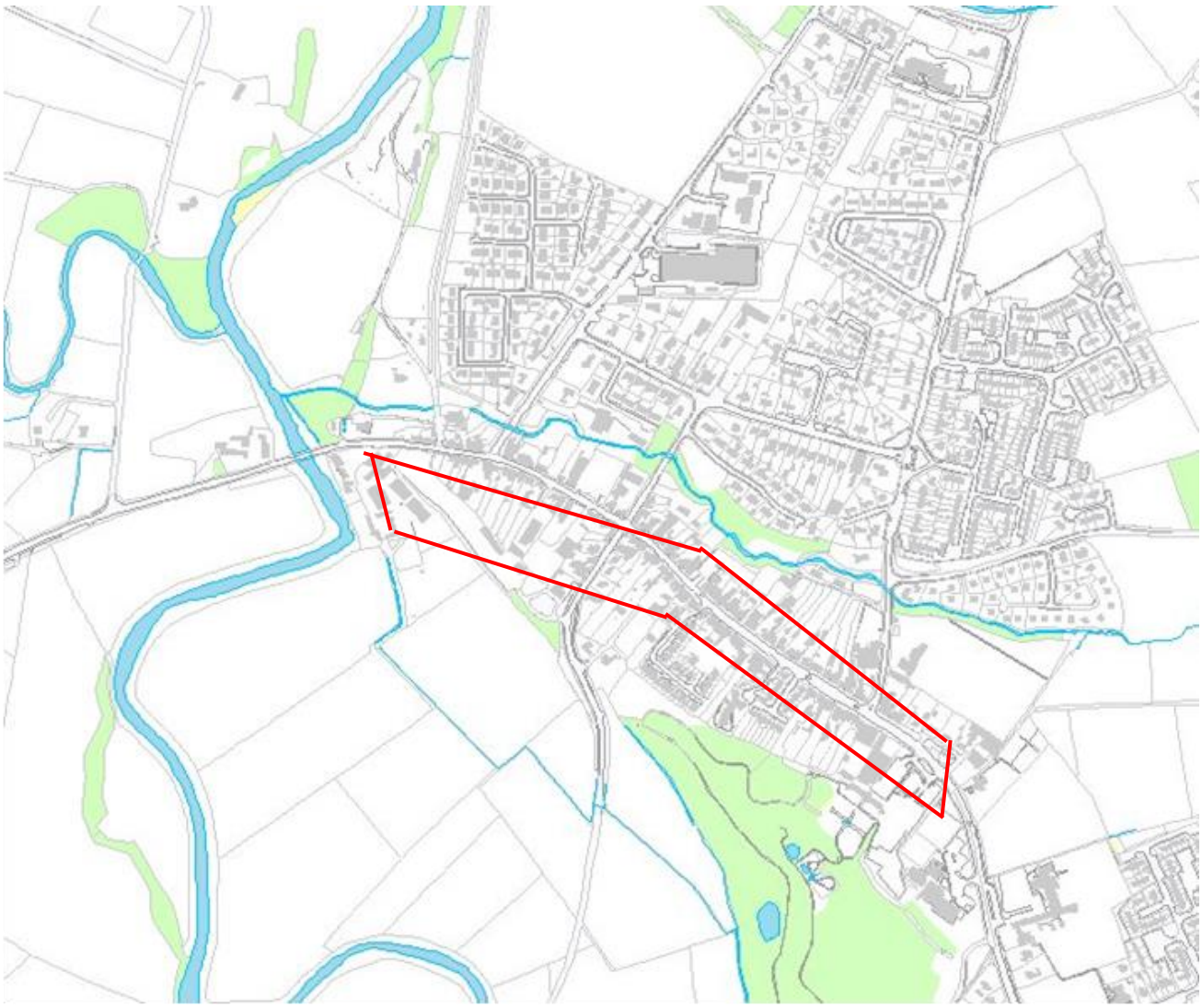
Of particular interest for these Councils were nitrogen dioxide from traffic emissions, particulate matter (PM_{10}) and sulphur dioxide. Particulate matter and sulphur dioxide emissions are associated with industrial processes and the burning of fossil fuels. Following on from these desktop assessments further analysis of pollutants was carried out. Fuel use surveys, DMRB (design manual for roads and bridges) assessments and passive monitoring (nitrogen dioxide for road traffic emissions) were carried out to assess levels.

In terms of the legacy Councils, Air Quality Management Areas (AQMAs) were declared:

- Legacy Limavady Borough Council - Main Street Dungiven for nitrogen dioxide (NO_2), road traffic pollutant emission source.
- Legacy Ballymoney Borough Council - Glebeside, Ballymoney for particulates (PM_{10}), domestic fossil fuel emission source. (The Glebeside AQMA was undeclared as houses in this estate had been converted over to gas).

The AQMA within Dungiven is the only one remaining in place.

Figure 1.1 Map of AQMA Boundary – (red boundary line)



2.0 New Monitoring Data

2.1 Summary of Monitoring Undertaken

2.1.1 Automatic Monitoring Sites

Causeway Coast and Glens Borough Council has a continuous NO_2 monitor within the AQMA in Dungiven. It has been operational since 2010. The monitor is audited and serviced on an annual basis by contractors and the data is ratified.

Figure 2.1 Map of Automatic Monitoring Site

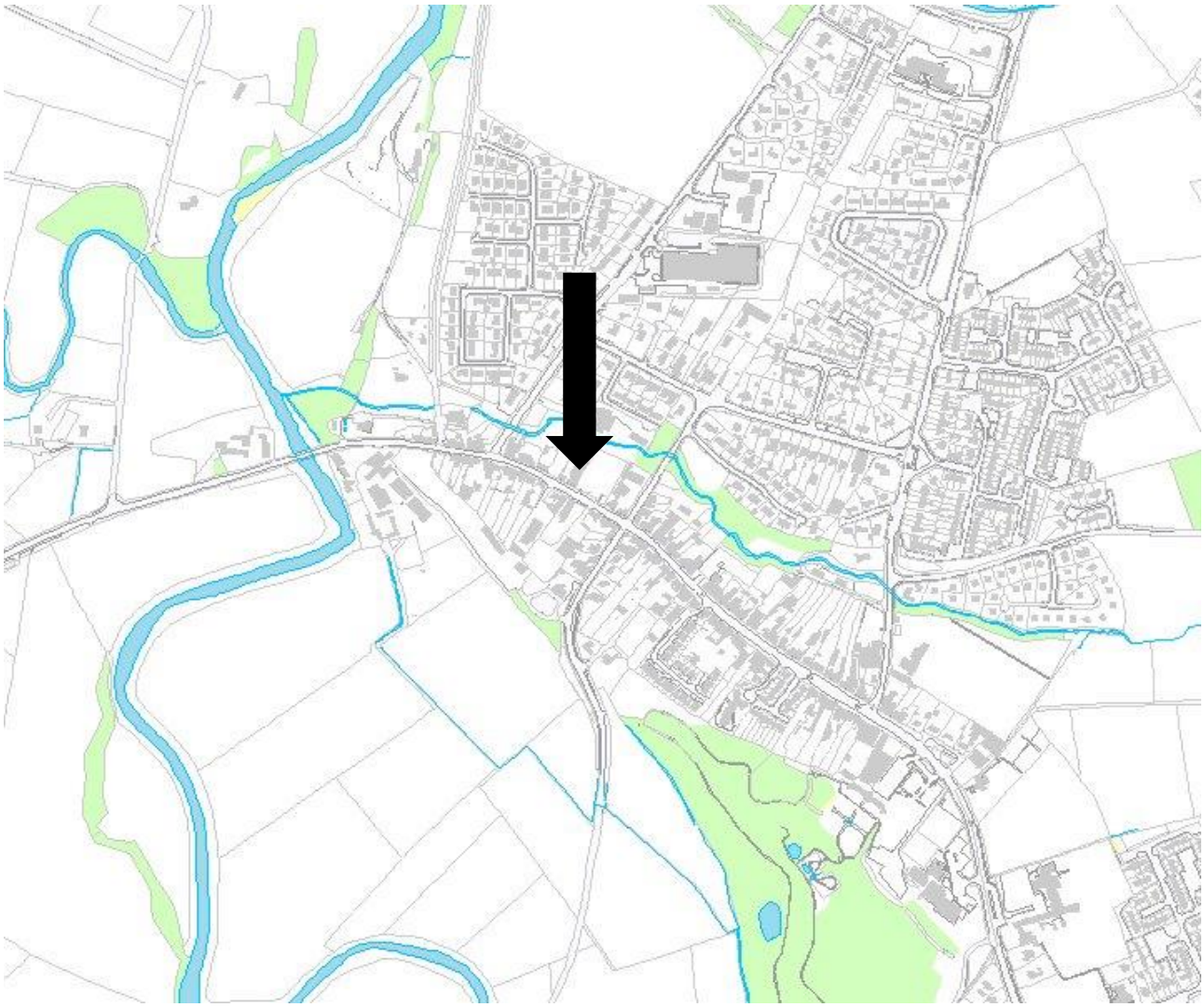


Table 2.1 Details of Automatic Monitoring Sites

Site ID	Site Name	Site Type	X OS Grid Ref	Y OS Grid Ref	Inlet Height (m)	Pollutants Monitored	In AQMA? Which AQMA?	Monitoring Technique	Relevant Exposure? *(Y/N with distance (m) to relevant exposure)*	Distance to kerb of nearest road (m) *(N/A if not applicable)*	Does this location represent worst-case exposure?
Dungiven AQMA	Main Street	Urban roadside	084499	570421	2.0	NO_2	Y	Chemiluminescent	Y	1m	Y

2.1.2 Non-Automatic Monitoring Sites

Nitrogen dioxide (NO_2) and nitric oxide (NO) are both oxides of nitrogen and are collectively referred to as nitrogen oxides.

All combustion processes produce nitrogen oxide emissions, largely in the form of nitric oxide, which is then converted to nitrogen dioxide mainly as a result of reactions with ozone in the atmosphere.

Exposure to high concentrations of nitrogen dioxide is reported to sensitize asthmatics to allergens, such as irritant chemicals, house dust mites and pollen.

In urban areas, particularly close to major roads, motor vehicles account for the largest proportion of nitrogen oxide emissions. The contribution of road transport to nitrogen oxide emissions has declined significantly in recent years because of various national policy measures.

Five passive diffusion sites are located within the AQMA in Dungiven (Figure 2.2) to supplement the data collected by the continuous monitor (Table 2.1).

Figure 2.2 Map of Non-Automatic Monitoring Sites in Dungiven AQMA

Diffusion tubes are a type of passive sampler; they absorb the pollutant to be monitored directly from the surrounding air. Diffusion tubes represent a simple and cost-effective method of monitoring air quality in an area, to give a good general indication of average pollution concentrations. They are particularly useful for assessment against annual mean objectives.

Monitoring sites are chosen to provide data on locations where there is relevant public exposure and where possible, are close to the nearest receptor to the busy road or road junction of interest. The sites are subject to periodic review.

Diffusion tubes are placed out in accordance with and adherence to the DEFRA – Exposure Calendar and Methodology. At the end of the monitoring period the tubes are collected, documentation completed and then sent to the appointed laboratory (Gradko Environmental) to undergo analysis.

On completion of analysis, the results are emailed to the Environmental Protection Team and are recorded for use in the results tabulation for the applicable year.

Results obtained from diffusion tube analysis require correction for possible positive bias (over-read), or negative bias (under-read). The preparation method used was an absorbent of 20% TEA (Triethanolamine) in water. The bias adjustment factor for Gradko and the technique in 2021 is 0.95. This factor is based on 24 studies and is taken from the DEFRA website at: http://laqm.defra.gov.uk/bias-adjustment-factors/national-bias.html.

Table 2.2 Details of Non-Automatic Monitoring Sites: AQMA (Dungiven)

Site ID	Site Name	Site Type	X OS Grid Ref	Y OS Grid Ref	Site Height (m)	Pollutants Monitored	In AQMA? Which AQMA?	Is monitoring co-located with a Continuous Analyser (Y/N)	Relevant Exposure? *(Y/N with distance (m) to relevant exposure)*	Distance to kerb of nearest road (m) *(N/A if not applicable)*	Does this location represent worst-case exposure?
I	Dungiven	Urban background	268957	409535	2.5	NO_2	Y	N	Y (1m)	1m	Y
E (Old site)	Dungiven	Roadside	268887	409482	2.5	NO_2	Y	N	Y (1m)	1m	Y
E	Dungiven	Roadside	268852	409502	2.5	NO_2	Y	N	Y (1m)	1m	Y
F	Dungiven	Roadside	268742	409543	2.5	NO_2	Y	N	Y (1m)	1m	Y
G	Dungiven	Roadside	268981	409387	2.5	NO_2	Y	N	Y (1m)	2m	Y
E (Old site)	Dungiven	Roadside	269190	409219	2.5	NO_2	Y	N	Y (1m)	2m	Y
H	Dungiven	Roadside	269051	409338	2.5	NO_2	Y	N	Y (1m)	2m	Y

2.2 Comparison of Monitoring Results with Air Quality Objectives

2.2.1 Nitrogen Dioxide

Automatic Monitoring Data

Due to the collection of insufficient data in 2021, resulting from downtime associated with mechanical failures with the NOx analyser (less than 75%), data was annualised to reflect levels within the AQMA (Table 2.3).

Table 2.3 - Monthly Data Captures 2021 (%)

Pollutant – Nitrogen Dioxide											
Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
100.0	100.0	100.0	99.6	99.7	99.4	86.2	78.5	0.0	0.0	0.0	72.6

The NO_2 annual mean and hourly mean objectives (2021) were not exceeded, as shown below.

The NO_2 annual means and annual data captures are shown below. The AQS annual mean Objective is 40 µg m^{-3} and the annual data capture target is 85%.

Station	Annual Data Capture %	Annual Mean µg m^{-3}	Objective Exceeded
Dungiven	69.6	28.0	No

The NO_2 annual mean was annualised using the methodology in the Technical Guidance TG (16) (7.129), since the data capture was <75% and there was at least 3 months of monitoring data.

The NO_2 hourly mean AQS Objective is 200 µg m^{-3}. The number of exceedences are shown below. There is an annual allowance of 18 hours.

Station	Number of Hourly Means > 200 µg m^{-3}	Objective Exceeded	99.8th Percentile µg m^{-3}
Dungiven	0	No	115.0

Table 2.4 – Automatic Monitoring Data: Monthly Means Pollutant Results 2021 – Nitrogen Dioxide (ugm^{-3})

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
41	25	27	31	23	19	22	23	-	-	-	43

Dungiven AQMA Main Street - Nitrogen Dioxide Results Summary (2018 – 2021)

National Air Quality Objective for Nitrogen Dioxide (NO_2):

- Annual mean concentration 40ugm^{-3}
- Hourly mean 200 µgm^{-3} not to be exceeded more than 18 times a year

YEAR	Annual mean concentrations	Hourly mean
2018	**51ugm^3**	No exceedances
2019	**56ugm^3**	No exceedances
2020	21ugm^3	No exceedances
2021	28ugm^3	No exceedances

Figures underlined and in bold, represent an exceedance of the Air Quality objective

Note: *It is assumed that the 2020 & 2021 figures have been influenced by COVID restrictions on travel/unnecessary journeys. It should not be assumed that data for these periods shows a sustained decrease in pollutant concentrations.*

Table 2.5 Results of Automatic Monitoring for Nitrogen Dioxide: Annual Mean NO_2 Monitoring Results ($\mu g/m^3$) for Comparison with the Annual Mean Objective

Site ID	Site Type	Within AQMA? Which AQMA?	Valid Data Capture for period of monitoring %[a]	Valid Data Capture 2020 % [b]	2017* [c]	2018* [c]	2019* [c]	2020* [c]	2021 [c]
Dungiven AQMA	Urban roadside	Dungiven AQMA	Less than 75%.	Less than 75%.	46ugm^{-3}	51ugm^{-3}	56ugm^{-3}	24ugm^{-3}	28ugm^{-3}

Due to insufficient data capture (<75%) during 2021 resultant from malfunction of analyser (the 2021 data capture ratification for the air quality monitor was 69.9%): Data Gaps – September, October and November and part of December 2021.

Trends in Annual Mean Nitrogen Dioxide Concentrations measured at Automatic Monitoring Sites (2021)

The annualised figure for Dungiven AQMA was **28ugm-^{3}**. This is significantly lower than previous years. It is assumed that the figures for years 2020 and 2021 have been influenced by COVID restrictions on travel/unnecessary journeys. It should not be assumed that data for this period shows a sustained decrease in pollutant concentrations.

Year 2021 Summary: AQMA – NO_2 Levels, Main Street, Dungiven

NO_2 - annual data capture was 69.6%. The annual mean was 28 µg m^{-3} which did not exceed the annual mean objective: 40µg m^{-3}. This reduction may in part have been due to government COVID restrictions on travel/movement imposed during lockdown.

The maximum hourly mean was 143 µg m^{-3} so there were no exceedances of the NO_2 hourly limit of 200 µg m^{-3}. There is an annual allowance of 18 hours, so the Objective was not exceeded.

Diffusion Tube Monitoring Data

NO_2 data for 12 months was captured in 2017 and 2018. NO_2 data for 2019 is unavailable due to an IT issue when government restrictions necessitated a change to home-based working. Due to COVID lockdown and government restrictions passive monitoring did not take place during 2020 and 2021.

Passive Monitoring results for NO_2 outside of the AQMA in Dungiven in 2018 are shown in Table 2.6. Table 2.7 shows the results of Dungiven Nitrogen Dioxide Diffusion Tubes in 2021. Passive monitoring results for each of the passive sites for the past five years are shown in Table 2.8. The results shown have been adjusted to reflect relevant bias adjustments.

Table 2.6 - Passive Monitoring outside of AQMA, Dungiven – NO_2 Diffusion Tubes Data Capture (2018)

Location	Year	Annual mean NO_2 concentration (ugm-^{3})	NO_2 Air Quality Objective (ugm-^{3})	Comment
Coleraine	2018	27.3	40	No exceedances
Moyle	2018	26.0	40	No exceedances
Ballymoney	2018	29.9	40	No exceedances

Passive monitoring discontinued in these areas in 2018 as NO_2 levels were consistently below the NO_2 air quality objective of 40ugm^{-3}.

Table 2.7 - Results of Dungiven Nitrogen Dioxide Diffusion Tubes in 2021

Site ID	Location	Site Type	Within AQMA? Which AQMA?	Triplicate or Co-located Tube	Full Calendar Year Data Capture 2021 (Number of Months or %) [a]	2021 Annual Mean Concentration (µg/m^3) - Bias Adjustment factor = 0.95 [b]
Dungiven E	Main Street, Dungiven	Roadside	Y	Triplicate	Insufficient data	Insufficient data
Dungiven F	Main Street, Dungiven	Roadside	Y	Triplicate	Insufficient data	Insufficient data
Dungiven G	Main Street, Dungiven	Roadside	Y	Triplicate	Insufficient data	Insufficient data
Dungiven H	Main Street, Dungiven	Roadside	Y	Triplicate	Insufficient data	Insufficient data
Dungiven I	New Street, Dungiven	Roadside	Y	Triplicate	Insufficient data	Insufficient data

Insufficient data obtained in 2021 for passive sites within Dungiven AQMA – (Due to Covid Restrictions)

Table 2.8 - Results of Dungiven Nitrogen Dioxide Diffusion Tubes, adjusted for bias (µg/m^3): 2017 to 2021

Site ID	Site Type	Within AQMA? Which AQMA?	2017[a] (Bias Adjustment Factor = 0.89)	2018[a] (Bias Adjustment Factor = 0.92)	2019[a]	2020[a]	2021[a]
Dungiven E	Roadside	Y	45.7/40.1	40.8/30.5	Data unavailable	Insufficient data	Insufficient data
Dungiven F	Roadside	Y	28.2	24.8	Data unavailable	Insufficient data	Insufficient data
Dungiven G	Roadside	Y	39.8	37.3	Data unavailable	Insufficient data	Insufficient data
Dungiven H	Roadside	Y	33.3	27.7	Data unavailable	Insufficient data	Insufficient data
Dungiven I	Roadside	Y	34.6	35.1	Data unavailable	Insufficient data	Insufficient data

Insufficient data obtained in 2020 and 2021 for passive sites within Dungiven AQMA.
Changes to location of sites for Dungiven E.
Data for 2019 is unavailable due to an IT issue when government restrictions necessitated a change to home-based working.

2.2.2 Particulate Matter (PM_{10})

Causeway Coast and Glens Borough Council do not monitor PM_{10}.

2.2.3 Sulphur Dioxide

Causeway Coast and Glens Borough Council do not monitor Sulphur Dioxide.

2.2.4 Benzene

Causeway Coast and Glens Borough Council do not monitor Benzene.

2.2.5 Other pollutants monitored

Not applicable.

2.2.6 Summary of Compliance with AQS Objectives

Causeway Coast and Glens Borough Council has examined the results from monitoring in the Borough. Available data (NO_2 concentrations) at monitoring locations selected outside of the AQMA up to 2018 are shown to fall below the air quality objectives, therefore there is no need to proceed to a Detailed Assessment.

3.0 Road Traffic Sources

3.1 Narrow Congested Streets with Residential Properties Close to the Kerb

Further to consideration, Causeway Coast and Glens Borough Council will be seeking to review and assess whether relevant air quality objectives are being met with reference to Ballykelly for NO_2 concentrations during 2022.

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

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

The technical guidance indicates that consideration should be given to busy streets where there are many shops, outdoor cafes, bars etc., where persons are likely to be exposed within 5m of the kerb for 1-hour or more. Busy streets are those where there are 10,000 or more vehicle movements per day. Consideration should be given to the traffic flow, the vehicle speed and the percentage of vehicle types. Following a review of the Northern Ireland Traffic Count Data (OpenDataNI, 2022) no further areas were identified in the Causeway Coast and Glens Borough Area.

Causeway Coast and Glens Borough Council confirms that there are no new/newly identified busy streets where people may spend 1 hour or more close to traffic.

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

The technical guidance indicates that consideration should be given to roads where the traffic flows are less than 20,000 vehicle movements per day and there is an unusually high percentage of HGV and/or buses. An unusually high proportion is in the region of 20%. Roads with relevant exposure within 10m should be considered. Northern Ireland Traffic Count Data (OpenDataNI, 2022) indicates that there were no roads within Causeway Coast and Glens Borough Council which convey 20,000 vehicle movements per day and have an unusually high percentage of HGV's (>20%). The largest percentage of HGV's was recorded on the A6 to the west of Dungiven. The percentage here was 12.5%.

Causeway Coast and Glens Borough Council confirms that there are no new/newly identified roads with high flows of HGVs/buses.

3.4 Junctions

Pollutant concentrations are generally higher close to junctions where the combined impact of traffic emissions from two roads and/or the elevated emissions due to stopping and starting. The technical guidance suggests identifying busy junctions and determining if they are new or have been previously assessed. A 'busy' junction is defined as one which experiences 10,000 vehicle movements per day or more. Relevant exposure is deemed to be within 10m of the kerb. Information such as traffic speed, %HDV's including HGV's and buses should be considered. Following a review using published traffic data and online mapping tools no new 'busy' junctions were identified within the Borough Causeway Coast and Glens.

Causeway Coast and Glens Borough Council confirms that there are no new/newly identified busy junctions/busy roads.

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

Nitrogen dioxide and particulate matter

The technical guidance suggests examining those roads which have been constructed since the last assessment. Within the Causeway Coast and Glens Borough, there is a new road scheme under construction and due to open in early 2023: Dungiven to Drumahoe dualling scheme.

This would have been subject to an environmental impact assessment/air quality considerations at the time.

Causeway Coast and Glens Borough Council confirms that there are no other new/proposed roads, within this criterion.

3.6 Roads with Significantly Changed Traffic Flows

This assessment looks at the impact of traffic flows on nitrogen dioxide and particulate matter levels. The technical guidance requires consideration of roads with significant changes in flow. The guidance indicates roads where the volume of traffic is in excess of 10,000 vehicle movements per day where volumes have increased by 25%. From the traffic data available for 2021 there are no roads within the borough where volumes have increased by 25%. It is assumed that the 2020 & 2021 traffic flow data may have been influenced by COVID restrictions on travel and therefore any percentage change in the data may not align with the overall trend.

Causeway Coast and Glens Borough Council confirms that there are no new/newly identified roads with significantly changed traffic flows.

3.7 Bus and Coach Stations

Technical guidance TG (16/22) indicates that assessment is required where bus stations or sections of bus stations are not enclosed and where there is relevant exposure, including at nearby residential properties. The guidance requires assessment where there is relevant exposure within 10m of any part of the bus station where buses are present and where the number of bus movements is greater than 2500 per day. There are no bus stations within the Causeway Coast and Glens Borough area that fall into this category.

Causeway Coast and Glens Borough Council confirms that there are no relevant bus stations in the Local Authority area.

4.0 Other Transport Sources

4.1 Airports

City of Derry airport partially falls within the edge of the Borough. This small regional airport is within 1000m of residential properties. The Technical Guidance indicates that assessment is required where:

- There is relevant exposure within 1000m of the airport boundary and
- the annual throughput of passengers/freight equates to 10 million passengers per year

City of Derry airport's website indicates that in 2009 350,000 passengers passed through the airport. In 2011 this increased to 405,697 passengers (UK AIP at NATS/ Statistics from UK Civil Aviation Authority). In 2015 it was reported that in the past year, numbers of passengers had fallen to 350,257 (Belfast Telegraph, 2015). In 2019 the airport's transported 203,777 passengers (City of Derry Airport, 2022); this represented a 9.7% decrease in the number of passengers from the previous year.

There is currently no freight transport in or out of the airport.

There is therefore no requirement to assess nitrogen dioxide levels originating from the airport.

Causeway Coast and Glens Borough Council confirms that there are no relevant airports within the Local Authority area.

4.2 Railways (Diesel and Steam Trains)

4.2.1 Stationary Trains

The main Belfast to Derry/Londonderry railway line passes through the Borough with stops including Bellarena, Castlerock, Coleraine and Ballymoney. There is also a train line from Coleraine to Portrush with 4 stops in total.

The technical guidance requires Council to identify locations where diesel or steam locomotives regularly stop for periods of 15 minutes or more, where relevant exposure is within 15m of the stationary locomotive and to establish the number of trains per day which might affect these locations and the typical duration that engines may be left running when stationary. The guidance indicates that a detailed assessment may be required where there are three or more occasions when there might be a stationary locomotive with its engine running for 15 minutes or more. All trains in Northern Ireland are diesel; there are no steam trains operated by Translink, the rail service provider.

The following Planning Applications were received; LA01/2021/0973/F and LA01/2021/0972/F – relating to proposed extensions to platforms in Coleraine and Portrush. The nearest receptors to these proposed developments are located within The Whins, Portrush and Cromore Court, Coleraine. The separation distances are approximated to be approximately 15.6m and 8.5m, respectively. Further review of documentation submitted as part of the applications and from Translink relating to these train stations demonstrated that it is very unlikely that there will be stationary locomotives with engines running for 15 minutes or more at these locations.

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

4.2.2 Moving Trains

Table 7.2 within technical guidance TG (16/22) lists those rail lines with heavy traffic of diesel trains. None of these required for consideration are within Causeway Coast and Glens Borough Council.

Causeway Coast and Glens Borough Council confirms that there are no locations with a large number of movements of diesel locomotives, and potential long-term relevant exposure within 30m of the railway track.

4.3 Ports (Shipping)

Causeway Coast and Glens Borough Council confirms that there are no ports or shipping that meet the specified criteria within the Local Authority area.

5.0 Industrial Sources

5.1 Industrial Installations

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

There have been new or proposed installations permitted within the borough since the last Update Screening Assessment. A review of recent planning history for the Borough identified the following planning applications which may meet the above criteria:

- LA01/2020/0663/F - Old Bushmills Distillery 2 Distillery Road, Bushmills; Proposed alterations and extensions to Warehouse no 17 to accommodate a new Distilling Facility including Ancillary Cooling Plant and Boiler House Utilities and Repositioning of Plant approved under LA01/2018/0955/F (*Permission Granted*).
- LA01/2020/0685/F - Lands 60m SW of 29 Drumbare Road, Cloughmills; Erection of 2 No. Storage Sheds, hardstanding, landscaping and all associated works in conjunction with extant approval LA01/2015/0377/F for wood pellet business (*Permission Granted*).
- LA01/2021/0477/F - Approximately 425m Southwest of no. 84 Cullyrammer Road, Kilrea; Retention of extension to quarry site hardstanding with aggregate storage building (Amended description) (*Under Consideration*).
- LA01/2018/0651/F - Long Mountain Wind Farm West of 99 Glenbuck Road, Rasharkin; Development of a hydrogen production compound measuring c.30m x 20m comprising 2 no containers to provide for an electrolyser and compressor; dry cooler, buffer tank and trailer filling system with associated access off existing track. Associated transformer, cabling, borehole, and all associated ancillary works (*Permission Granted*).
- LA01/2016/0373/CA & EN/2018/0017 - Land 35 metres Northwest of 133 Baranailt Road, Limavady; Alleged unauthorised anaerobic digestor, combined heat and power plant, ancillary equipment and structures and associated hard covered area (*Enforcement notice quashed*).

Causeway Coast and Glens Borough Council confirms that there have been new industrial installations for which planning approval has been granted within its area or nearby in a neighbouring authority.

Air quality pollutants relevant to the developments were required to have been addressed through the planning /development control processes and/or as necessary fall within the regulatory control under the Pollution Prevention and Control (Industrial Emissions) Regulations (NI) 2013 in terms of air pollutant controls.

5.1.2 Existing Installations where Emissions have Increased substantially, or new Relevant Exposure has been introduced

There are no existing installations where emissions have increased substantially, or new relevant exposure has been introduced.

Causeway Coast and Glens Borough Council confirms that there are no industrial installations with substantially increased emissions or new relevant exposure in their vicinity within its area or nearby in a neighbouring authority.

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

There have been no new installations within the Borough and no significant changes made to any existing installations with no previous air quality assessment.

Causeway Coast and Glen Borough Council confirms that there are no new or significantly changes installations which would fall within this category.

6.0 Major Fuel (Petrol) Storage Depots

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

6.1 Petrol Stations

Technical guidance TG (16/22) requires identification of all petrol stations with an annual throughput of more than 2000m^3 of petrol with a busy road nearby. A busy road is defined as one with more than 30,000 vehicle movements per day.

Causeway Coast and Glens Borough Council confirms that there are no petrol stations meeting the specified criteria**.**

7.0 Poultry Farms

Technical guidance TG (16/22) states that the following farms should be considered for PM_{10} if there is relevant exposure within 100m:

- Those with 400,000 birds if mechanically ventilated
- Those with 200,000 birds if naturally ventilated, and
- Those with 100,000 turkeys

A review of the DAERA Public Register (Pollution Prevention and Control (Industrial Emissions) Regulations (NI) 2013) within the Causeway Coast and Glens Borough Council area (Schedule 1 Section 6.9, Part A (a) (i) “Intensive Farming”) installations concluded that there are no poultry farms within the Borough which fall into any of the above categories.

Causeway Coast and Glens Borough Council confirms that there are no poultry farms meeting the specified criteria.

8.0 Commercial and Domestic Sources

8.1 Biomass Combustion – Individual Installations

Technical guidance TG (16/22) recommends identification of all plant burning biomass in 50kW to 20 MW units.

Following a review of relevant historical planning documentation for biomass boilers within the Causeway Coast and Glens Borough, installations were identified which fell within the criteria stated above. Such developments were screened for air quality impacts using the DEFRA Industrial Emissions Screening Tool. Following this, it can be determined if the actual emissions provided in the Emissions Certificate are below the maximum emission rate calculated by the Tool (Version 3) in relation to both NO_2 and PM_{10}. As detailed in Local Air Quality Management Technical Guidance (TG 22) it can then be determined if further modelling and/or monitoring is required. For the applications received, the tool has not identified that further modelling/monitoring was required, as plant were screened out, falling within the guideline levels.

Causeway Coast and Glens Borough Council confirms that no biomass combustion plant in the Local Authority area were identified as needing further modelling/monitoring.

8.2 Biomass Combustion – Combined Impacts

The technical guidance states that there may be the potential that many small combustion units including domestic solid fuel burners may attribute to elevated levels of pollutants. Whilst acceptable individually, they could in combination lead to unacceptably high PM_{10} levels in areas where PM_{10} levels are close to or above the national air quality objective.

Councils are required to identify 500mx500m grid squares where housing densities are highest and there are service sector biomass combustion appliances. To quantify the impact of domestic appliances within the grid square each type of appliance should be identified. Once identified calculations should be used in conjunction with Table 5.3 within the guidance to determine the annual domestic emission level for each grid square.

Regarding those units in the service sector, the floorspace occupied within each grid square for each of solid fuel burning plants is identified. Again, the annual service sector emission level per hectare should be calculated and this, along with the domestic emission level, will indicate the total emission level within the grid square.

Estimations of the fraction of space within the grid square occupied by solid fuel burning premises can then be used to determine the emission density for each grid square (kg emissions/500x500m square).

If the source exceeds the threshold, detailed assessment is required.

Causeway Coast and Glen Borough Council has assessed the biomass combustion plant within the district and concluded that it will not be necessary to proceed to a Detailed Assessment.

8.3 Domestic Solid-Fuel Burning

Technical Guidance (TG 22) states that areas of significant domestic coal burning should be considered. Previous monitoring/modelling and fuel use surveys of such significant areas i.e., any area of 500x500m with more than 50 houses burning coal/smokeless fuel have indicated that no exceedances of sulphur dioxide (SO_2) and particulate matter (PM_{10}) were likely. Many of these areas have since moved over to gas usage.

Causeway Coast and Glens Borough Council confirms that there are no areas of significant domestic fuel use in the Local Authority area.

9.0 Fugitive or Uncontrolled Sources

Particulate matter (PM_{10})

Dust emissions can give rise to elevated levels of PM_{10}. These emissions may arise from operations such as quarries, landfills, coal and material stockpiles, major construction works and waste management sites. Consideration should be given to any air quality studies which have been carried out with regard to such operations, and if there is relevant exposure. The distance of any receptor should be assessed from source as opposed to the site boundary.

To determine accurately the impact such activities would have on PM_{10} emissions, local authorities should assess any existing air quality assessments carried out in relation to specific sites and determine if exposure falls under the definition of 'near'. 'Near' is defined in relation to local background PM_{10} concentrations. For the 2004 National air quality objective level 'near' is defined as

- 1000m if [background] >28ugm^{-3}
- 400m if [background] >26ugm^{-3}
- 200m for any [background]

These distances are from source which may not always coincide with the site boundary.

If the relevant exposure is within 50m of an off-site road used to access the site and there are visible deposits on the road, then these sections of road which may extend up to 1000m from the site entrance are considered as 'near', as long as the background concentration is above 25ugm^{-3} for the 2004 objective levels.

History of complaints regarding dust and visual inspection of emissions and evidence of dust being carried out onto roadways from such sites should be considered.

If there is relevant exposure and if there is either a history of complaint and/or visual emissions detailed assessment is required.

Within the Causeway Coast and Glens Borough there are several quarries, and these would have been subject to previous review and assessment in terms of the technical guidance.

There are two landfill sites operating within the Borough, one of which is council owned at the Craigahulliar site and one privately owned by RiverRidge Recycling Ltd., located outside Garvagh. There are in total four closed landfills within the Borough.

A review of the relevant planning data and PPC permitted installations was carried out pertaining to quarry and landfill sites and no additional sites which would require inclusion

were identified. Included in this review was a screening of relevant complaints held by the Council.

Causeway Coast and Glens Borough Council confirms that there are no potential sources of fugitive/uncontrolled particulate matter emissions in the Local Authority area.

10.0 Conclusions and Proposed Actions

10.1 Conclusions from New Monitoring Data

This Update and Screening Assessment has indicated that aside from the AQMA, no new issues have arisen which would require either a detailed or further assessment for any pollutants. As previously stated, due to COVID lockdown and government restrictions passive monitoring did not take place during 2020 and 2021. Levels of NO_2 within the AQMA in Dungiven (automatic monitoring data) has revealed that there is a trend of decreasing concentrations of nitrogen dioxide below the annual mean objective level of 40ugm^{-3} (2020 and 2021 data refers), however it is assumed that the decrease will have been influenced by Covid restrictions. The AQMA will remain in place and monitoring will continue.

10.2 Conclusions from Assessment of Sources

Construction of the A6 Dungiven bypass is progressing well, and it is on track for completion in early 2023. It is envisaged that once opened this new stretch of road will significantly reduce traffic volumes within Dungiven/ Main Street and hence nitrogen dioxide pollutant levels are envisaged to fall significantly. At present most of the traffic passing through Dungiven is through traffic, as opposed to local traffic. Congestion would be a feature of current traffic movements especially at peak times such as school times and rush hours. The bypass will, once completed, take a considerable number of vehicles away from relevant locations.

No significant issues have been identified beyond the existing AQMA which require any additional investigation or monitoring. Regarding potential sources, no new issues have been identified since the last USA report.

Passive diffusion monitoring sites have been identified for Ballykelly in order to gain up to date data on nitrogen dioxide, this is to resume February 2022.

10.3 Proposed Actions

No new issues of concern have been identified, however passive monitoring is to commence in Ballykelly in February 2022. Monitoring, (passive and automatic) will continue within the AQMA in Dungiven. No detailed assessments or further assessments are required regarding any of the pollutants. As highlighted, technical issues/malfunctions with the automatic monitor in Dungiven has given rise to nitrogen dioxide data gaps. In addition, COVID

restrictions 2020/2021 did impact on Council's ability to monitor (passive sites) however it is anticipated that sufficient data capture will be achieved in 2022.

11.0 References

- Air Quality Regulations (Northern Ireland) 2003. Available at: https://www.legislation.gov.uk/nisr/2003/342/contents/made
- Belfast Telegraph (2015) Traffic rise at Belfast airports as City of Derry falls. Available at: https://www.belfasttelegraph.co.uk/business/news/traffic-rise-at-belfast-airports-as-city-of-derry-falls-30920265.html
- Causeway Coast and Glens Borough Council (2018). Passive diffusion monitoring of NO_2 with Causeway Coast and Glens Borough Council 2014-2018
- City of Derry Airport (2022) Facts and Figures. Available at: https://www.cityofderryairport.com/about-us/facts-figures/
- DAERA Pollution Prevention and Control permitted processes. Available at: https://public-registers.daera-ni.gov.uk/pollution-prevention-control
- DEFRA (2008). Diffusion Tubes for Ambient NO2 Monitoring: Practical Guidance for Laboratories and Users
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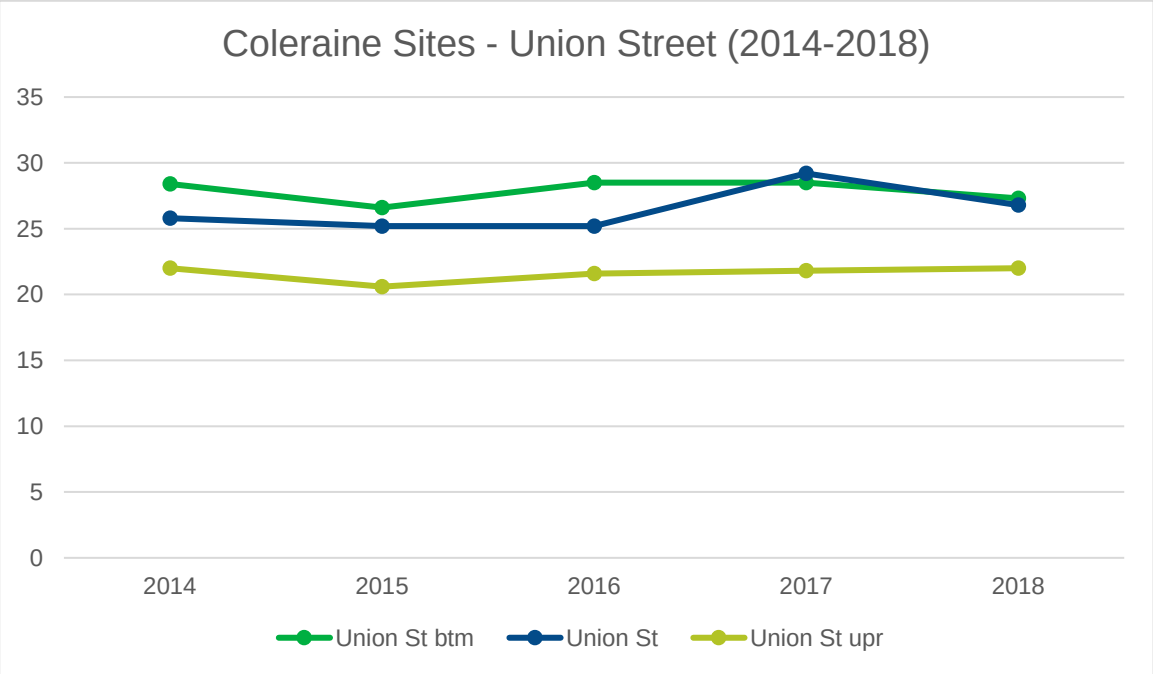
- DEFRA in partnership with the Scottish Executive, Welsh Assembly Government and DOE Northern Ireland (2007). The Air Quality Strategy for England, Scotland, Wales and Northern Ireland.
- NISRA. 2021 Census. Available at: https://www.nisra.gov.uk/statistics/census/2021-census
- The Environment (Northern Ireland) Order 2002. Available at: https://www.legislation.gov.uk/nisi/2002/3153/contents
- Open Data NI (2022). Northern Ireland Traffic Count Data. Available at; https://www.opendatani.gov.uk/dataset/northern-ireland-traffic-count-data

12.0 Appendix

Appendix A. Cessation of passive diffusion monitoring of NO_2 within Causeway Coast and Glens Borough Council 2014-2018

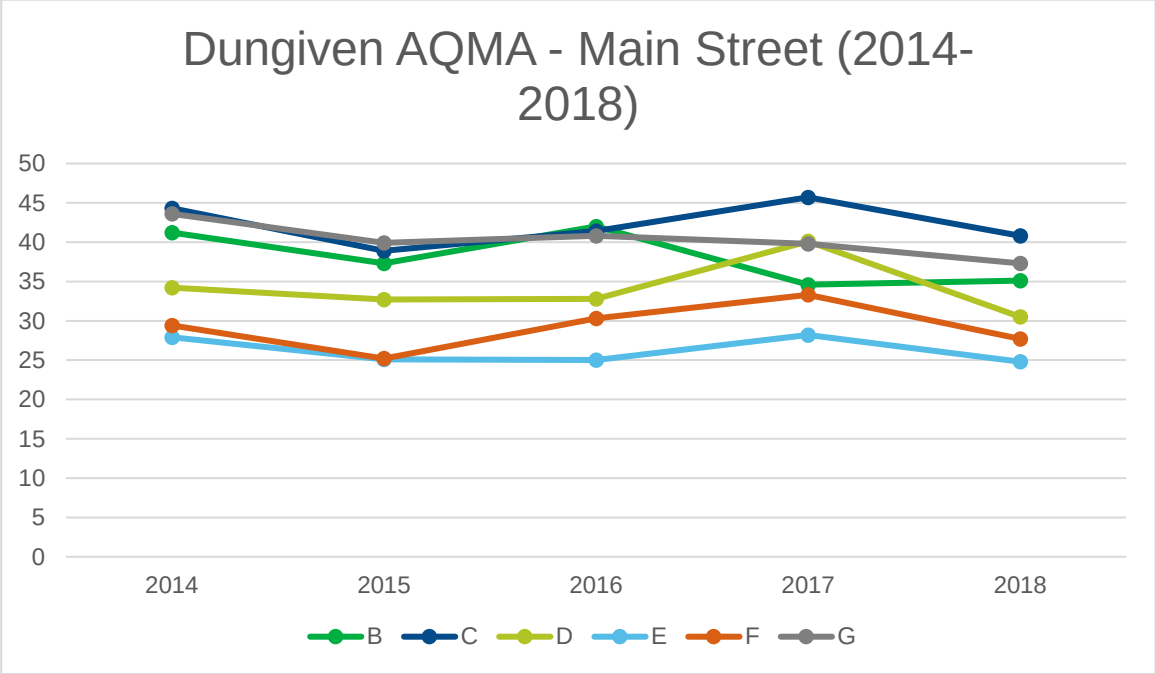
Analysis of passive NO_2 monitoring data throughout the Borough has shown that since 2014 pollutant levels in the legacy Coleraine, Ballymoney and Moyle areas have remained below the annual mean concentration of 40ugm^{-3}. The annual mean objective level continues to be exceeded within the AQMA in Dungiven (please refer to graphs below). Based on these findings, it is proposed to continue monitoring within the AQMA only.

Coleraine



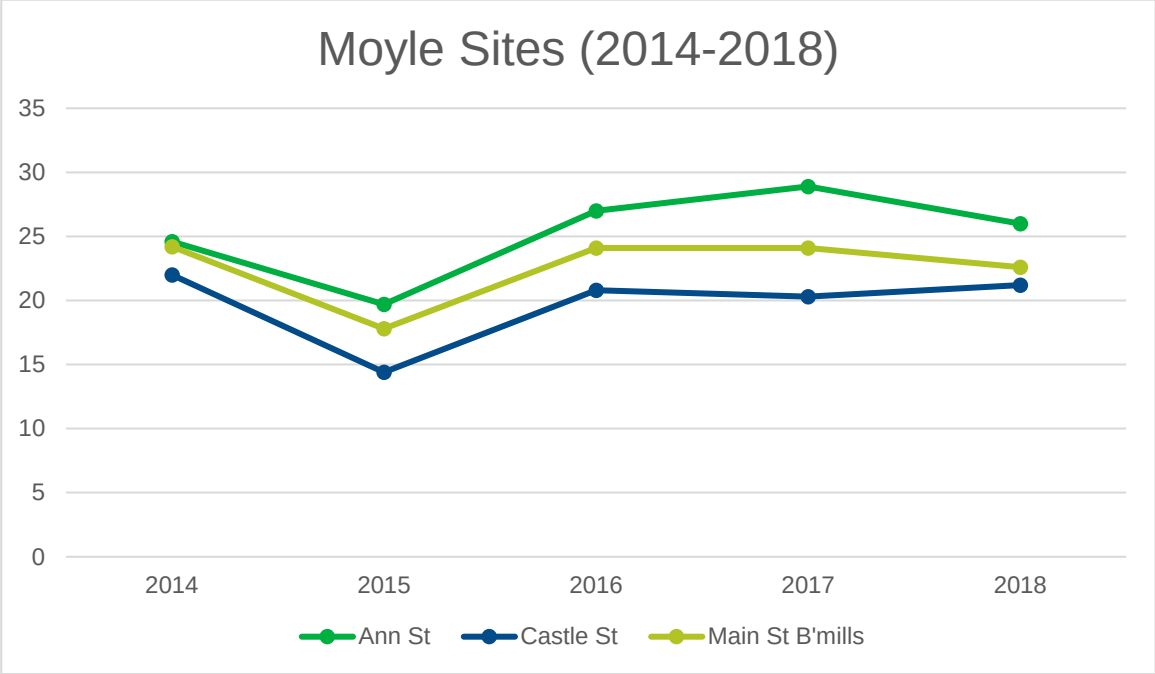
Levels of NO_2 in the Union Street area of Coleraine have been relatively constant over the past 5 years. The annual mean concentration has not been exceeded at any of the sites.

Dungiven AQMA Main Street



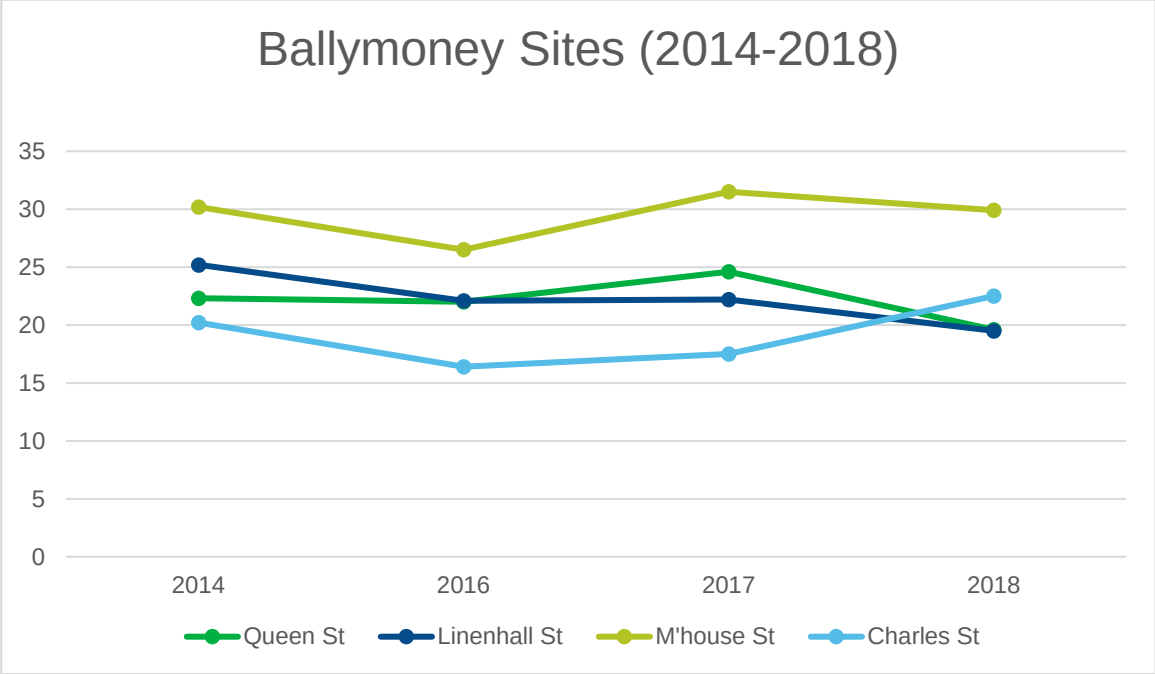
The annual mean objective level of 40ugm^{-3} continues to be exceeded at two monitoring sites within the Dungiven AQMA. These two sites, C & G, correspond with two junctions which lead onto Main Street. Location C where the Ballyquin Road meets Main Street is often where traffic builds up when traffic on Main Street is attempting to turn right onto the Ballyquin Road. Similarly, traffic builds up close location C in periods of high traffic flow and when traffic is attempting to make a right turn off Main Street onto New Street.

Moyle



NO_2 objective levels are not exceeded at any of the Moyle sites. Levels within Ann Street and Castle Street in Ballycastle and Main Street Bushmills do not exceed 30ugm^{-3}

Ballymoney



NO_2 levels at the monitoring sites within Ballymoney have all been below the annual mean concentration of 40ugm^{-3} over the past 5 years.

It had been suggested that additional NO_2 monitoring should be carried out within the one-way system in Coleraine town centre (Brook St/Long Commons/Tesco/Hanover Place). Previous reports compiled by the legacy Coleraine office state that the Environmental Health Department had previously conducted monitoring in these streets. Monitoring was carried out in Long Commons as far back as 2002 when levels were measured at 23.4ugm^{-3} (Stage 2 Review & Assessment 2002). Within the USA published in 2012 Table 2.4 lists monitoring data collected for these areas. This is summarised below.

Street Name	**2009 (ugm^{-3})**	**2010 (ugm^{-3})**	**2011 (ugm^{-3})**
Brook Street	33.14	29.65	27.21
Long Commons	20.36	24.66	19.47
Tesco	22.86	27.23	20.91
Hanover Place	23.84	25.72	21.92

The data clearly shows that levels were significantly lower that the annual mean objective level. These areas were screened out at this time as needing no further attention. This data, and the fact that automotive technologies have improved since this monitoring was undertaken demonstrates that there is no relevant exposure to high concentrations of NO_2 within these locations.

Recommendation

As limits are not exceeded at any of these passive monitoring sites, we will discontinue use as of 31 March 2020. Passive monitoring will continue within the AQMA in Dungiven.