North Wales Authorities Collaborative Project

2021 Air Quality Progress Report

In fulfilment of Part IV of the Environment Act 1995 Local Air Quality Management

Wood Group UK Limited – September 2021

Report for

Isle of Anglesey County Council (IACC);
Conwy County Borough Council (CCBC);
Denbighshire County Council (DCC);
Flintshire County Council (FCC);
Gwynedd Council (GC); and
Wrexham County Borough Council (WCBC).

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2021 Air Quality Progress Report

In fulfilment of Part IV of the Environment Act 1995

Local Air Quality Management

Date: September, 2021

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Executive Summary: Air Quality in Our Area

Air Quality in North Wales

Part IV of the Environment Act 1995 places a statutory duty on local authorities to review and assess the air quality within their area and take account of Government Guidance when undertaking such work. This Annual Progress Report is a requirement of the Seventh Round of Review and Assessment and is a requirement for all local authorities. This Progress Report has been undertaken in accordance with the Technical Guidance LAQM.TG (16) and associated tools. It covers the six local authorities which encompass the North Wales region (The North Wales Authorities). The local authorities are as follows:

- Isle of Anglesey County Council (IACC);
- Conwy County Borough Council (CCBC);
- Denbighshire County Council (DCC);
- Flintshire County Council (FCC);
- Gwynedd Council (GC); and
- Wrexham County Borough Council (WCBC).

The North Wales Authorities have not declared any Air Quality Management Areas (AQMAs) and as a result, have not published any Action Plans. Air quality monitoring is undertaken by all six local authorities with a total of five automatic monitoring stations measuring nitrogen dioxide (NO_2) and particulate matter (PM_{10} and $PM_{2.5}$) concentrations and 152 NO_2 diffusion tube monitoring sites, located at key locations within town centres and along main transport links.

Monitored concentrations are compared with Air Quality Objectives (AQO) as detailed in Appendix B. In 2020 there was no exceedance of the NO_2 annual mean AQO of 40 µg/m^3. Having considered each pollutant and reviewed the new developments approved in 2020, it can be concluded that there is no requirement for any of the six North Wales local authorities to undertake a detailed assessment.

Actions to Improve Air Quality

As detailed in Section 4.1, air quality is considered in the wider context in the following adopted local policies:

IACC and **GC** have adopted a joint Local Development Plan which provides the land use strategy for the next 15 years. The plan addresses the need to maintain good air quality in the area and ensure new development does not cause adverse impacts.

CCBC Local Development Plan (LDP) 2007-2022 includes strategic policies (NTE/1) to ensure natural resources including air quality are protected.

DCC Local Development Plan 2006-2021 was adopted in 2013 and includes a commitment to avoid reaching critical air quality levels.

In terms of monitoring, two new monitoring sites were introduced in **CCBC** at Tal Y Cafn and Tal Y Bont near the B5279 and the B5106. The annual average NO_2 results for the two sites referenced CBC 050 and CBC 051 were significantly below the annual mean AQO. The sites will however be continued to be used for monitoring to establish a longer-term trend.

Local Priorities and Challenges

The North Wales authorities will continue to maintain their monitoring programmes and ensure new monitoring sites are installed as required. Each year new monitoring sites are introduced primarily in road traffic locations where concerns have been expressed by members of the public, locally elected members or organisations.

How to Get Involved

Further information on air quality in North Wales is available at https://airquality.gov.wales/

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1 Actions to Improve Air Quality

Previous Work in Relation to Air Quality

This Progress Report has been undertaken in accordance with the Technical Guidance LAQM.TG (16) and associated tools. It has been produced collaboratively between the six local authorities which encompass the North Wales region (The North Wales Authorities). The local authorities are Isle of Anglesey County Council (IACC), Conwy County Borough Council (CCBC), Denbighshire County Council (DCC), Flintshire County Council (FCC), Gwynedd Council (GC), and Wrexham County Borough Council (WCBC).

Previous rounds of review and assessment have identified areas in North Wales where there are potential exceedances of the various Air Quality Objectives (AQOs). Detailed assessments have been carried out when exceedances have been reported to evaluate whether there is a need to declare an Air Quality Management Area (AQMA). There are currently no AQMAs declared in North Wales.

Table 1.1 – Summary of Previous Rounds of Review and Assessment in North Wales

Year	Report Type	Detailed Assessment Recommended	AQMA Declared
2003	Updating and Screening Assessment	No detailed assessments required in any Local Authority Area.	No AQMA declared in any Local Authority Area.
2004	Progress Report	Detailed assessment carried out for PM_{10} and NO_2 close to the A494 in FCC. No other detailed assessments required in any Local Authority Area.	No AQMA declared in any Local Authority Area.

Year	Report Type	Detailed Assessment Recommended	AQMA Declared
2005	Progress Report	No detailed assessments required in any Local Authority Area.	No AQMA declared in any Local Authority Area.
2006	Updating and Screening Assessment	Detailed assessment required at Trimm Rock and Aberdo Limestone Quarries and at Roadrunner Waste Transfer Station in FCC. No other detailed assessments required in any Local Authority Area.	No AQMA declared in any Local Authority Area.
2007	Progress Report	Detailed assessment carried out for sulphur dioxide (SO_2) 15- minute mean objective for Penrhos Coastal Park in IACC. No other detailed assessments required in any Local Authority Area.	No AQMA declared in any Local Authority Area.
2008	Progress Report	No detailed assessments required in any Local Authority Area.	No AQMA declared in any Local Authority Area.

Year	Report Type	Detailed Assessment Recommended	AQMA Declared
2009	Updating and Screening Assessment	Detailed assessment no longer required at Trimm Rock and Aberdo Limestone Quarries and at Roadrunner Waste Transfer Station in FCC. Detailed assessment carried out for SO_2 15- minute mean objective for Holyhead Railway Station in IACC. Detailed assessment required for SO_2 as a result of steam trains in GC. No other detailed assessments required in any Local Authority Area.	No AQMA declared in any Local Authority Area.
2010	Progress Report	Detailed assessment required for the area around Wrexham Road in Cefn Y Bedd in FCC. Detailed assessment carried out for SO_2 as a result of steam trains in GC. No other detailed assessments required in any Local Authority Area.	No AQMA declared in any Local Authority Area.
2011	Progress Report	Detailed assessment carried out for nitrogen dioxide (NO_2) along Vale Street, Denbigh in DCC.	No AQMA declared in any Local Authority Area.

Year	Report Type	Detailed Assessment Recommended	AQMA Declared
2012	Updating and Screening Assessment	Detailed assessment no longer required for the area around Wrexham Road in Cefn Y Bedd in FCC. Detailed assessment carried out for the junction of the A5119 and A494 in Mold in FCC. No other detailed assessments required in any Local Authority Area.	No AQMA declared in any Local Authority Area.
2013	Progress Report	No detailed assessments required in any Local Authority Area.	No AQMA declared in any Local Authority Area.
2014	Progress Report	No detailed assessments required in any Local Authority Area.	No AQMA declared in any Local Authority Area.
2015	Updating and Screening Assessment	No detailed assessments required in any Local Authority Area.	No AQMA declared in any Local Authority Area.
2016	Progress Report	No detailed assessments required in any Local Authority Area.	No AQMA declared in any Local Authority Area.

Year	Report Type	Detailed Assessment Recommended	AQMA Declared
2017	Progress Report	No detailed assessments required in any Local Authority Area.	No AQMA declared in any Local Authority Area.
2018	Progress Report	No detailed assessments required in any Local Authority Area.	No AQMA declared in any Local Authority Area.
2019	Progress Report	No detailed assessments required in any Local Authority Area.	No AQMA declared in any Local Authority Area.
2020	Progress Report	No detailed assessments required in any Local Authority Area.	No AQMA declared in any Local Authority Area.

Air Quality Management Areas

Air Quality Management Areas (AQMAs) are declared when air quality is close to or above an acceptable level of pollution (known as the AQO (Please see Appendix A)). After declaring an AQMA the authority must prepare an Air Quality Action Plan (AQAP) within 18 months setting out measures it intends to put in place to improve air quality to at least the air quality objectives, if not even better. AQMA(s) are seen by local authorities as the focal points to channel resources into the most pressing areas of pollution as a priority.

None of the local authorities in North Wales currently have an AQMA and therefore no AQAPs have been published.

2 Air Quality Monitoring Data and Comparison with Air Quality Objectives

Summary of Monitoring Undertaken in 2020

2.1.1 Automatic Monitoring Sites

This section sets out what monitoring has taken place and how results compare with the objectives.

IACC undertook automatic (continuous) monitoring at 3 sites during 2020.

WCBC undertook automatic monitoring at two sites during 2020 with one new site being installed in July 2020. Table 2.1 presents the details of the sites. National monitoring results are available at https://airquality.gov.wales/.

Maps showing the location of the monitoring sites are provided in Figure 2.1 and Figure 2.2. Further details on how the monitors are calibrated and how the data has been adjusted are included in Appendix C.

2.1.2 Non-Automating Monitoring Sites

In 2020 non-automatic monitoring of NO_2 using passive diffusion tubes was undertaken by all six local authorities at roadside, kerbside, industrial and urban background locations. Table 2.2 presents the details of the sites. The number of monitoring locations within each local authority is as follows:

- IACC undertook monitoring at 4 locations;
- CCBC undertook monitoring at 19 locations;
- DCC undertook monitoring at 26 locations;
- FCC undertook monitoring at 56 locations, including duplicate diffusion tube monitoring at 3 sites (3 Davies Cottage, 20/22 Glynne Way and Llys Alun). Site ADDC-107 at Bryn Coch Lane, Mold was installed in August 2020;
- GC undertook monitoring at 12 locations; and
- WCBC undertook NO_2 monitoring at 32 locations, including one triplicate site which is co-located with the Victoria Road AURN station. A new site was added in 2020.

Maps showing the location of the monitoring sites are provided in Figure 2.3 to Figure 2.7

Further details on Quality Assurance/Quality Control (QA/QC) and bias adjustment for the diffusion tubes are included in Appendix C.

Table 2.1 – Details of Automatic Monitoring Sites

Site ID	Site Name	Site Type	Associated with (Named) AQMA?	X OS Grid Reference	Y OS Grid Reference	Pollutants Monitored	Monitoring Technique	Inlet Height (m)	Distance from monitor to nearest relevant exposure (m) (1)	Distance from Kerb to Nearest Relevant Exposure (m)	Distance from Kerb to Monitor (m)
IACC											
CM1 Llynfaes	Llynfaes (Creigiau)	Rural	N	239692	379774	PM_{10}, $PM_{2.5}$	Light scattering	1.5	11	1	10
CM2 Brynteg	Brynteg (Chwarelau)	Rural	N	248566	381325	PM_{10}, $PM_{2.5}$	Light scattering	4.0	6	1	5
CM4 Penhesgyn	IVC Penhesgyn	Rural	N	253457	374348	PM_{10}, $PM_{2.5}$	Light scattering	1.5	300	100	200
WCBC											
AURN	Victoria Road AURN	Roadside	N	332863	349913	NO_2, PM_{10}, $PM_{2.5}$	All continuous (PM: light scattering)	3.0	20	24	4
Wrexham Chirk	Wrexham Chirk	Urban industrial	N	329318	338300	NO_2, NO, VOC, PM_{10}, $PM_{2.5}$	All continuous (PM: light scattering)	1.5	10	15	80

Notes:

(1) 0m indicates that the sited monitor represents exposure and as such no distance calculation is required.

Figure 2.1 – Map of Automatic Monitoring Sites – IACC

Figure 2.2 – Map of Automatic Monitoring Sites – WCBC

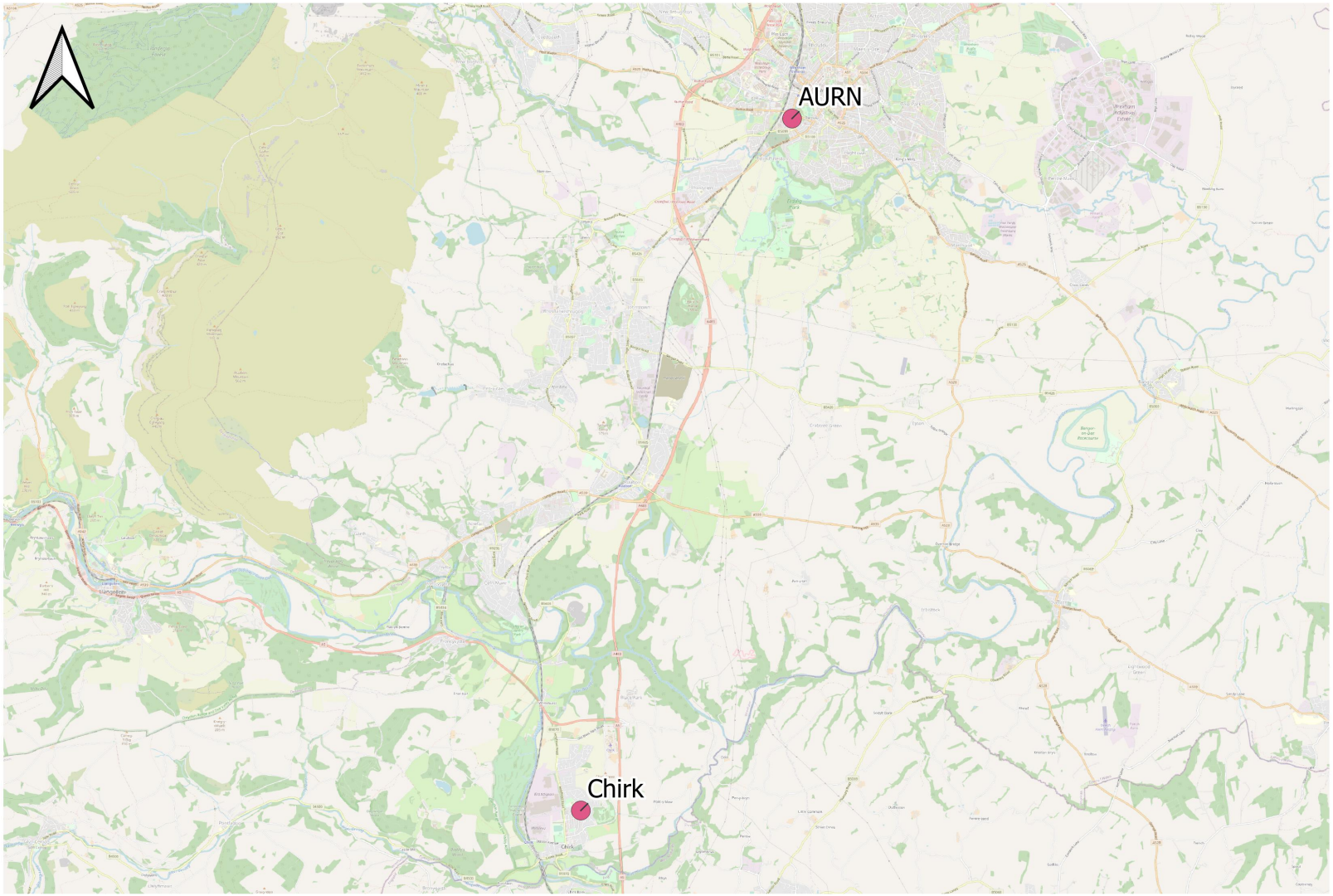


Table 2.2 – Details of Non-Automatic Monitoring Sites

Site ID	Site Name	Site Type	Associated with Named AQMA?	X OS Grid Reference	Y OS Grid Reference	Site Height (m)	Collocated with a Continuous Analyser?	Distance from monitor to nearest relevant exposure (m) (1)	Distance from Kerb to Nearest Relevant Exposure (m)	Distance from Kerb to Monitor (m)
IACC										
IACC-081	Marine Sq. Holyhead	Roadside	N	224942	382866	3.0	N	15.0	17.5	2.5
IACC-082	Opp. Panton Arms, Pentraeth	Roadside	N	252360	378402	3.0	N	1.3	2.0	0.7
IACC-083	Llanfair A55 Bridge	Roadside	N	253057	372313	2.0	N	13.0	14.0	1.0
IACC-084	Orthios Penrhost Lodge	Roadside	N	226681	381486	3.5	N	6.0	13.0	7.0
CCBC										
DT/CCBC017	Kingsway, Colwyn Bay	Roadside	N/A	284526	379417	3.0	N	0.1	1.0	1.1
DT/CCBC018	Heol Dewi, Pensarn	Roadside	N/A	295049	378144	2.1	N	0.5	3.5	3.0
DT/CCBC021	Llanfairfechan, A55	Roadside	N/A	268572	375472	3.0	N	0.9	2.0	1.1
DT/CCBC022	Bryn Marl, Mochdre	Roadside	N/A	282362	378757	3.0	N	0.5	2.0	1.5
DT/CCBC034	Victoria Drive, Llandudno Jcn.	Roadside	N/A	279245	377995	3.0	N	0.3	2.5	2.2

Site ID	Site Name	Site Type	Associated with Named AQMA?	X OS Grid Reference	Y OS Grid Reference	Site Height (m)	Collocated with a Continuous Analyser?	Distance from monitor to nearest relevant exposure (m) (1)	Distance from Kerb to Nearest Relevant Exposure (m)	Distance from Kerb to Monitor (m)
DT/CCBC035	Ysgol Bod Alaw, Colwyn Bay	Roadside	N/A	285506	378295	3.0	N	0.2	2.0	2.2
DT/CCBC036	Ysgol Tudno, Llandudno	Roadside	N/A	278131	381907	3.0	N	1.0	2.5	1.5
DT/CCBC040	Rhuddlan Rd Abergele	Roadside	N/A	294943	377498	3.0	N	0.0	1.7	1.7
DT/CCBC041	Faenol Avenue Abergele	Roadside	N/A	295077	377682	3.0	N	0.8	3.5	2.7
DT/CCBC042	Yr Angorfa, Conwy Morfa	Roadside	N/A	277318	378576	3.0	N	0.0	30.0	30.0
DT/CCBC043	Ysgol Pant Y Rhedyn, Llanfairfechan	Kerbside	N/A	268425	375266	3.0	N	0.8	3.0	2.2
DT/CCBC044	Pendalar Busgate, Llanfairfechan	Roadside	N/A	268845	375713	3.0	N	0.7	2.0	1.3

Site ID	Site Name	Site Type	Associated with Named AQMA?	X OS Grid Reference	Y OS Grid Reference	Site Height (m)	Collocated with a Continuous Analyser?	Distance from monitor to nearest relevant exposure (m) (1)	Distance from Kerb to Nearest Relevant Exposure (m)	Distance from Kerb to Monitor (m)
DT/CCBC045	Parc Yr Eryr, A470 Llanrwst	Kerbside	N/A	280300	361013	3.0	N	0.0	2.0	2.0
DT/CCBC046	Eagles, A470 Llanrwst	Kerbside	N/A	279833	361574	2.5	N	0.3	1.5	1.2
DT/CCBC047	Maes Y Llan, Dwygyfychi	Roadside	N/A	273223	377460	3.0	N	1.0	2.0	1.0
DT/CCBC048	A55 Conwy	Roadside	N/A	276115	378273	2.5	N	0.0	22.0	22.0
DT/CCBC049	Bangor Back Lane, Conwy	Roadside	N/A	276115	378230	2.8	N	0.0	25.0	25.0
DT/CCBC050	Tal Y Cafn (B5279)	Roadside	N/A	277840	371586	2.5	N	0.0	2.0	2.0
DT/CCBC051	Tal Y Bont (B5106)	Roadside	N/A	277391	371652	3.0	N	0.0	2.5	2.5
DCC										
RHBC/006	Wellington Road, Rhyl	Roadside	N	300846	381407	2.3	N	0.5	2.7	2.2

Site ID	Site Name	Site Type	Associated with Named AQMA?	X OS Grid Reference	Y OS Grid Reference	Site Height (m)	Collocated with a Continuous Analyser?	Distance from monitor to nearest relevant exposure (m) (1)	Distance from Kerb to Nearest Relevant Exposure (m)	Distance from Kerb to Monitor (m)
RHBC/017	10 Kinmel Street, Rhyl	Roadside	N	300903	381292	2.5	N	2.5	2.8	0.3
RHBC/058	Adj. 7 Berwyn Street, Llangollen	Roadside	N	321500	341900	3.0	N	0.8	1.8	1.0
RHBC/060	Adj. 48 Church Street, Llangollen	Roadside	N	321800	341900	2.3	N	0.0	0.5	0.5
RHBC/007	2 Pant Glas, St. Asaph	Suburban	N	302938	374638	2.0	N	9.6	37.1	27.5
RHBC/051	Adj. 1 Vale Street, Denbigh	Roadside	N	305276	366119	2.4	N	0.0	1.0	1.0
RHBC/026	31 Ruthin Road, Denbigh	Suburban	N	305878	366424	2.5	N	1.4	3.9	2.5
RHBC/062	14 Maes Helyg, Rhuddlan	Suburban	N	302180	378414	2.8	N	8.8	9.0	1.0
RHBC/011	7 Roe Park, St. Asaph	Roadside	N	303197	374830	2.0	N	0.0	14.0	14.0

Site ID	Site Name	Site Type	Associated with Named AQMA?	X OS Grid Reference	Y OS Grid Reference	Site Height (m)	Collocated with a Continuous Analyser?	Distance from monitor to nearest relevant exposure (m) (1)	Distance from Kerb to Nearest Relevant Exposure (m)	Distance from Kerb to Monitor (m)
RHBC/063	12, Hennessey Terrace, Denbigh	Roadside	N	305097	366100	2.6	N	3.7	2.5	2.5
RHBC/027	Denbigh Cutters, 21 Vale Street, Denbigh	Suburban	N	305330	366160	2.2	N	0.0	3.0	3.0
RHBC/059	Adj. 6-7 Castle Street, Llangollen	Roadside	N	321500	342000	2.7	N	3.4	3.8	0.4
RHBC/023	25 Park Road, Ruthin.	Roadside	N	312106	358306	2.2	N	4.0	5.4	1.4
RHBC/046	Adj HSBC Bank, Vale Street, Denbigh	Suburban	N	305314	366153	2.6	N	5.5	8.0	2.5
RHBC/047	Opp Rowlands Pharm., Vale Street, Denbigh	Roadside	N	305386	366191	2.6	N	1.7	2.9	1.2
RHBC/048	Adj 50 Vale Street, Denbigh	Roadside	N	305467	366246	2.5	N	3.9	5.9	2.0

Site ID	Site Name	Site Type	Associated with Named AQMA?	X OS Grid Reference	Y OS Grid Reference	Site Height (m)	Collocated with a Continuous Analyser?	Distance from monitor to nearest relevant exposure (m) (1)	Distance from Kerb to Nearest Relevant Exposure (m)	Distance from Kerb to Monitor (m)
RHBC/040	Haul Fryn Depot, Ruthin	Roadside	N	312789	358231	2.3	N	1.0	4.5	3.5
RHBC/041	Adj 62 Rhos Street, Ruthin	Roadside	N	312913	358273	2.6	N	0.0	2.3	2.3
RHBC/055	Adj. Swayne Johnston Sol., Vale Street, Denbigh	Roadside	N	305308	366130	2.9	N	N/A	N/A	1.8
RHBC/056	7 Vale Street, Denbigh	Roadside	N	305290	366130	2.3	N	N/A	N/A	2.0
RHBC/034	2 Rhyl Road, Denbigh	Roadside	N	305805	366480	2.4	N	1.3	2.1	0.8
RHBC/035	47 High Street, Denbigh	Roadside	N	305193	366093	2.4	N	N/A	N/A	5.9
RHBC/036	Adj CO-OP, High Street, Denbigh	Kerbside	N	305229	366082	2.3	N	N/A	N/A	5.3

Site ID	Site Name	Site Type	Associated with Named AQMA?	X OS Grid Reference	Y OS Grid Reference	Site Height (m)	Collocated with a Continuous Analyser?	Distance from monitor to nearest relevant exposure (m) (1)	Distance from Kerb to Nearest Relevant Exposure (m)	Distance from Kerb to Monitor (m)
RHBC/037	Adj Fairyburn, Rhyl Road, Denbigh	Roadside	N	305863	366661	2.5	N	11.4	12.3	0.9
RHBC/052	79 High Street, Prestatyn	Roadside	N	306580	382906	2.6	N	N/A	N/A	1.0
RHBC/061	Adj. 1 Vale View, High Street, Rhuddlan	Roadside	N	302300	378000	2.3	N	4.4	4.9	0.5
RHBC/006	Wellington Road, Rhyl	Roadside	N	300846	381407	2.3	N	0.5	2.7	2.2
FCC										
ADDC-008	10A Wrexham Road, Mold	Kerbside	N	323800	363856	2.2	N	0.0	1.0	1.0
ADDC-009	1, St.Davids Close, Ewloe CH5 3AP	Urban	N	329830	366682	1.8	N	0.0	35.0	35.0
ADDC-085	Aston Hill Roadside	Kerbside	N	330718	367350	2.0	N	10.0	11.0	1.0

Site ID	Site Name	Site Type	Associated with Named AQMA?	X OS Grid Reference	Y OS Grid Reference	Site Height (m)	Collocated with a Continuous Analyser?	Distance from monitor to nearest relevant exposure (m) (1)	Distance from Kerb to Nearest Relevant Exposure (m)	Distance from Kerb to Monitor (m)
ADDC-111	Hawarden High School CH5 3DL	Kerbside	N	330614	366195	1.6	N	7.0	10.0	3.0
ADDC-105	Abermorddu/Cymau Crossroads	Roadside	N	330986	356538	TBC	N	8.7	11	2.3
ADDC-013	Kelsterton Farm, Kelsterton Lane, Connah's Quay	Rural background	N	327307	369856	2.2	N	26.0	27.0	1.0
ADDC-014	Kelsterton Road, Connah's Quay	Kerbside	N	327187	371243	1.8	N	5.0	10.0	5.0
ADDC-015	86, Kelsterton Road, Connah's Quay CH5 4BJ	Urban background	N	328032	370647	1.6	N	0.0	22.0	22.0
ADDC-106	Outside The Nook, Village Road, Pentre Halkyn	Roadside	N	320126	372346	TBC	N	13.5	14.0	0.5

Site ID	Site Name	Site Type	Associated with Named AQMA?	X OS Grid Reference	Y OS Grid Reference	Site Height (m)	Collocated with a Continuous Analyser?	Distance from monitor to nearest relevant exposure (m) (1)	Distance from Kerb to Nearest Relevant Exposure (m)	Distance from Kerb to Monitor (m)
ADDC-107	Bryn Coch Lane, Mold (started Aug 20)	Roadside	N	323500	363397	TBC	N	TBC	TBC	TBC
ADDC-064, ADDC-098	3 Davies Cottage, Mold Road, Alltami	Kerbside	N	326643	365550	1.6	N	0.0	4.0	4.0
ADDC-117	20/22 Glynne Way, Hawarden	Kerbside	N	331648	365730	2.0	N	0.0	1.0	1.0
ADDC-099	Sandycroft CP School Leaches Lane CH5 2EH	Kerbside	N	332500	367357	1.6	N	1.0	2.0	1.0
ADDC-023	Aston Hill, Roadside – Additional Tube within 12m of ADDC/085	Kerbside	N	330727	367354	2.0	N	10.0	11.0	1.0
ADDC-024	4, Belvedere Close, Queensferry CH5 1TG	Urban	N	331663	368028	1.8	N	0.0	20.0	20.0

Site ID	Site Name	Site Type	Associated with Named AQMA?	X OS Grid Reference	Y OS Grid Reference	Site Height (m)	Collocated with a Continuous Analyser?	Distance from monitor to nearest relevant exposure (m) (1)	Distance from Kerb to Nearest Relevant Exposure (m)	Distance from Kerb to Monitor (m)
ADDC-118	32 Chester Road West, Shotton	Kerbside	N	330599	368922	2.3	N	0.0	4.0	4.0
ADDC-080	Saltney Ferry CP School CH_4 0BN	Kerbside	N	336904	364852	2.0	N	7.0	8.0	1.0
ADDC-066	Gwylfa, Northop Rd., Flint Mountain	Kerbside	N	323864	370368	2.0	N	0.0	3.0	3.0
ADDC-116	Coed Mawr Cott., Mostyn Road, Greenfield CH8 9DN	Kerbside	N	318669	378290	2.2	N	0.0	2.0	2.0
ADDC-029	Sealand CP School Welsh Road CH5 2RA	Kerbside	N	332535	368907	1.8	N	1.0	2.0	1.0
ADDC-030	Green Lane West, Sealand	Rural background	N	333645	370898	2.2	N	29.0	46.0	75.0
ADDC-032	Second Avenue, Deeside Industrial Estate (Valspar)	Industrial	N	332764	370981	2.0	N	N/A	N/A	1.0

Site ID	Site Name	Site Type	Associated with Named AQMA?	X OS Grid Reference	Y OS Grid Reference	Site Height (m)	Collocated with a Continuous Analyser?	Distance from monitor to nearest relevant exposure (m) (1)	Distance from Kerb to Nearest Relevant Exposure (m)	Distance from Kerb to Monitor (m)
ADDC-033	Llys Alun, Wrexham Road, Cefn Y Bedd	Kerbside	N	331079	356100	1.8	N	0.0	2.0	2.0
ADDC-034	BASF, Deeside Industrial Park, Sealand	Industrial	N	332031	371562	1.8	N	N/A	N/A	20
ADDC-120	Corus rear entrance DIP, Sealand	Industrial	N	329906	370882	1.8	N	N/A	N/A	1.0
ADDC-036	89, Riverside Park, Garden City	Roadside	N	333040	369051	2.2	N	5.0	10.0	15.0
ADDC-037	Ysgol St John Penymynydd CH_4 0LG	Kerbside	N	330528	362756	2.0	N	4.0	5.0	1.0
ADDC-093	Weighbridge Road, Deeside Industrial Park, Sealand	Industrial	N	330575	371802	2.2	N	N/A	N/A	1.0

Site ID	Site Name	Site Type	Associated with Named AQMA?	X OS Grid Reference	Y OS Grid Reference	Site Height (m)	Collocated with a Continuous Analyser?	Distance from monitor to nearest relevant exposure (m) (1)	Distance from Kerb to Nearest Relevant Exposure (m)	Distance from Kerb to Monitor (m)
ADDC-044	28, Chester Road, Pentre, Deeside CH5 2DT	Kerbside	N	332221	367723	1.8	N	0.0	5.0	5.0
ADDC-067	Trelawney Towers 79 Chester Road, Flint CH6 5DU	Kerbside	N	324935	372722	2.0	N	0.0	4.0	4.0
ADDC-068	Flint Town Council Buildings	Kerbside	N	324459	373141	4.0	N	0.0	6.0	6.0
ADDC-069	133, Main Road, Broughton CH_4 0NR	Kerbside	N	333568	363511	2.4	N	0.0	1.0	1.0
ADDC-070	2, Coleshill Street, Holywell CH8 7UP	Kerbside	N	318766	375758	2.4	N	0.0	1.0	1.0
ADDC-081	Sycamore House, Greenfield Road, Holywell CH8 7PY	Kerbside	N	318735	376611	2.2	N	0.0	1.0	1.0

Site ID	Site Name	Site Type	Associated with Named AQMA?	X OS Grid Reference	Y OS Grid Reference	Site Height (m)	Collocated with a Continuous Analyser?	Distance from monitor to nearest relevant exposure (m) (1)	Distance from Kerb to Nearest Relevant Exposure (m)	Distance from Kerb to Monitor (m)
ADDC-119	43, Station Road, Queensferry CH5 1SU	Kerbside	N	331806	368271	2.0	N	0.0	5.0	5.0
ADDC-114	Glendale Lodge, Rhydgaled, Mold A5119	Kerbside	N	324281	364926	2.0	N	0.0	6.0	6.0
ADDC-052	Castell Alun Fagl Lane Hope LL129PY	Kerbside	N	330705	358429	1.8	N	8.0	10.0	2.0
ADDC-115	Ysgol Y Fron Halkyn St Holywell CH8 7TX	Kerbside	N	318851	375592	1.8	N	4.0	5.0	1.0
ADDC-112	1 Manor Road, Sealand CH5 2SB	Kerbside	N	333731	369079	1.8	N	9.0	1.0	10.0
ADDC-113	Ysgol Y Llan Whitford CH8 9AN	Kerbside	N	314615	378238	2.0	N	4.0	5.0	1.0
ADDC-091	RGHS Ffordd Llewelyn Flint CH6 5JZ	Kerbside	N	324838	372198	1.8	N	1.0	2.0	1.0

Site ID	Site Name	Site Type	Associated with Named AQMA?	X OS Grid Reference	Y OS Grid Reference	Site Height (m)	Collocated with a Continuous Analyser?	Distance from monitor to nearest relevant exposure (m) (1)	Distance from Kerb to Nearest Relevant Exposure (m)	Distance from Kerb to Monitor (m)
ADDC-108	Flint HS Fifth Avenue Flint CH6 5LW	Kerbside	N	324357	372008	1.8	N	4.0	5.0	1.0
ADDC-110	413 Chester Road, Oakenholt, Flint CH6 5SF	Kerbside	N	325961	371822	2.2	N	1.0	2.0	1.0
ADDC-084, ADDC-100	Ysgol Bryn Coch Victoria Road Mold CH7 1EW	Kerbside	N	323975	363794	1.8	N	4.0	5.0	1.0
ADDC-060	Ewloe Green School CH5 3AU	Kerbside	N	329284	366504	1.8	N	9.0	10.0	1.0
ADDC-061	74, High Street, Saltney CH_4 8SQ	Kerbside	N	338283	365032	1.8	N	0.0	6.0	6.0
ADDC-121	31, The Rowans, Broughton CH_4 0TD	Kerbside	N	333531	363028	2.0	N	5.0	30.0	25.0
ADDC-083, ADDC-101	Ysgol Estyn Hawarden Road Hope LL12 9NL	Kerbside	N	330898	357996	1.8	N	2.0	5.0	3.0

Site ID	Site Name	Site Type	Associated with Named AQMA?	X OS Grid Reference	Y OS Grid Reference	Site Height (m)	Collocated with a Continuous Analyser?	Distance from monitor to nearest relevant exposure (m) (1)	Distance from Kerb to Nearest Relevant Exposure (m)	Distance from Kerb to Monitor (m)
ADDC-109	Westwood CP School Padeswood Rd CH7 2JT	Kerbside	N	327843	363856	2	N	4.0	5.0	1.0
ADDC-075	17, Mill Lane, Buckley CH7 3HA	Kerbside	N	327849	364146	2.3	N	1.0	2.0	1.0
ADDC-102	Elm Tree Rd Saughall	Kerbside	N	335594	369179	2.3	N	10.0	11.0	1.0
ADDC-103	Ferry Lane, Chester	Kerbside	N	337632	366682	2.2	N	13.0	15.0	2.0
ADDC-104	Deeside Lane, Sealand	Kerbside	N	335292	368346	2.2	N	49.0	50.0	1.0
ADDC-089	Rose Cottage Junction A5119/A494	Kerbside	N	324375	365007	2.2	N	2.0	3.0	1.0
ADDC-122	Bryn Mair 114 Chester Road Mold CH7 1UQ	Roadside	N	324530	363839	3.0	N	8.0	10.0	2.0

Site ID	Site Name	Site Type	Associated with Named AQMA?	X OS Grid Reference	Y OS Grid Reference	Site Height (m)	Collocated with a Continuous Analyser?	Distance from monitor to nearest relevant exposure (m) (1)	Distance from Kerb to Nearest Relevant Exposure (m)	Distance from Kerb to Monitor (m)
ADDC-123	30 High Street Mold CH7 1BH	Roadside	N	324562	363840	3.0	N	0.0	1.0	1.0
GC										
GCC 002	Roundabout A487, Caernarfon (C1)	Kerbside	N	248273	362132	2.0	N	9.0	10.0	1.0
GCC 003	Lon Campbell, Caernarfon (C3)	Urban Background	N	248480	363456	2.0	N	N/A	5.0	N/A
GCC 005	Ffordd Bangor, Caernarfon (C5)	Kerbside	N	248892	364120	1.8	N	6.0	7.0	1.0
GCC 008	A4087, Bangor (B3)	Kerbside	N	257587	371543	1.9	N	1.0	2.0	1.0
GCC 011	A5122, Bangor (B5)	Kerbside	N	256292	371663	1.7	N	>25.0	>25.0	1.0
GCC 012	Faenol Roundabout, Bangor (B6)	Kerbside	N	254286	368835	1.8	N	>25.0	>25.0	1.0
GCC 013	Bethesda (BETH 1)	Kerbside	N	261529	367380	2.0	N	9.0	10.0	1.0
GCC 015	Llanwnda (LL1)	Roadside	N	247770	358663	1.9	N	93.0	95.0	2.0

Site ID	Site Name	Site Type	Associated with Named AQMA?	X OS Grid Reference	Y OS Grid Reference	Site Height (m)	Collocated with a Continuous Analyser?	Distance from monitor to nearest relevant exposure (m) (1)	Distance from Kerb to Nearest Relevant Exposure (m)	Distance from Kerb to Monitor (m)
GCC 037	Poolside, Caernarfon (C6)	Kerbside	N	248022	362757	1.9	N	1.0	2.0	1.0
GCC 038	A55, Bangor (B4)	Roadside	N	256871	369493	1.3	N	>25.0	>25.0	2.0
GCC 039	A55, Bangor (CO-LOC)	Roadside	N	256871	369493	1.3	N	>25.0	>25.0	2.0
GCC 040	Pwllheli (PW1)	Kerbside	N	237517	335217	2.0	N	1.0	2.0	1.0
WCBC										
1	Grosvenor Road	Roadside	N	333200	350600	1.5	N	10.0	12.0	2.0
34	Coed Poeth	Roadside	N	329017	351002	2.0	N	1.0	8.0	9.0
45	Crispin Lodge	Roadside	N	332214	351503	1.6	N	8.0	0.0	8.0
36	Acrefair	Roadside	N	327630	342990	2.0	N	0.0	2.0	2.0
10	Ysgol Y Waun	Suburban	N	329300	338300	2.0	N	18.0	20.0	2.0
49	Black Lane School	Suburban	N	330221	353428	2.0	N	1.0	2.5	1.5

Site ID	Site Name	Site Type	Associated with Named AQMA?	X OS Grid Reference	Y OS Grid Reference	Site Height (m)	Collocated with a Continuous Analyser?	Distance from monitor to nearest relevant exposure (m) (1)	Distance from Kerb to Nearest Relevant Exposure (m)	Distance from Kerb to Monitor (m)
42	Llan-Y-Pwll	Roadside	N	335359	352178	1.6	N	4.0	9.0	5.0
50	Llys Y Groes	Roadside	N	331924	350638	1.5	N	0.0	9.0	9.0
51	Ysgol Yr Hafod	Suburban	N	330125	346099	1.5	N	3.5	5.0	1.5
52	Woodbank Court	Intermediate	N	330703	334004	1.5	N	0.0	20.0	20.0
53	Froncysyllte	Roadside	N	327263	341184	1.5	N	0.0	2.0	2.0
22	Holyhead Road	Intermediate	N	328900	338700	1.5	N	28.0	30.0	2.0
32	Sycamores	Roadside	N	333887	353222	1.5	N	N/A	25.0	N/A
30	Rhostyllen Rbt	Roadside	N	330950	348170	1.2	N	31.0	35.0	4.0
31	Bus Station	Roadside	N	333350	350590	3	N	1.0	3.0	2.0
33	Smithfield Road	Roadside	N	333981	350171	1.5	N	3.0	4.0	1.0
37	Rossett	Roadside	N	336635	357211	1.5	N	5.0	7.0	2.0
38	Pentre Bach	Roadside	N	331765	350132	1.2	N	0.0	2.0	2.0

Site ID	Site Name	Site Type	Associated with Named AQMA?	X OS Grid Reference	Y OS Grid Reference	Site Height (m)	Collocated with a Continuous Analyser?	Distance from monitor to nearest relevant exposure (m) (1)	Distance from Kerb to Nearest Relevant Exposure (m)	Distance from Kerb to Monitor (m)
44	Cobden Road	Roadside	N	332935	350278	2.0	N	4.0	5.0	1.0
40	Overton	Roadside	N	337449	341702	1.5	N	12.0	14.0	2.0
41	Marchwiel	Roadside	N	335407	347890	2.0	N	1.0	3.0	2.0
43	Hightown	Roadside	N	333966	349691	2.0	N	9.0	10.0	1.0
46	Regent Street	Roadside	N	333063	350587	2.0	N	14.0	15.0	1.0
48	Church Street	Roadside	N	329082	337590	1.5	N	4.0	5.0	1.0
54	Pandy Lane	Roadside	N	333628	352942	1.5	N	4.0	9.0	5.0
55	Llay	Suburban	N	333078	355649	1.0	N	0.0	9.0	9.0
56	Top Farm Road	Roadside	N	332944	352293	1.5	N	0.0	12.0	12.0
57	Ysgol Plas Coch	Intermediate	N	332786	351637	1.5	N	0.0	20.0	20.0
58	St Annes School	Suburban	N	334954	350090	2.0	N	38.5	40.0	1.5
59	Cross Lanes	Roadside	N	337541	346942	1.5	N	0.0	6.0	6.0

Site ID	Site Name	Site Type	Associated with Named AQMA?	X OS Grid Reference	Y OS Grid Reference	Site Height (m)	Collocated with a Continuous Analyser?	Distance from monitor to nearest relevant exposure (m) (1)	Distance from Kerb to Nearest Relevant Exposure (m)	Distance from Kerb to Monitor (m)
60	St Pauls School	Suburban	N	340016	349982	2.0	N	13.5	15.0	1.5
61	Berse Road	Roadside	N	332363	351095	2.0	N	0.0	12.0	12.0
AURN (triplicate)	Victoria Road 1	Roadside	N	332900	349900	2.0	Y	2.0	7.0	5.0

Notes:

(1) 0m indicates that the sited monitor represents exposure and as such no distance calculation is required.

Figure 2.3 – Map of Non-Automatic Monitoring Sites: IACC

Figure 2.4 – Map of Non-Automatic Monitoring Sites: CBC

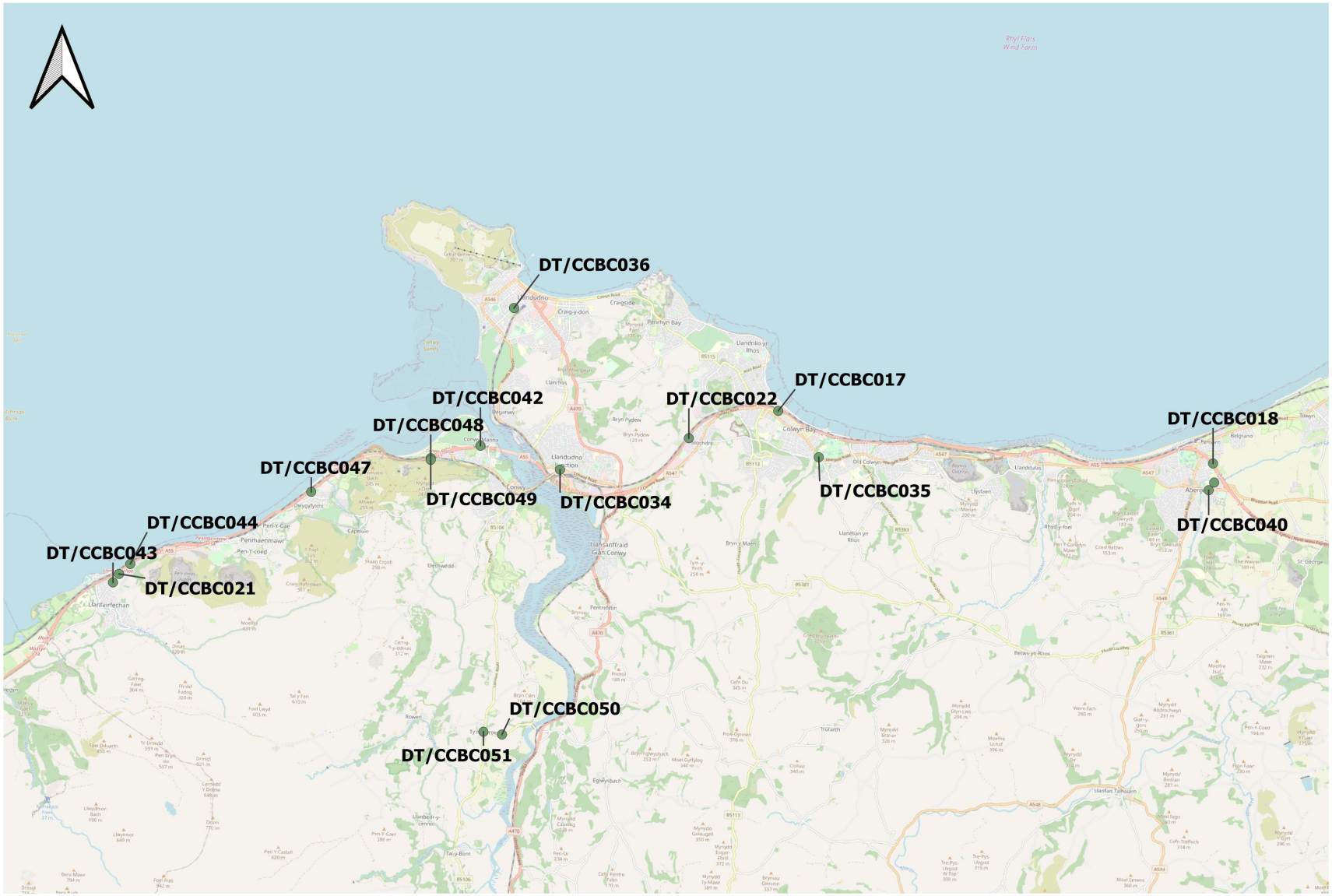


Figure 2.5 – Map of Non-Automatic Monitoring Sites – DCC Ruthin

Figure 2.6 – Map of Non-Automatic Monitoring Sites – DCC North

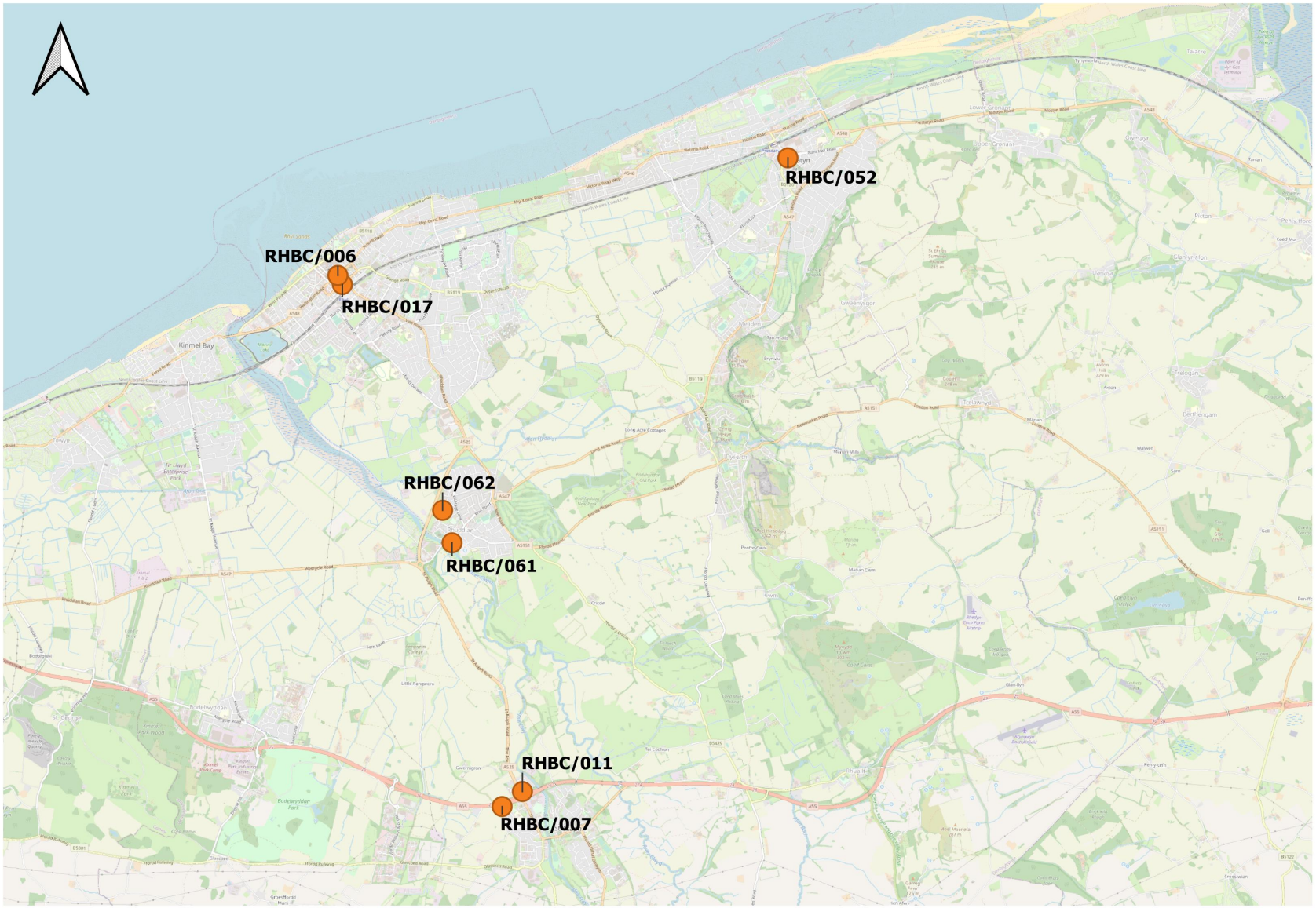


Figure 2.7 – Map of Non-Automatic Monitoring Sites – DCC Denbigh

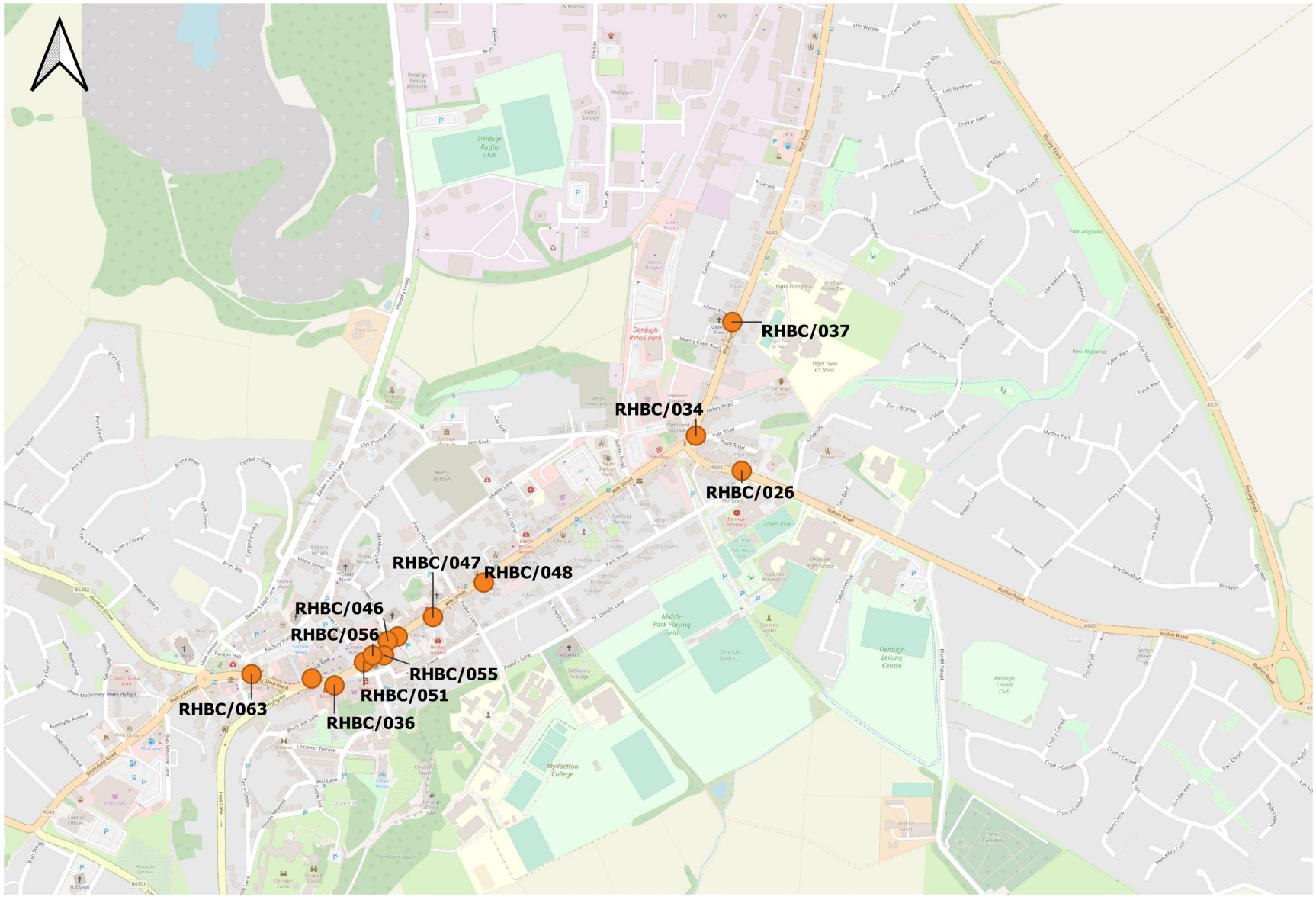


Figure 2.8 – Map of Non-Automatic Monitoring Sites – DCC Llangollen

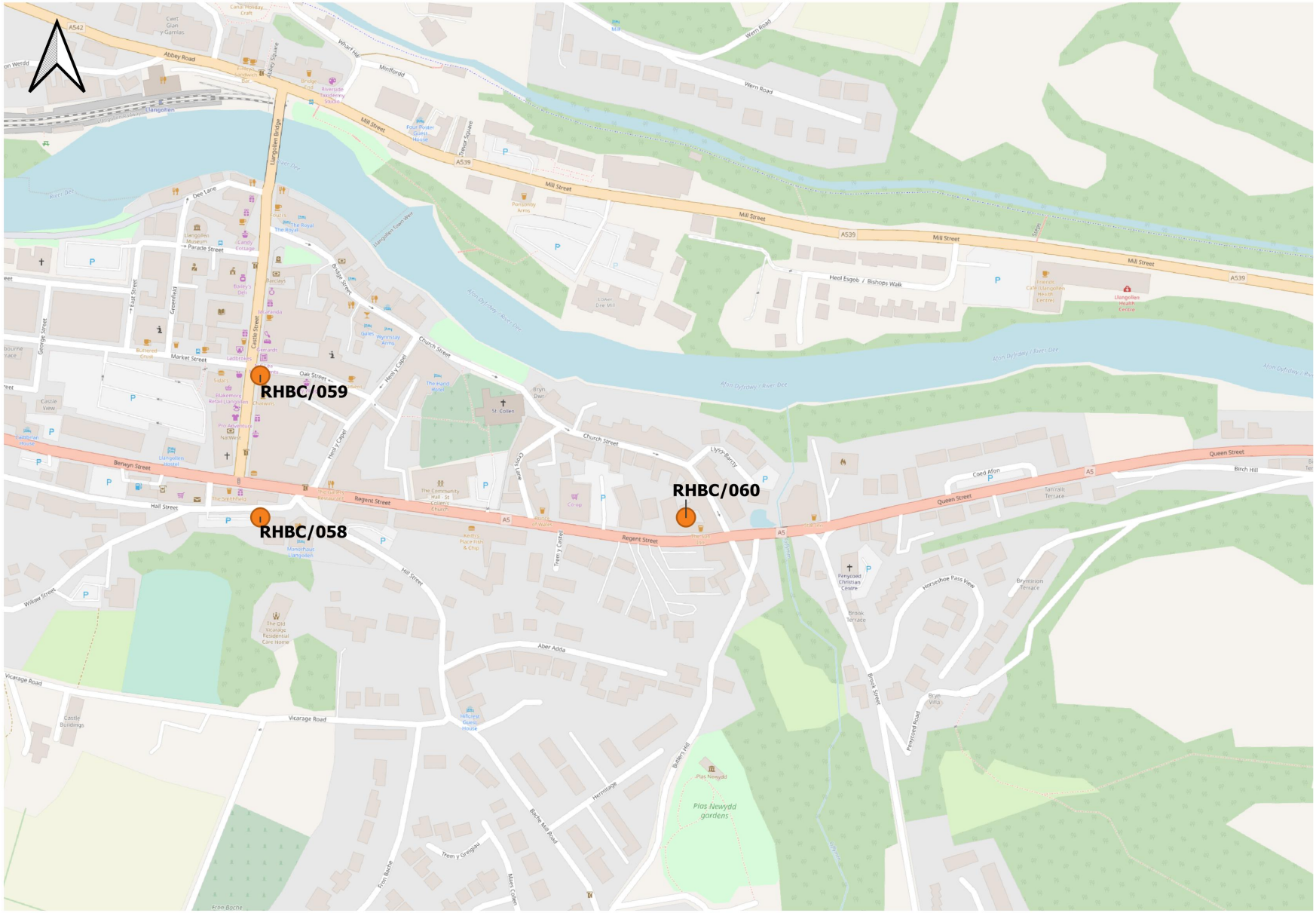


Figure 2.9 – Map of Non-Automatic Monitoring Sites – FCC South

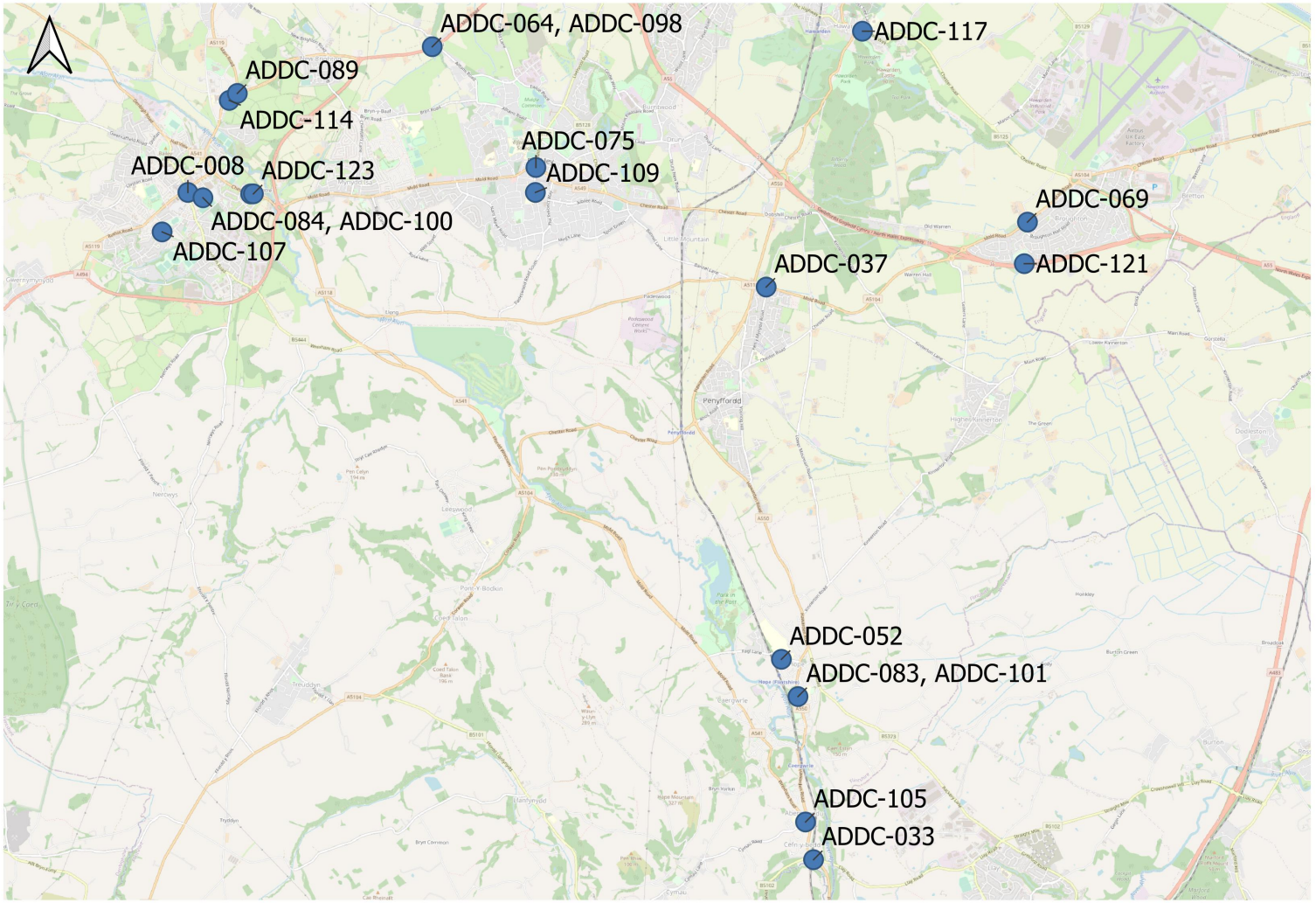


Figure 2.10 – Map of Non-Automatic Monitoring Sites – FCC North East

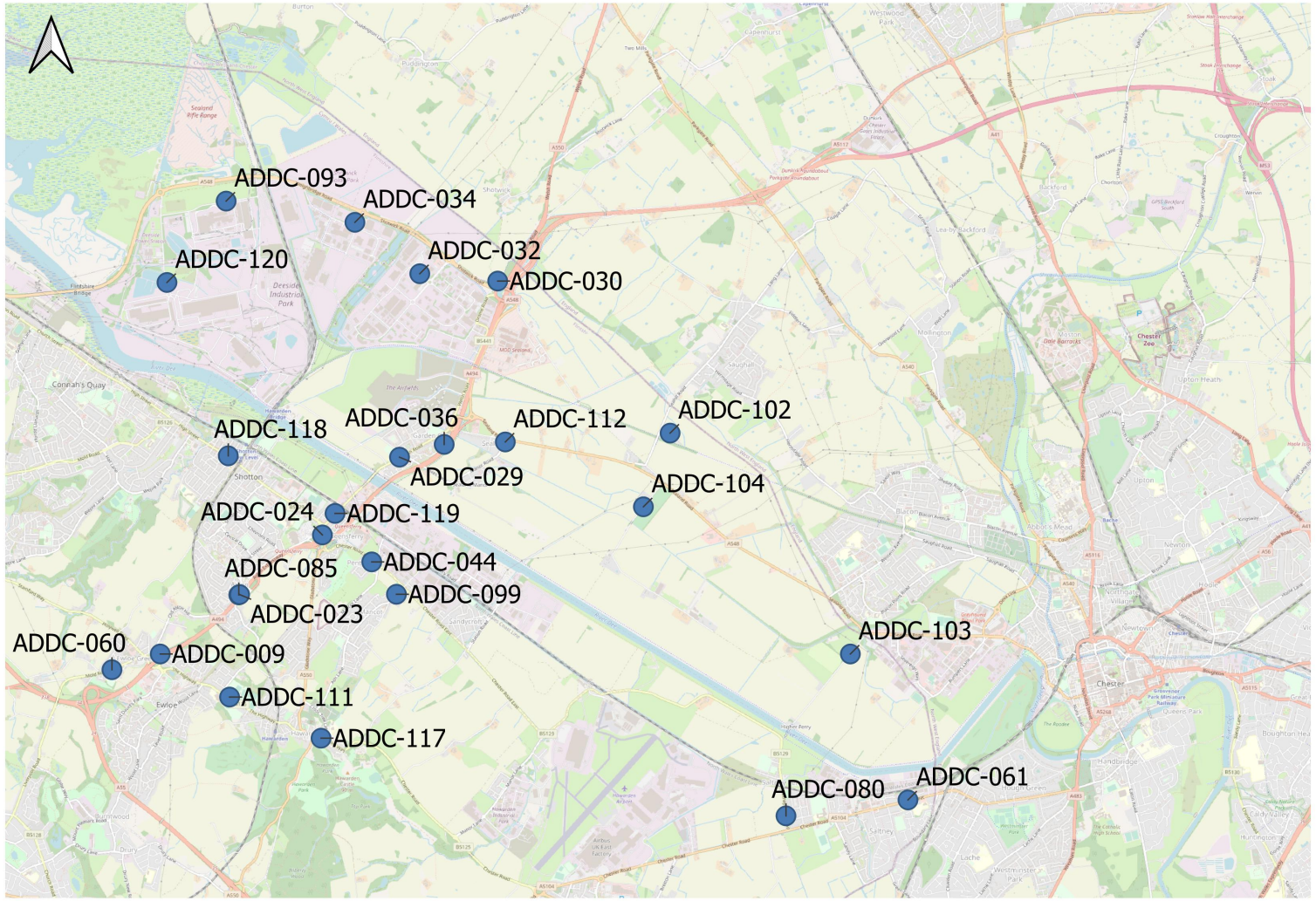


Figure 2.11 – Map of Non-Automatic Monitoring Sites – FCC North West

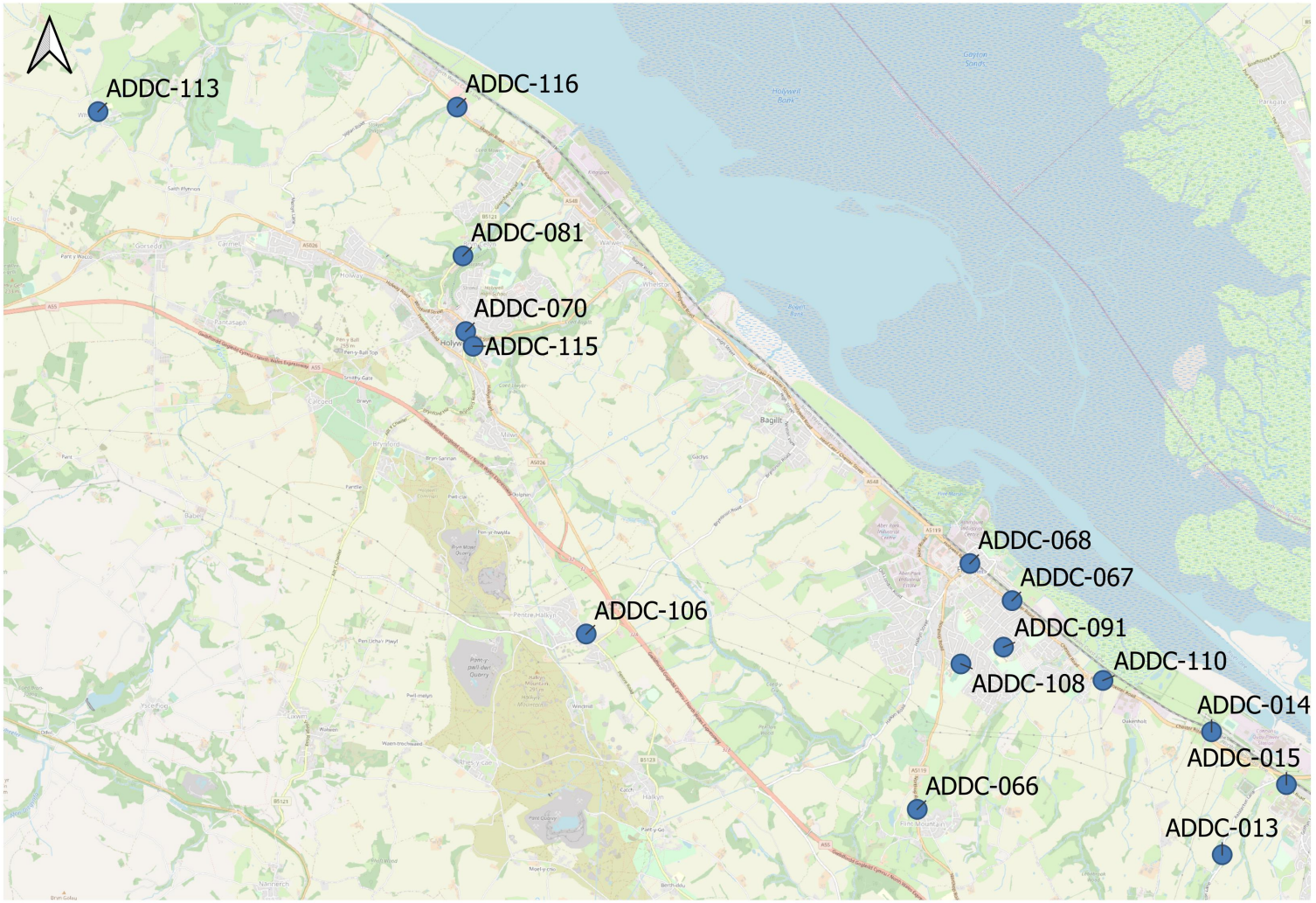


Figure 2.12 – Map of Non-Automatic Monitoring Sites – GC North

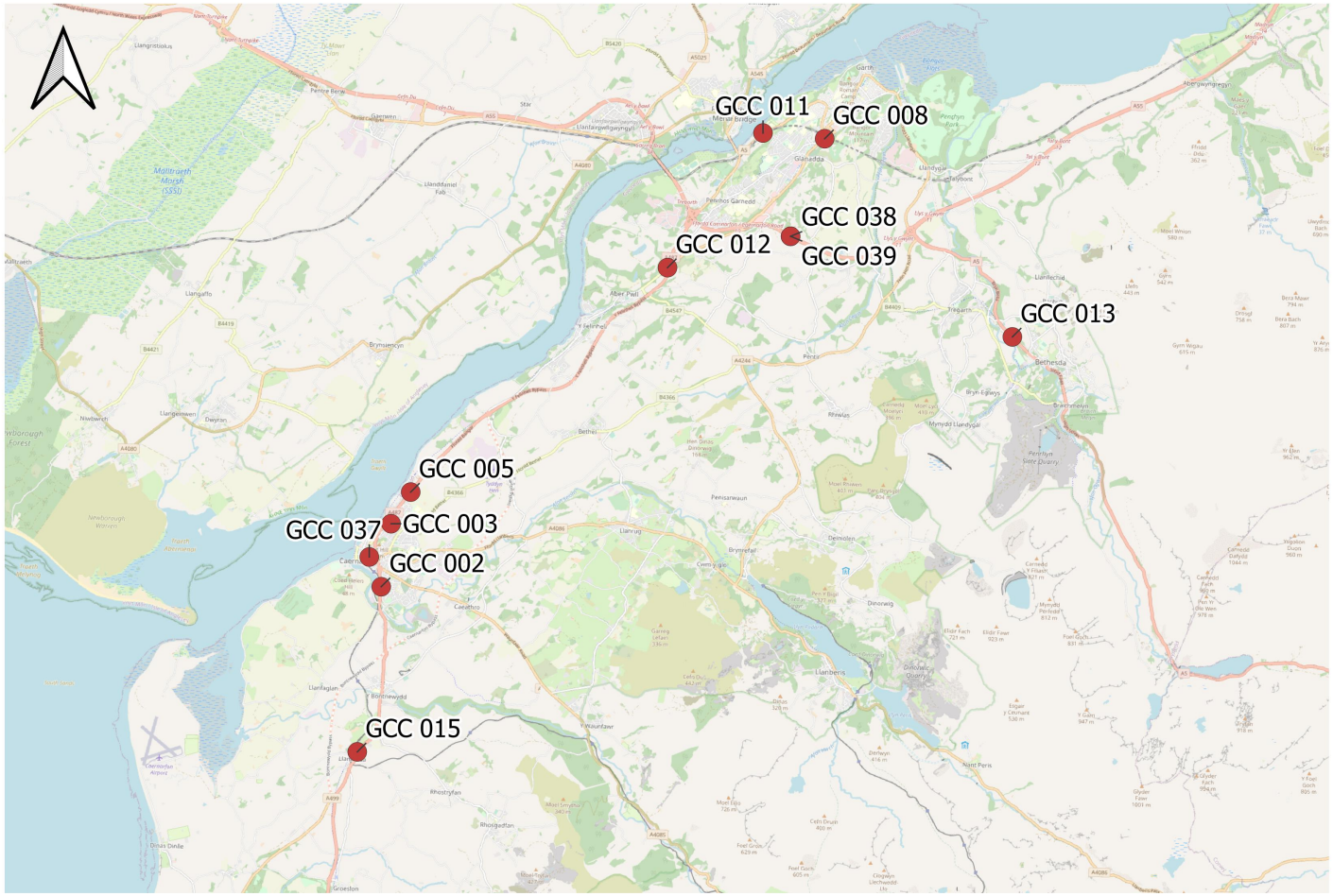


Figure 2.13 – Map of Non-Automatic Monitoring Sites – GC South

Figure 2.14 – Map of Non-Automatic Monitoring Sites WCBC North

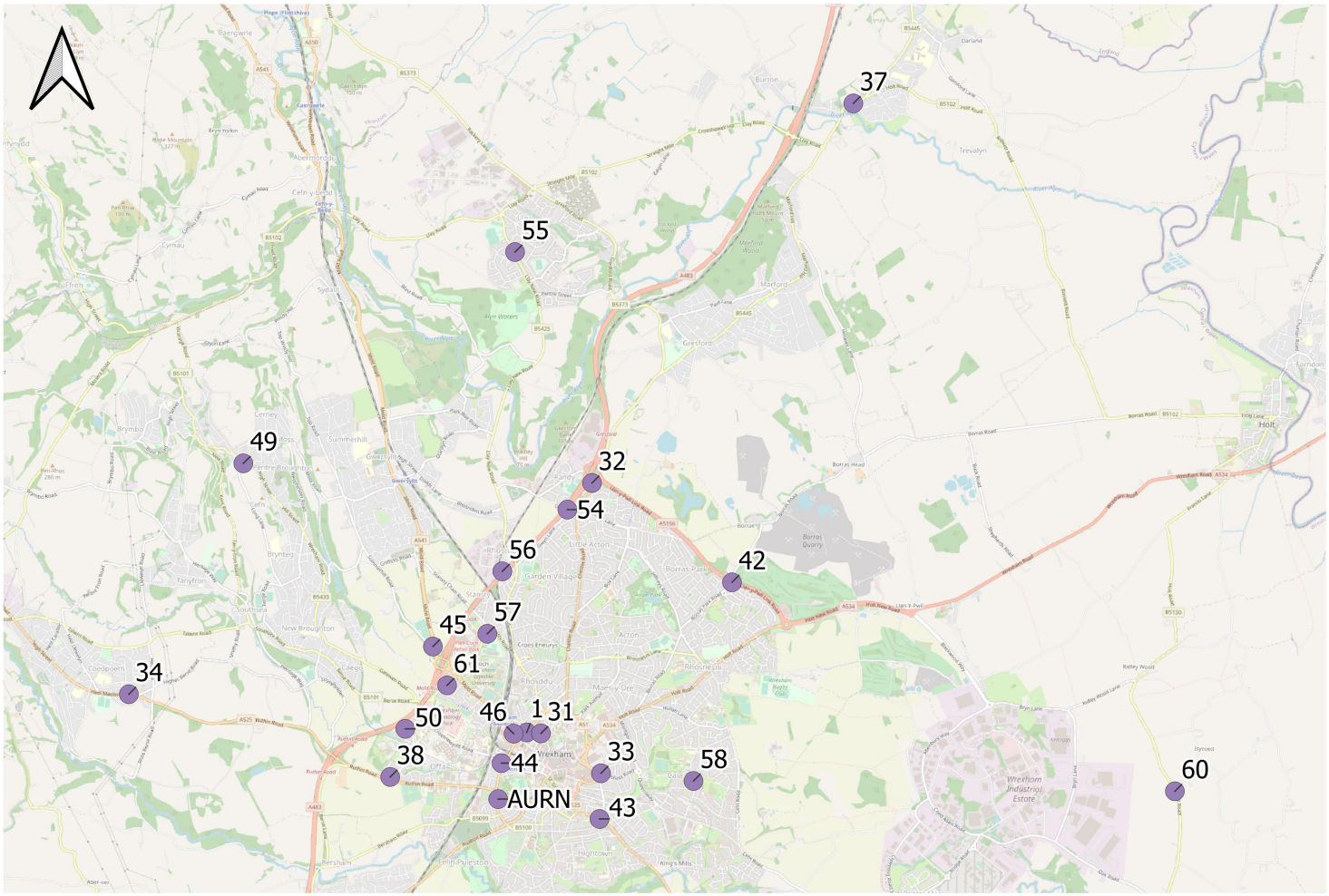
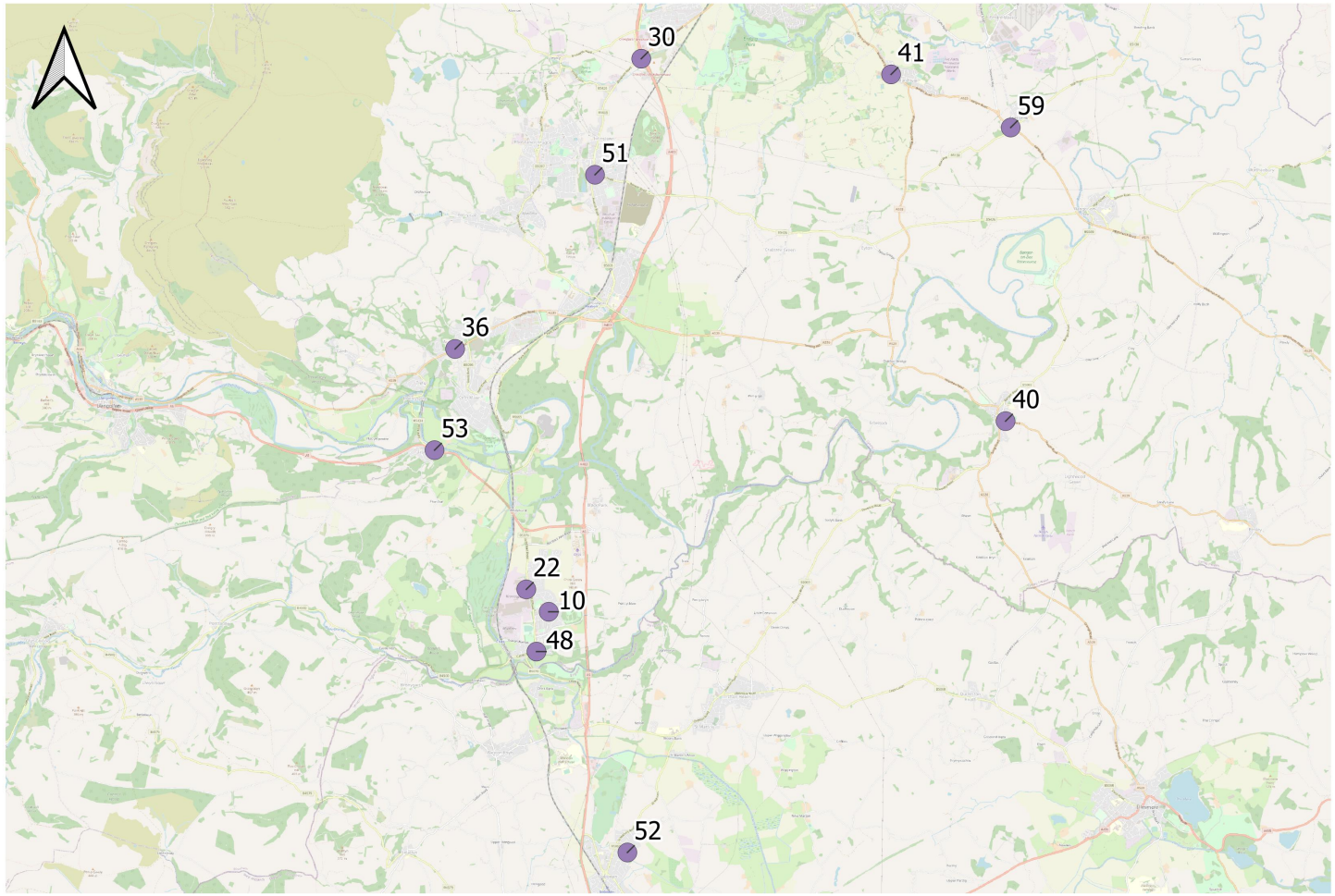


Figure 2.15 – Map of Non-Automatic Monitoring Sites WCBC South



2020 Air Quality Monitoring Results

Table 2.3 – Annual Mean NO_2 Monitoring Results (µg/m^3)

Site ID	Site Type	Monitoring Type	Valid Data Capture for Monitoring Period (%) [1]	Valid Data Capture 2020 (%) [2]	2016	2017	2018	2019	2020
IACC									
IACC-081	Roadside	Diffusion Tube	100	100	-	-	19.7[4]	18.7	14.8
IACC-082	Roadside	Diffusion Tube	100	100	-	-	18.6[4]	18.1	13.6
IACC-083	Roadside	Diffusion Tube	100	100	-	-	-	10.8	7.9
IACC-084	Roadside	Diffusion Tube	100	100	-	-	-	7.8[5]	6.4
CCBC									
CBC-017	Roadside	Diffusion Tube	100	100	24.4	16.5	17.3	16.3	11.4
CBC-018	Roadside	Diffusion Tube	100	100	20.7	19.8	18.0	17.2	12.8
CBC-021	Roadside	Diffusion Tube	100	100	17.5	14.2	16.3	15.9	11.2
CBC-022	Roadside	Diffusion Tube	100	100	20.4	18.7	18.3	16.7	13.0
CBC-034	Roadside	Diffusion Tube	100	100	20.8	22.0	20.0	20.0	15.2
CBC-035	Roadside	Diffusion Tube	100	100	-	15.5	16.5	16.1	11.6
CBC-036	Roadside	Diffusion Tube	100	100	-	10.8	11.6	11.1	7.9
CBC-040	Roadside	Diffusion Tube	100	100	-	-	15.8	14.2	10.8
CBC-041	Roadside	Diffusion Tube	100	100	-	-	14.1	14.0	10.1
CBC-042	Roadside	Diffusion Tube	100	100	-	-	-	15.8	11.5
CBC-043	Roadside	Diffusion Tube	100	100	-	-	-	11.4	8.7
CBC-044	Roadside	Diffusion Tube	90	90	-	-	-	18.5	13.2
CBC-045	Roadside	Diffusion Tube	100	100	-	-	-	10.8	7.7
CBC-046	Roadside	Diffusion Tube	100	100	-	-	-	21.3	15.0
CBC-047	Roadside	Diffusion Tube	100	100	-	-	-	15.4	12.0
CBC-048	Roadside	Diffusion Tube	100	100	-	-	-	16.7	12.0
CBC-049	Roadside	Diffusion Tube	100	100	-	-	-	14.1	10.5
CBC-050	Roadside	Diffusion Tube	100	100	-	-	-	-	4.6
CBC-051	Roadside	Diffusion Tube	100	100	-	-	-	-	6.6
DCC									
RHBC/006	Roadside	Diffusion Tube	75	75	23.5	24.9	25.3	23.6	18.3
RHBC/017	Roadside	Diffusion Tube	65	65	26.4	25.7	25.1	23.4	22.3[4]
RHBC/058	Roadside	Diffusion Tube	75	75	-	-	32.7	34.2	24.5

Site ID	Site Type	Monitoring Type	Valid Data Capture for Monitoring Period (%) [1]	Valid Data Capture 2020 (%) [2]	2016	2017	2018	2019	2020
RHBC/060	Roadside	Diffusion Tube	75	75	-	-	10.8	10.4	8.3
RHBC/007	Suburban	Diffusion Tube	75	75	15.5	14.1	14.5	12.9	10.5
RHBC/051	Roadside	Diffusion Tube	75	75	26.7	24.8	24.2	21.8	18.7
RHBC/026	Suburban	Diffusion Tube	75	75	18.6	19.1	17.0	16.7	14.1
RHBC/062	Roadside	Diffusion Tube	75	75	15.5	15.2	14.2	11.8	7.2
RHBC/011	Roadside	Diffusion Tube	75	75	21.1	21.3	19.8	18.6	15.2
RHBC/063	Suburban	Diffusion Tube	75	75	16.1	15.3	14.0	13.8	17.6
RHBC/027	Suburban	Diffusion Tube	75	75	33.1	33.1	32.5	30.0	27.2
RHBC/059	Roadside	Diffusion Tube	75	75	-	-	13.7	14.4	11.2
RHBC/023	Roadside	Diffusion Tube	75	75	19.8	21.3	20.5	20.3	16.1
RHBC/046	Suburban	Diffusion Tube	75	75	29.1	32.4	28.0	28.6	23.6
RHBC/047	Roadside	Diffusion Tube	75	75	25.0	26.3	24.5	22.3	20.3
RHBC/048	Roadside	Diffusion Tube	75	75	23.3	22.3	21.0	21.3	20.0
RHBC/040	Roadside	Diffusion Tube	75	75	26.6	26.2	23.7	26.4	22.5
RHBC/041	Roadside	Diffusion Tube	40	40	16.8	17.2	14.6	14.1	18.7[4]
RHBC/055	Roadside	Diffusion Tube	75	75	24.1	22.2	21.7	19.7	17.1
RHBC/056	Roadside	Diffusion Tube	75	75	31.2	29.3	28.7	26.1	23.2
RHBC/034	Roadside	Diffusion Tube	75	75	18.9	17.6	14.7	16.2	14.1
RHBC/035	Roadside	Diffusion Tube	75	75	18.9	17.8	18.2	16.8	13.2
RHBC/036	Kerbside	Diffusion Tube	75	75	28.2	25.2	25.1	24.8	20.0
RHBC/037	Roadside	Diffusion Tube	75	75	15.2	14.1	13.2	14.1	10.9
RHBC/052	Roadside	Diffusion Tube	75	75	17.1	15.7	14.8	14.8	11.6
RHBC/061	Roadside	Diffusion Tube	75	75	-	-	16.4	14.5	12.0
FCC									
ADDC-008	Kerbside	Diffusion tube	25	25	25.6	23.7	24.4	20.8	15.5[4]
ADDC-009	Urban	Diffusion tube	75	75	20.6	17.4	17.2	17.5	13.4
ADDC-085	Kerbside	Diffusion tube	77	77	33.7	24.4	28.2	25.2	19.1
ADDC-111	Kerbside	Diffusion tube	52	52	18.0	16.0	16.0	16.0	10.7[4]
ADDC-105	Roadside	Diffusion tube	70	70	-	-	-	14.5	10.8[4]
ADDC-013	Rural background	Diffusion tube	77	77	14.0	8.1	10.5	10.5	6.7
ADDC-014	Kerbside	Diffusion tube	77	77	15.0	13.2	14.9	14.8	11.0
ADDC-015	Urban background	Diffusion tube	86	86	14.5	11.7	12.6	12.3	9.7
ADDC-106	Roadside	Diffusion tube	60	60	-	-	-	12.5	9.6[4]

Site ID	Site Type	Monitoring Type	Valid Data Capture for Monitoring Period (%) [1]	Valid Data Capture 2020 (%) [2]	2016	2017	2018	2019	2020
ADDC-107		Diffusion tube	44	44	-	-	-	-	7.8[4]
ADDC-064, ADDC-098	Kerbside	Diffusion tube	77	77	35.6	29.3	28.2	28.2	23.6
ADDC-117	Kerbside	Diffusion tube	35	35	34.0	34.5	33.9	32.5	10.0[4]
ADDC-099	Kerbside	Diffusion tube	60	60	12.7	13.4	14.7	13.9	17.7[4]
ADDC-023	Kerbside	Diffusion tube	85	85	27.9	25.9	26.7	27.8	18.6
ADDC-024	Urban	Diffusion tube	58	58	26.7	24.4	24.7	24.3	17.6[4]
ADDC-118	Kerbside	Diffusion tube	77	77	29.2	23.8	24.8	23.6	10.7
ADDC-080	Kerbside	Diffusion tube	85	85	14.5	13.9	14.5	13.6	13.4
ADDC-066	Kerbside	Diffusion tube	85	85	25.0	19.5	22.6	19.3	17.7
ADDC-116	Kerbside	Diffusion tube	67	67	23.4	22.0	20.7	22.1	14.6[4]
ADDC-029	Kerbside	Diffusion tube	85	85	15.2	18.0	20.0	19.1	14.3
ADDC-030	Rural background	Diffusion tube	77	77	18.6	14.6	17.6	17.2	17.7
ADDC-032	Industrial	Diffusion tube	85	85	24.4	23.2	24.4	24.3	14.4
ADDC-033	Kerbside	Diffusion tube	85	85	31.4	31.1	32.0	31.8	11.0
ADDC-034	Industrial	Diffusion tube	85	85	21.3	16.0	17.2	16.6	12.9
ADDC-120	Industrial	Diffusion tube	69	69	16.3	13.8	14.2	14.4	14.1[4]
ADDC-036	Roadside	Diffusion tube	85	85	21.3	20.0	20.8	17.1	11.5
ADDC-037	Kerbside	Diffusion tube	85	85	15.5	18.6	17.9	18.3	20.1
ADDC-093	Industrial	Diffusion tube	85	85	18.0	16.6	16.6	16.6	14.3
ADDC-044	Kerbside	Diffusion tube	15	15	24.9	23.9	24.0	24.3	-
ADDC-067	Kerbside	Diffusion tube	67	67	23.6	21.3	20.2	20.3	15.8[4]
ADDC-068	Kerbside	Diffusion tube	85	85	20.2	18.2	-	16.4[4]	16.7
ADDC-069	Kerbside	Diffusion tube	77	77	26.9	23.8	24.8	24.4	14.0
ADDC-070	Kerbside	Diffusion tube	85	85	25.3	21.4	21.3	21.2	17.4
ADDC-081	Kerbside	Diffusion tube	60	60	21.0	18.4	19.8	17.6	18.7[4]
ADDC-119	Kerbside	Diffusion tube	85	85	23.2	20.8	20.9	20.8	8.4
ADDC-114	Kerbside	Diffusion tube	77	77	26.3	21.3	21.5[4]	24.8[4]	11.8
ADDC-052	Kerbside	Diffusion tube	85	85	19.1	12.9	11.6	11.7	10.8
ADDC-115	Kerbside	Diffusion tube	77	77	17.2	16.2	17.3	16.7	7.2
ADDC-112	Kerbside	Diffusion tube	85	85	16.8	14.9	14.9	13.4	9.2
ADDC-113	Kerbside	Diffusion tube	50	50	12.0	8.9	8.6	8.8	8.8[4]
ADDC-091	Kerbside	Diffusion tube	60	60	12.3	9.9[4]	11.9	11.9	18.2[4]
ADDC-108	Kerbside	Diffusion tube	69	69	9.2	9.6[4]	12.2[4]	11.2	7.8[4]

Site ID	Site Type	Monitoring Type	Valid Data Capture for Monitoring Period (%) [1]	Valid Data Capture 2020 (%) [2]	2016	2017	2018	2019	2020
ADDC-110	Kerbside	Diffusion tube	65	65	25.5	27.9[4]	22.3[4]	21.8	13.8[4]
ADDC-084, ADDC-100	Kerbside	Diffusion tube	85	85	17.8	11.4	9.5*	10.0[4]	21.4
ADDC-060	Kerbside	Diffusion tube	31	31	12.7	17.5	17.8	17.8	15.3[4]
ADDC-061	Kerbside	Diffusion tube	50	50	36.6	18.4	18.4	16.7	12.6[4]
ADDC-121	Kerbside	Diffusion tube	85	85	18.8	16.2	16.6	16.6	12.7
ADDC-083, ADDC-101	Kerbside	Diffusion tube	85	85	16.9	15.3	16.6	16.4	25.3
ADDC-109	Kerbside	Diffusion tube	77	77	16.6	9.3	12.2	10.4	8.6
ADDC-075	Kerbside	Diffusion tube	85	85	26.7	23.4	23.3	21.2	17.8
ADDC-102	Kerbside	Diffusion tube	67	67	13.2	10.9	11.2	11.0	8.4[4]
ADDC-103	Kerbside	Diffusion tube	50	50	13.0	8.2	10.3	9.8	8.5[4]
ADDC-104	Kerbside	Diffusion tube	60	60	13.2	10.3[4]	11.3[4]	11.1	8.4[4]
ADDC-089	Kerbside	Diffusion tube	58	58	37.8	37.4	37.6	35.9	26.3[4]
ADDC-122	Roadside	Diffusion tube	77	77	-	34.8[4]	27.0	26.5	23.3
ADDC-123	Roadside	Diffusion tube	50	50	-	29.1[4]	18.7	23.2	15.8[4]
GC									
GCC 002	Kerbside	Diffusion tube	60	60	31.4	31.4	31.2	30.1	26.0[4]
GCC 003	Urban Background	Diffusion tube	60	60	10.5	9.9[4]	10.2	9.3	7.1[4]
GCC 005	Kerbside	Diffusion tube	60	60	27.6	27.1	27.9	28.5	17.4[4]
GCC 008	Kerbside	Diffusion tube	60	60	22.8	22.5	23.4	22.2	15.7[4]
GCC 011	Kerbside	Diffusion tube	60	60	23.8	21.5	25.1	22.8	16.4[4]
GCC 012	Kerbside	Diffusion tube	52	52	26.9	26.1	26.8	24.6	17.8[4]
GCC 013	Kerbside	Diffusion tube	60	60	21.9	20.3	20.0	19.9	15.2[4]
GCC 015	Roadside	Diffusion tube	60	60	24.8	21.7	22.3	21.3	15.0[4]
GCC 037	Kerbside	Diffusion tube	52	52	25.5	32.6[4]	25.2	21.6[4]	17.0[4]
GCC 038	Roadside	Diffusion tube	60	60	28.6	27.5	28.1	27.5	18.5[4]
GCC 039	Roadside	Diffusion tube	60	60	28.4	27.1	28.6	26.1	20.0[4]
GCC 040	Kerbside	Diffusion tube	60	60	19.1	18.0	18.5	16.7	13.1[4]
WCBC									
Wrexham AURN	Roadside	Automatic	99	99	18.8	16.5	18.2	16.0	13.0
Wrexham Chirk	Industrial	Automatic	44	44	-	-	-	-	21.0

Site ID	Site Type	Monitoring Type	Valid Data Capture for Monitoring Period (%) [1]	Valid Data Capture 2020 (%) [2]	2016	2017	2018	2019	2020
1	Roadside	Diffusion tube	100	100	27.8	27.3	24.9	24.2	18.8
34	Roadside	Diffusion tube	100	100	14.6	14.2	14.5	13.9	10.0
45	Roadside	Diffusion tube	100	100	19.8	17.6	19.4	17.3	13.6
36	Roadside	Diffusion tube	100	100	20	19.5	17.3	17.7	12.2
10	Suburban	Diffusion tube	100	100	13.2	12.5	11.8	12.4	10.0
49	Suburban	Diffusion tube	100	100	-	-	-	9.7	7.2
42	Roadside	Diffusion tube	100	100	25.6	24.4	23.2	20.6	17.1
50	Roadside	Diffusion tube	100	100	-	-	-	19.6	14.7
51	Suburban	Diffusion tube	100	100	-	-	-	16.8	13.6
52	Intermediate	Diffusion tube	100	100	-	-	-	21.4	15.1
53	Roadside	Diffusion tube	100	100	-	-	-	20.1	16.6
22	Intermediate	Diffusion tube	100	100	16.3	15.9	15.7	14.7	13.3
32	Roadside	Diffusion tube	100	100	29.1	26.7	27.2	23.7	18.2
30	Roadside	Diffusion tube	100	100	35.8	33.1	34.9	31.7	26.3
31	Roadside	Diffusion tube	100	100	35.9	31.8	28.6	27.3	20.0
33	Roadside	Diffusion tube	76	76	19.2	17.5	18.5	15.6	19.3
37	Roadside	Diffusion tube	100	100	22.3	20.8	20.3	16.9	12.1
38	Roadside	Diffusion tube	100	100	-	-	-	16.5	12.5
44	Roadside	Diffusion tube	83	83	23.6	21.9	22.7	20.5	16.3[4]
40	Roadside	Diffusion tube	100	100	11.9	10.9	12.1	9.7	7.4
41	Roadside	Diffusion tube	100	100	15.2	15	15.4	13.9	10.3
43	Roadside	Diffusion tube	91	91	17.9	18.4	19.3	17.0	14.4
46	Roadside	Diffusion tube	100	100	24.1	23	24.4	22.7	16.1
48	Roadside	Diffusion tube	100	100	-	-	18.3	14.3	12.3
54	Roadside	Diffusion tube	100	100	-	-	-	22.7	15.2
55	Suburban	Diffusion tube	100	100	-	-	-	11.8	9.4
56	Roadside	Diffusion tube	100	100	-	-	-	18.8	13.4
57	Intermediate	Diffusion tube	100	100	-	-	-	17.7	10.0
58	Suburban	Diffusion tube	100	100	-	-	-	12.7	10.5
59	Roadside	Diffusion tube	100	100	-	-	-	11.2	8.4
60	Suburban	Diffusion tube	100	100	-	-	-	7.7	6.8
61	Roadside	Diffusion tube	92	92	-	-	-	-	12.6
AURN (triplicate)	Roadside	Diffusion tube	100	100	16.7	15.1	16.3	16.1	12.0

Notes:

Exceedances of the NO_2 annual mean objective of 40µg/m^3 are shown in **bold**.

NO_2 annual means exceeding 60µg/m^3, indicating a potential exceedance of the NO_2 1-hour mean objective are shown in **bold and underlined.**

Means for diffusion tubes have been corrected for bias. All means have been "annualised" as per LAQM.TG16 if valid data capture for the full calendar year is less than 75%. See Appendix C for details.

(1) Data capture for the monitoring period, in cases where monitoring was only carried out for part of the year.

(2) Data capture for the full calendar year (e.g. if monitoring was carried out for 6 months, the maximum data capture for the full calendar year is 50%).

(4) Means have been "annualised" as per Boxes 7.9 and 7.10 in LAQM.TG16 as valid data capture for the full calendar year was less than 75%. See Appendix C for details.

(5) Site had less than 3 months worth of data and could not be annualised. Mean presented is for the period of monitoring rather than for the whole year.

Figure 2.16 – Trends in Annual Mean NO_2 Concentrations: IACC

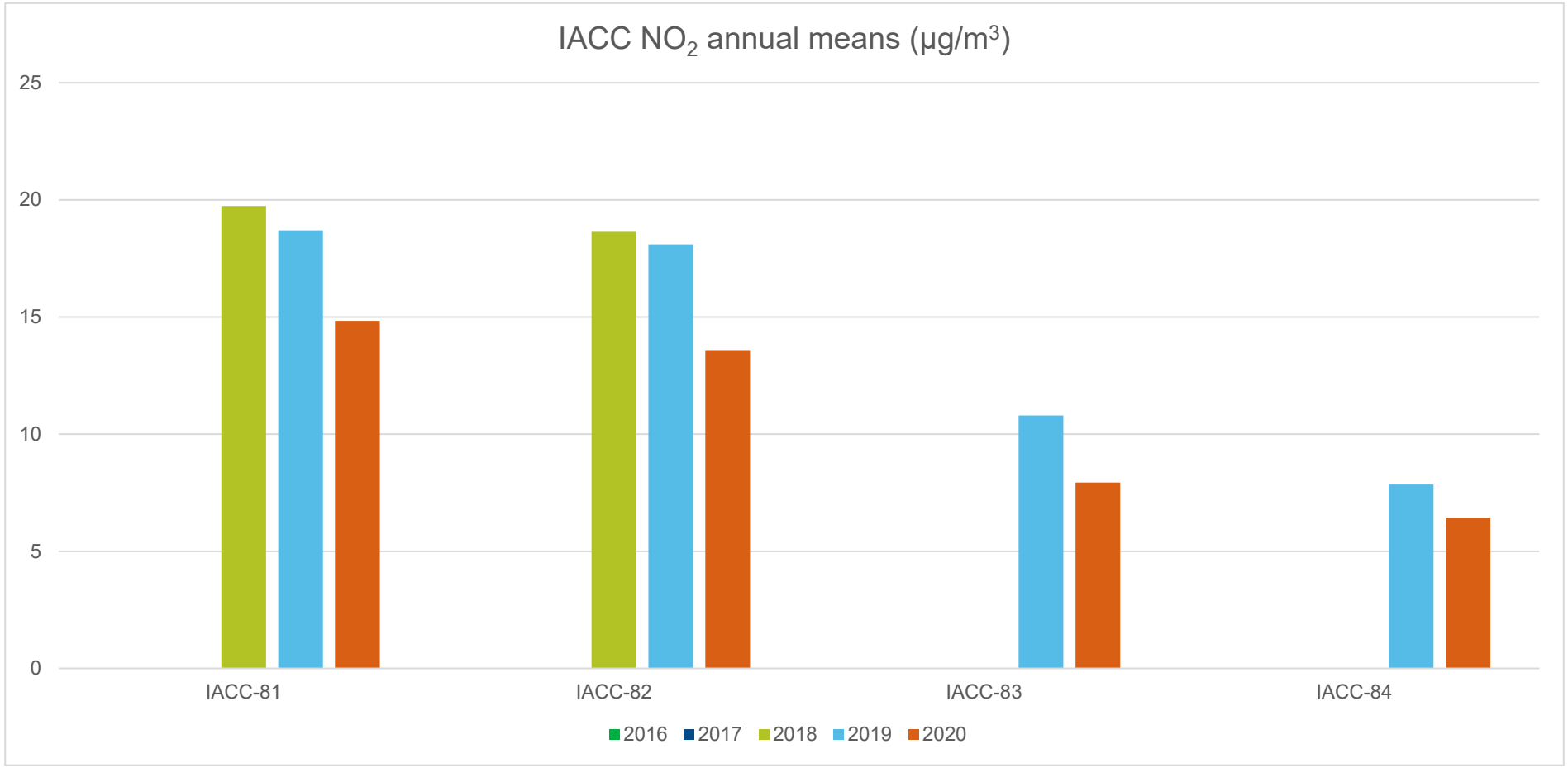


Figure 2.17 – Trends in Annual Mean NO_2 Concentrations: CCBC

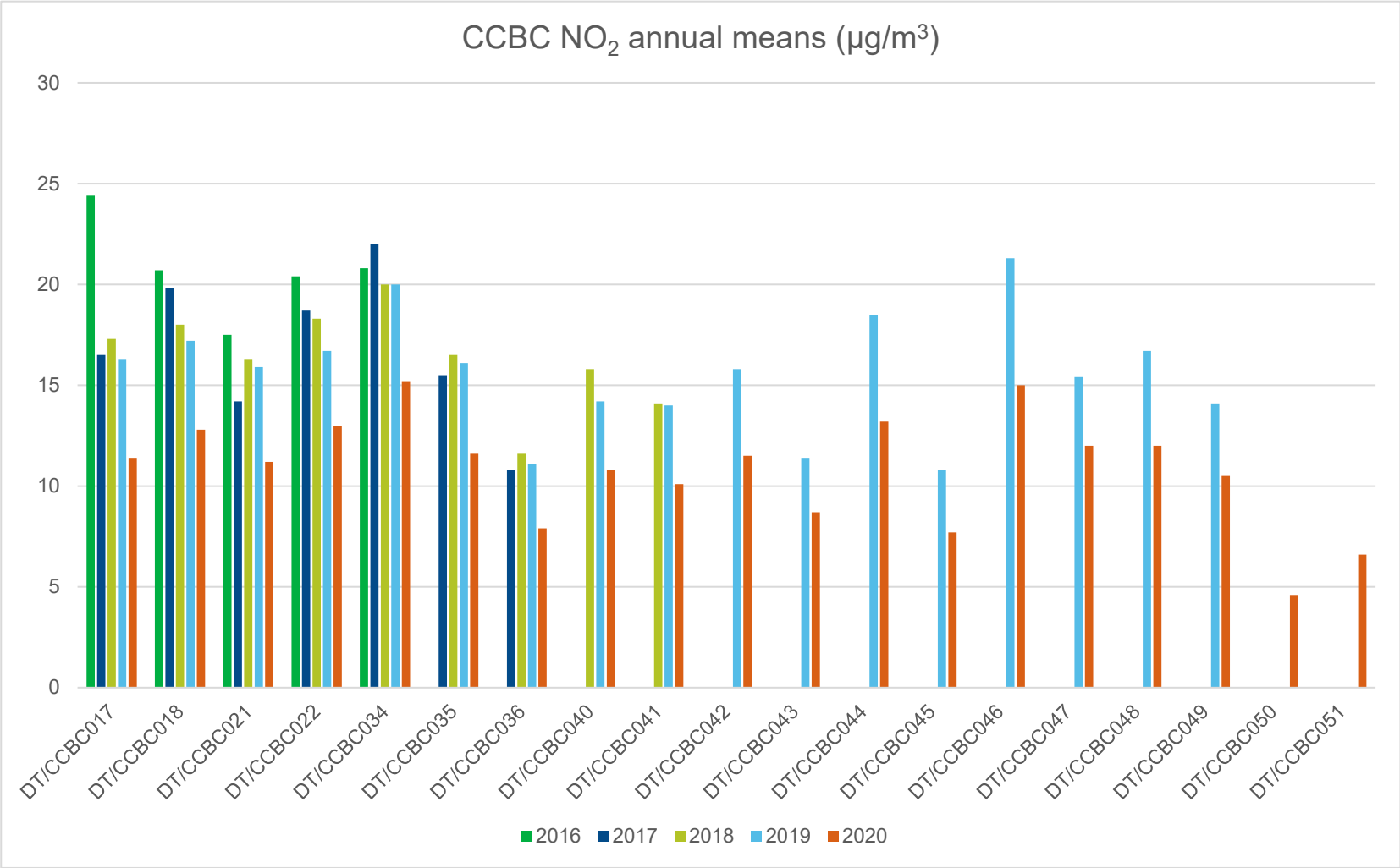


Figure 2.18 – Trends in Annual Mean NO_2 Concentrations: DCC

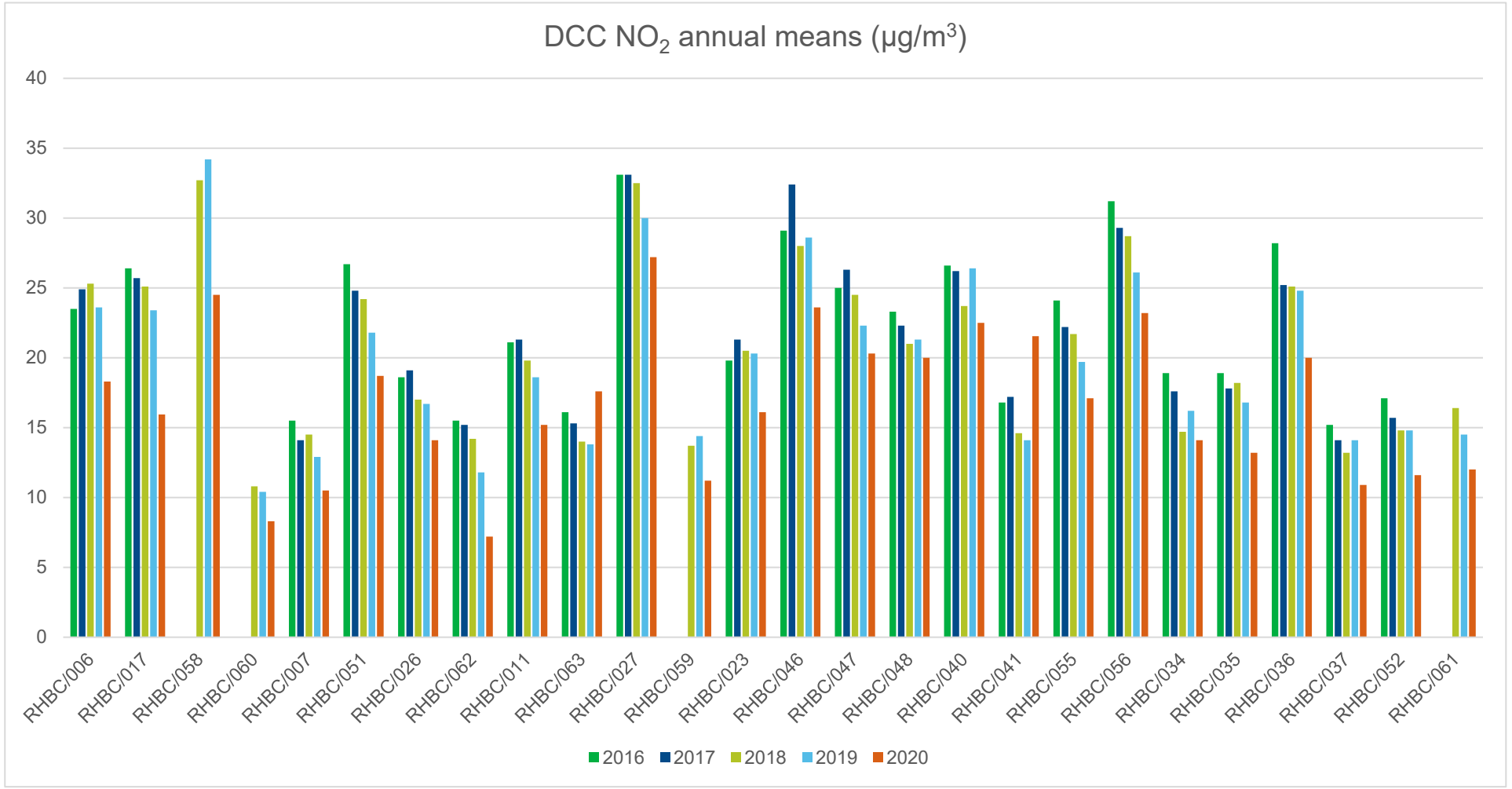


Figure 2.19 – Trends in Annual Mean NO_2 Concentrations: FCC 1/2

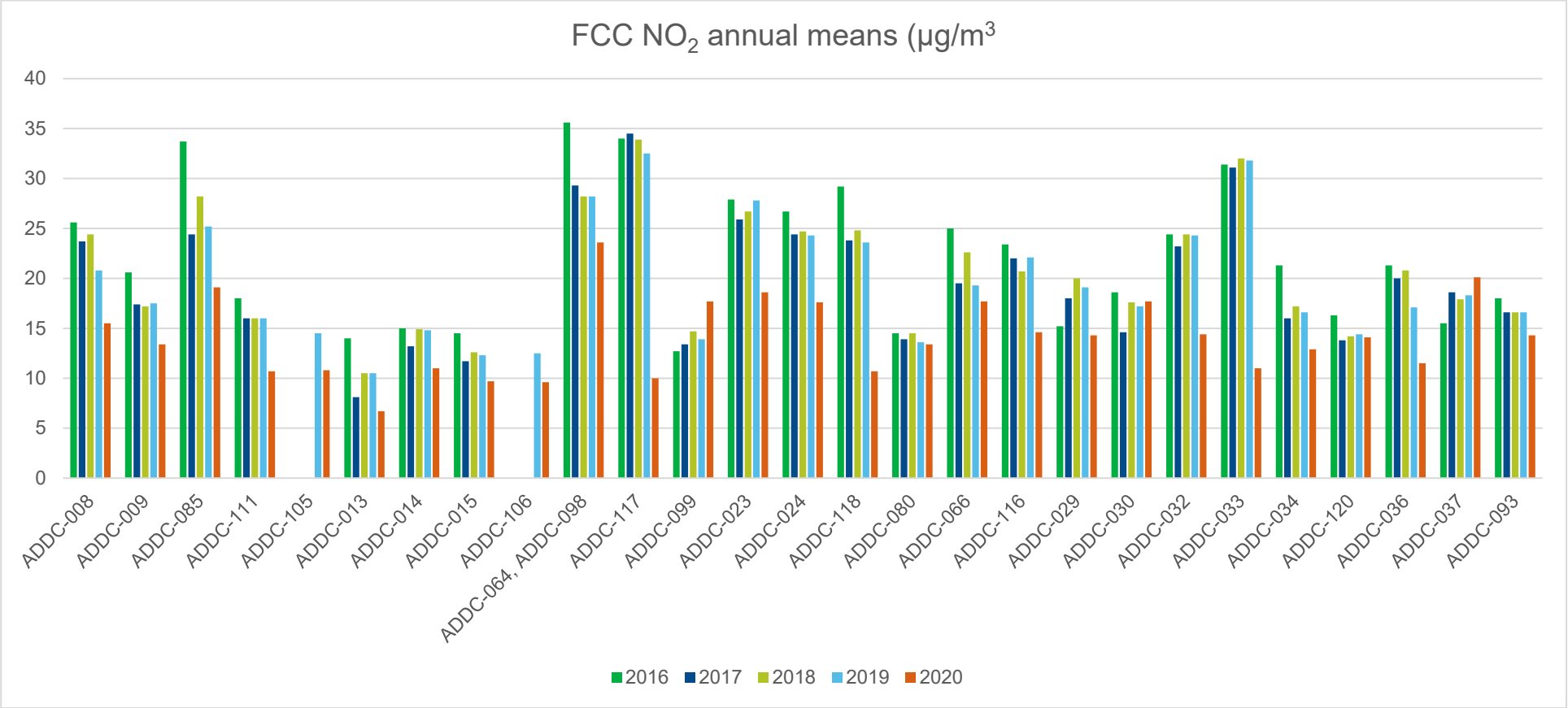


Figure 2.20 – Trends in Annual Mean NO_2 Concentrations: FCC 2/2

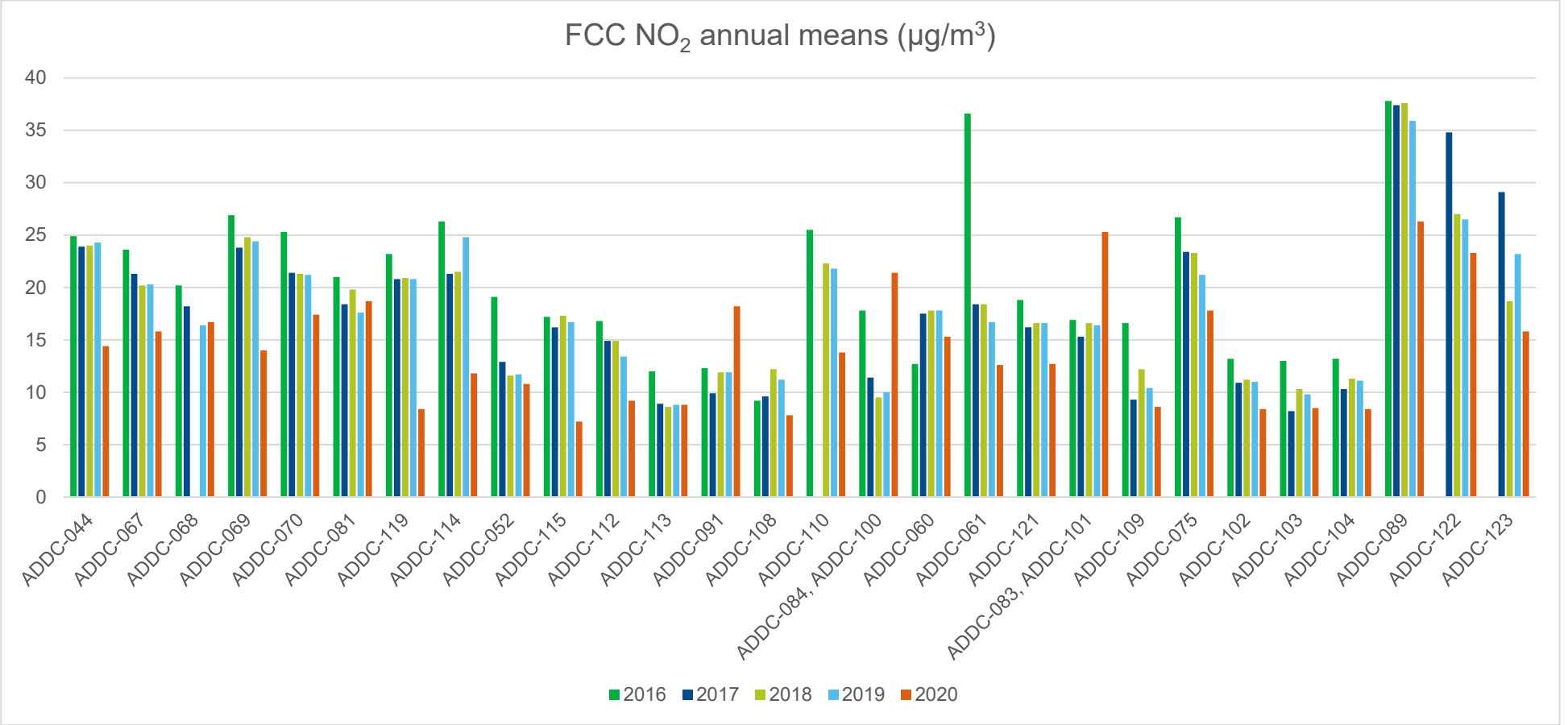


Figure 2.21 – Trends in Annual Mean NO_2 Concentrations: GC

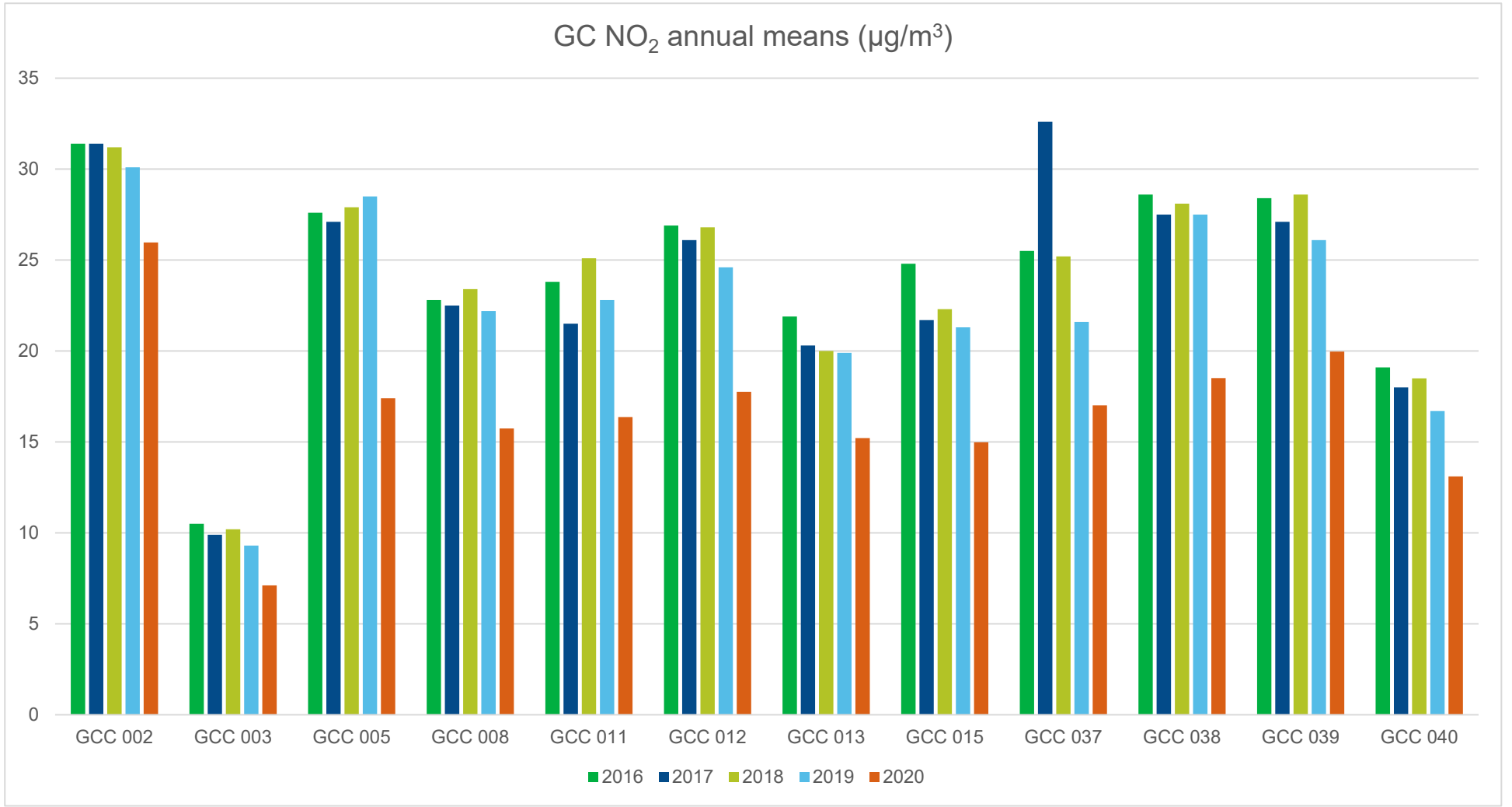


Figure 2.22 – Trends in Annual Mean NO_2 Concentrations: WCBC

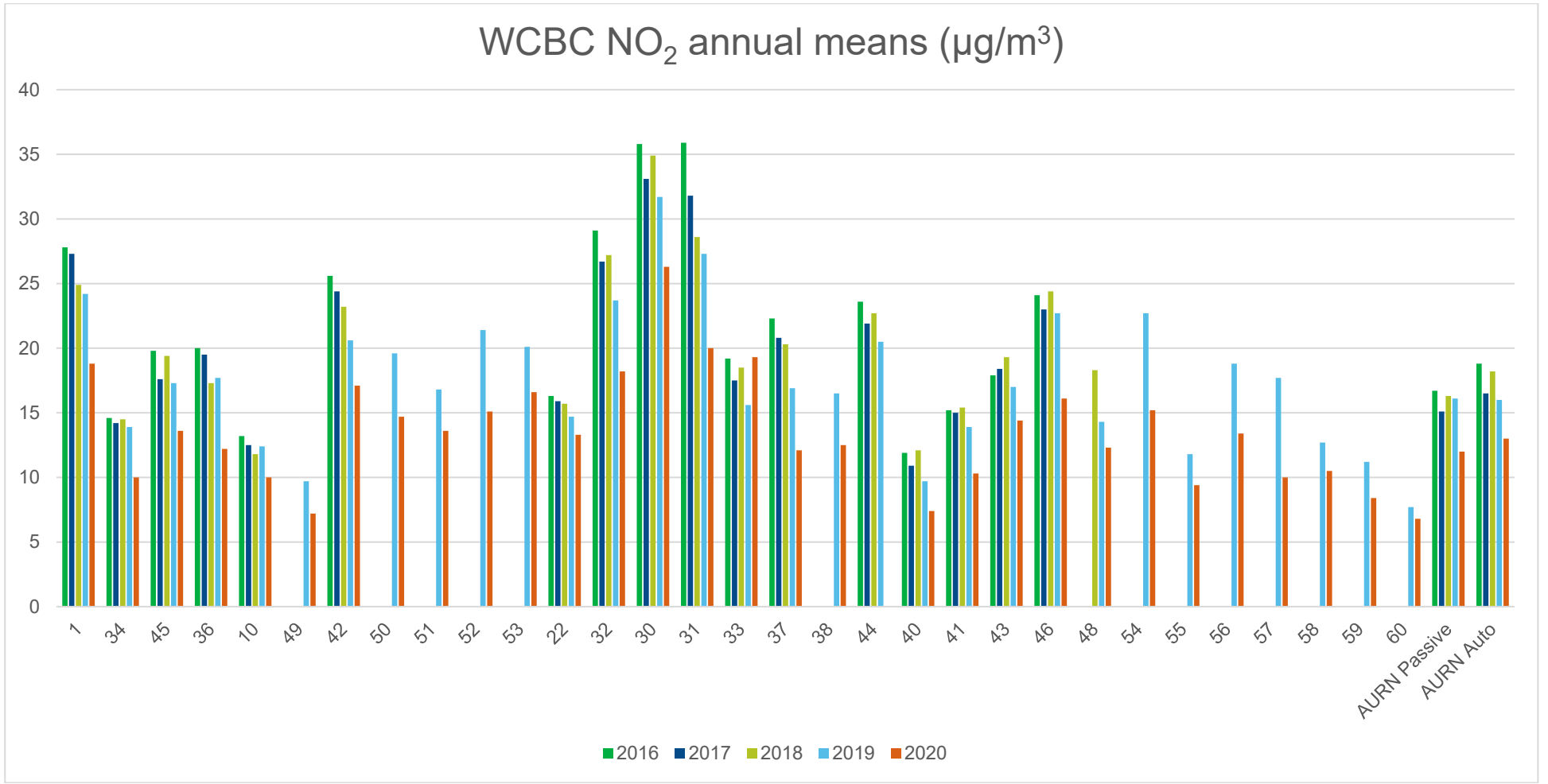


Table 2.4 – 1-Hour Mean NO_2 Monitoring Results, Number of 1-Hour Means > 200µg/m^3

Site ID	Site Type	Monitoring Type	Valid Data Capture for Monitoring Period (%) (1)	Valid Data Capture 2020 (%) (2)	2016	2017	2018	2019	2020
Wrexham AURN	Roadside	Automatic	99	99	0	0	0	0	0
Wrexham Chirk	Industrial	Automatic	44	44	-	-	-	-	0

Notes:

Exceedances of the NO_2 1-hour mean objective (200µg/m^3 not to be exceeded more than 18 times/year) are shown in **bold**.

If the period of valid data is less than 85%, the 99.8th percentile of 1-hour means is provided in brackets.

(1) Data capture for the monitoring period, in cases where monitoring was only carried out for part of the year.

(2) Data capture for the full calendar year (e.g. if monitoring was carried out for 6 months, the maximum data capture for the full calendar year is 50%).

Table 2.5 – Annual Mean PM_{10} Monitoring Results (µg/m^3)

Site ID	Site Type	Valid Data Capture for Monitoring Period (%) (1)	Valid Data Capture 2020 (%) (2)	2016	2017	2018	2019	2020
IACC								
CM1 Llynfaes	Rural	74	74	18.8	13.2	13.0	17.0	25.9(3)
CM2 Brynteg	Rural	93	93	8.1	11.0	10.1	14.0	19.0
CM4 Penhesgyn	Rural	80	80	-	8.1*	9.5	13.0	17.0
Wrexham AURN	Roadside	100	100	-	-	-	12.0	11.0
Wrexham Chirk	Industrial	44	44	-	-	-	-	9.3

Notes:

Exceedances of the PM_{10} annual mean objective of 40µg/m^3 are shown in **bold**.

All means have been "annualised" as per LAQM.TG16 if valid data capture for the full calendar year is less than 75%. See Appendix C for details.

(1) Data capture for the monitoring period, in cases where monitoring was only carried out for part of the year.

(2) Data capture for the full calendar year (e.g. if monitoring was carried out for 6 months, the maximum data capture for the full calendar year is 50%).

(3) All means have been "annualised" as per Boxes 7.9 and 7.10 in LAQM.TG16, valid data capture for the full calendar year is less than 75%. See Appendix C for details.

*Site was opened in November 2017.

Figure 2.23 – Trends in Annual Mean PM_{10} Concentrations

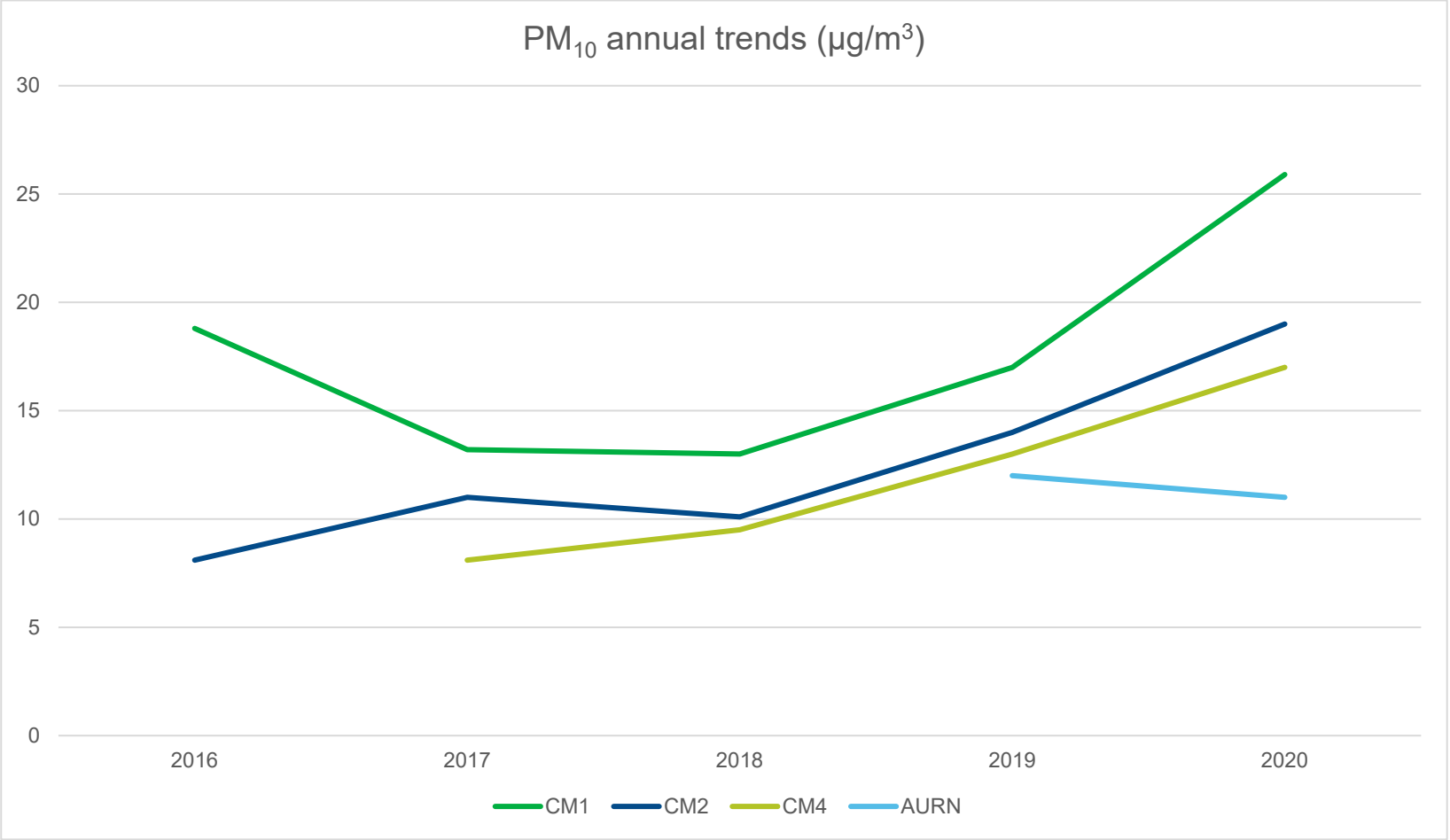


Table 2.6 – 24-Hour Mean PM_{10} Monitoring Results, Number of PM_{10} 24-Hour Means > 50µg/m^3

Site ID	Site Type	Valid Data Capture for Monitoring Period (%) (1)	Valid Data Capture 2020 (%) (2)	2016	2017	2018	2019	2020
IACC								
CM1 Llynfaes	Rural	74	74	4	0	0	0	4
CM2 Brynteg	Rural	93	93	0	0	2	0	3
CM4 Penhesgyn	Rural	80	80	-	0	0	0	0
Wrexham AURN	Roadside	100	100	-	-	-	0	0
Wrexham Chirk	Industrial	44	44	-	-	-	-	0

Notes:

Exceedances of the PM_{10} 24-hour mean objective (50µg/m^3 not to be exceeded more than 35 times/year) are shown in **bold**.

If the period of valid data is less than 85%, the 90.4th percentile of 24-hour means is provided in brackets.

(1) Data capture for the monitoring period, in cases where monitoring was only carried out for part of the year.

(2) Data capture for the full calendar year (e.g. if monitoring was carried out for 6 months, the maximum data capture for the full calendar year is 50%).

Table 2.7 – $PM_{2.5}$ Monitoring Results (µg/m^3)

Site ID	Site Type	Valid Data Capture for Monitoring Period (%) (1)	Valid Data Capture 2020 (%) (2)	2016	2017	2018	2019	2020
IACC								
CM1 Llynfaes	Rural	74	74	8.6	8.4	9.0	9.0	11.7 (3)
CM2 Brynteg	Rural	93	93	6.4	6.8	6.0	6.0	8.0
CM4 Penhesgyn	Rural	80	80	6.7(3)	6.5	7.0	7.0	7.0
Wrexham AURN	Roadside	100	100	-	-	-	8.0	7.0
Wrexham Chirk	Industrial	44	44	-	-	-	-	3.0

Notes:

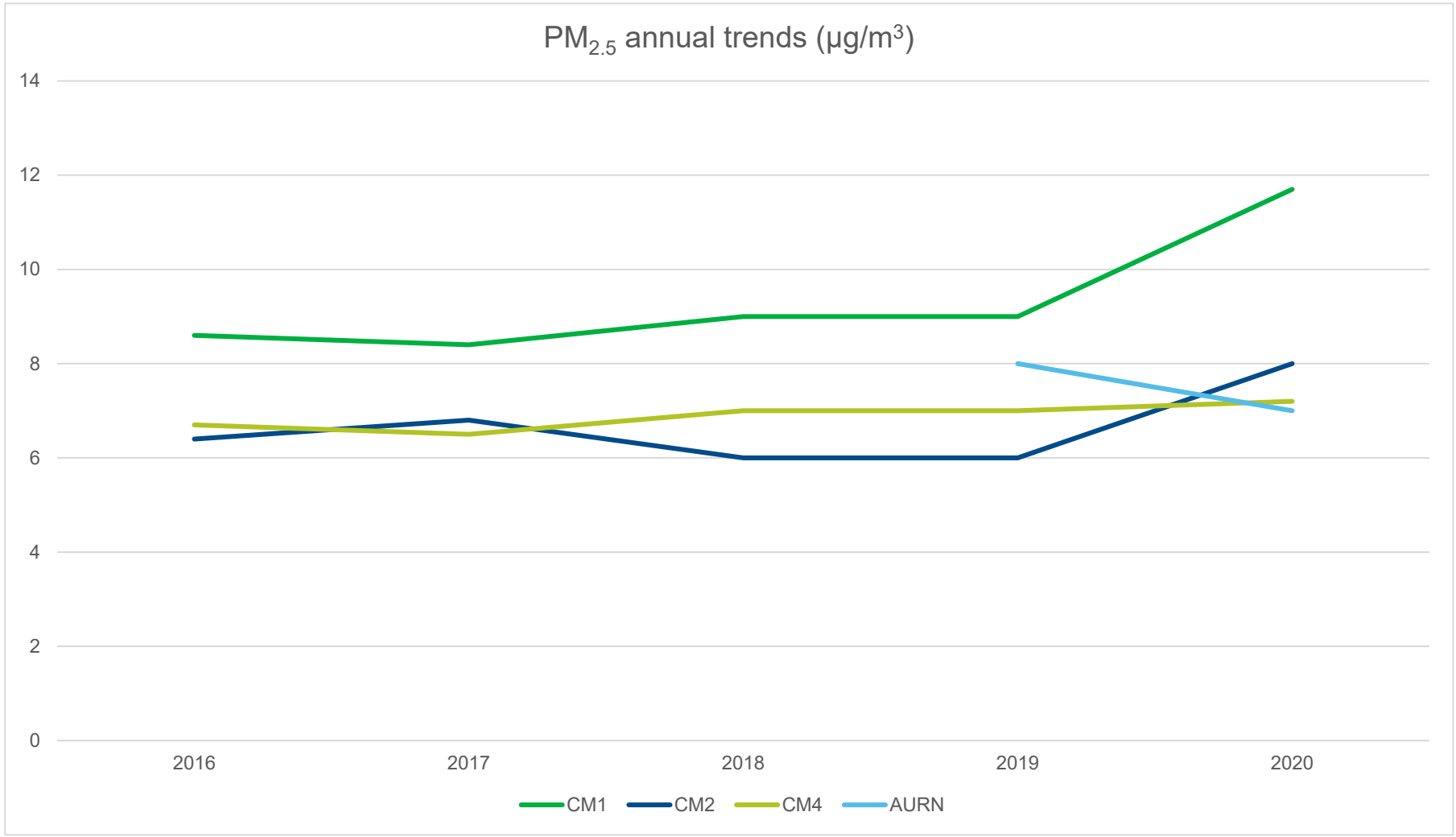
All means have been "annualised" as per LAQM.TG16 if valid data capture for the full calendar year is less than 75%. See Appendix C for details.

(1) Data capture for the monitoring period, in cases where monitoring was only carried out for part of the year.

(2) Data capture for the full calendar year (e.g. if monitoring was carried out for 6 months, the maximum data capture for the full calendar year is 50%).

(3) All means have been "annualised" as per Boxes 7.9 and 7.10 in LAQM.TG16, valid data capture for the full calendar year is less than 75%. See Appendix C for details.

Figure 2.24 – Trends in Annual Mean $PM_{2.5}$ Concentrations



Comparison of 2020 Monitoring Results with Previous Years and the Air Quality Objectives

2.1.3 Nitrogen Dioxide (NO_2)

In 2020, NO_2 was monitored by all six local authorities at 152 diffusion tube sites. Table 2.3 presents the annual mean NO_2 concentrations monitored in 2020. There was no exceedance of the annual mean AQO at any monitoring sites. There was also no concentration within 10% of the annual mean AQO.

Figure 2.16 to 2.22 represent the annual trends in NO_2 concentrations. These show a general decrease in NO_2 concentration at the majority of sites, including a sharp decline in 2020, likely linked to reduced traffic flows during the Covid-19 pandemic. Details on the impact on the pandemic on LAQM duties are included in Appendix E.

NO_2 was also monitored at two automatic monitoring sites in WCBC. Comparison with the 1-hour mean AQO at these stations is included in Table 2.4. No exceedances of the 1-hour mean AQO were recorded.

The main challenge upon LAQM due to the Covid-19 pandemic was the suspension of the diffusion tubes change-over in **DCC**, **GC**, **FCC** and **WCBC**. There was no data reported during the lockdown months in **DCC**, **GC** and **FCC**. In **WCBC**, diffusion tubes exposed from the start of March were in situ until the start of June.

Annual mean concentrations were processed using the LAQM diffusion tube processing tool released in June 2021[1]. Annual means at sites which recorded a data capture between 25% and 75% (i.e. 3 to 8 months) were annualised according to the method set out in Boxes 7.9 and 7.10 of LAQM.TG16. The diffusion tube processing tool automatically calculates time-weighted averages for tubes exposed longer than the recommended period of 5 weeks.

[1] https://laqm.defra.gov.uk/air-quality/air-quality-assessment/diffusion-tube-data-processing-tool/

2.1.4 Particulate Matter (PM_{10})

In 2020 PM_{10} was monitored at three automatic monitoring stations in IACC and at two in WCBC. Annual mean concentrations were obtained from the Air Quality in Wales website (https://airquality.gov.wales/).

The concentrations recorded were well below the annual mean AQO of 40 µg/m^3 at all five stations. The highest concentration recorded was 25.9 µg/m^3 at IACC's CM1. PM_{10} concentration at CM1 was annualised as data capture was 74%. Annual mean concentrations were below 20 µg/m^3 at all other monitoring sites.

There were four and three exceedances of the 24-hour mean AQO of 50 µg/m^3 at IACC's CM1 and CM2 monitoring sites, however this is within the allowed number of exceedances per year (AQO not to be exceeded more than 35 times a year). There were no exceedances of the 24-hour mean AQO of 50 µg/m^3 at the remaining sites measuring PM_{10} during 2020.

Annual mean PM_{10} concentrations are included in Table 2.5 and comparison with 24-hour mean AQO are included in Table 2.6. Figure 2.23 represents the annual trends in annual mean PM_{10}.

Unlike NO_2 annual mean concentrations, PM_{10} annual mean concentrations have slightly increased in 2020 at all monitoring stations.

2.1.5 Particulate Matter ($PM_{2.5}$)

In 2020 $PM_{2.5}$ was monitored at three automatic monitoring stations in IACC and at two in WCBC. Annual mean concentrations were obtained from the Air Quality in Wales website (https://airquality.gov.wales/).

The concentrations recorded in 2020 were below the annual mean standard of 25 µg/m^3 at all five stations. The highest concentration recorded was 11.7 µg/m^3 at IACC's CM1. $PM_{2.5}$ concentration at CM1 was annualised as data capture was 74%.

Table 2.7 includes the annual mean $PM_{2.5}$ concentrations and Figure 2.47 represents the trend in annual mean concentrations.

Unlike NO_2 annual mean concentrations, $PM_{2.5}$ annual mean concentrations have slightly increased in 2020 at IACC CM1 and CM2.

Summary of Compliance with AQS Objectives as of 2020

The local authorities in North Wales (IACC, DCC, FCC, CBC, GC, WCBC) have examined the results from monitoring in 2020. Concentrations at all sites are below the AQOs, therefore no further action is required.

3 New Local Developments

Road Traffic Sources (and Other Transport)

No new road traffic sources have been identified in 2020.

Industrial / Fugitive or Uncontrolled Sources / Commercial Sources

3.1.1 Poultry farms

DCC reports that a planning application 24/2018/0206 for a new Poultry Farm in Ruthin was approved on the 17th January 2020.

3.1.2 Bonfires

During January 2020 there was a fire at a Fibreboard plant in Chirk for which an Air Quality Cell (AQC) was formed consisting of WCBC and Natural Resources Wales (NRW) who deployed their monitoring equipment with the results being evaluated by Public Health Wales (PHW) with support from Public Health England (PHE). The fire lasted from the 13th to the 17th January.

The AQC released the following statement following evaluation of the data collected by NRW: "*An AQC was established on Tuesday 14thJanuary in response to the prolonged nature of the fire. Reported site conditions did not warrant the deployment of the mobile air monitoring team until Wednesday 15thJanuary. NRW and WCBC chose a residential area bordering Kronospan as the monitoring location. Air monitoring data showed elevated levels of particulate matter during the 15th and 16thJanuary which peaked during the early hours of the 16th with a maximum PM concentration of 225 µg/m3 and an 8hr average of 106 µg/m3. PM levels then declined significantly and by the 17th reported concentrations were below the UK air quality standard of 50 µg/m3. Elevated PM levels recorded during the night of the 16th to 17thJanuary were excluded from the assessment as they are probable instrument error due to interference from moisture"*.

The AQC also provided the following statement with regards to the monitoring of chemical pollutants: *"Gas monitoring detected the presence of a range of irritant gases which is expected from a fire involving wood products. However, due to known limitations in the monitoring technique we are unable to comment directly on the reported concentrations of individual chemicals".*

WCBC took over the monitoring following the conclusion of NRW's monitoring with the following being reported. "*The AQC monitoring data shows that there were elevated levels of PM_{10} in Chirk during the fire, which is to be expected. However, at some point between the conclusions of the AQC monitoring and WCBC monitoring starting the levels dropped significantly. WCBC monitoring confirms that the levels of PM_{10} following the fire met both the annual and daily limit for PM_{10} during the monitoring period. From the 21st January to*

the 26th March the average recorded levels of PM_{10} (18.5 µg/m3) are similar to the levels recorded (19.02 µg/m3) during the previous monitoring exercise 21-10-16 to 30-01-17. This shows that the levels of PM_{10} in Chirk had returned to normal".

On 27th May 2020 a fire started at the Hafod Quarry Landfill site and was extinguished that weekend. The site is regulated by Natural Resources Wales (NRW) who concluded that the fire had started due to spontaneous combustion following a prolonged period of dry weather.

New Planning Applications

In **DCC** there are two large housing/building developments pending approval.

- 01/2020/0315, for the conversion, restoration, part demolition and adaptation of main range listed buildings of North Wales Hospital to residential use. This will involve the development of 34 dwellings and the development of land within the hospital grounds for mixed use as enabling development; and
- 44/2019/0629, for the development of 102 affordable dwellings, associated roads, open space, landscaping and infrastructure.

In **WCBC** the following planning applications have been received in 2020.

- P/2020/0649, in Brymbo, for the development of up to 300 dwellings, a primary school & small district centre comprising retail, restaurant / public house;
- P/2020/0623, in Llay for a foodstore with car park;
- P/2020/0425, in Wrexham Industrial Estate for a gas fired power station (less than 10 MW);
- P/2020/0363, in Cross Lanes for a glasshouse with packing facility and offices, energy centre, recovery plant and reservoirs; and
- P/2020/0354 in Gresford, for the development of up to 109 dwellings.

4 Policies and Strategies Affecting Airborne Pollution

Local / Regional Air Quality Strategy

There are no AQMAs declared in North Wales. Therefore, there are currently no active AQAPs. As air quality is considered to be good within all six local authority areas, there have been no local policies specifically related to air quality developed.

Air Quality Planning Policies

No new local / regional Air Quality Strategy were published in 2020.

Air quality is considered in the wider context in the following local policies:

IACC and **GC** have adopted a joint Local Development Plan which provides the land use strategy for the next 15 years. The plan addresses the need to maintain good air quality in the area and ensure new development does not cause adverse impacts.

CCBC Local Development Plan (LDP) 2007 -2022 includes strategic policies (NTE/1) to ensure natural resources including air quality are protected (available at http://spp.conwy.gov.uk/upload/public/attachments/629/Conwy_Adopted_LDP_2007__2022_English_.pdf). This policy seeks to support wider economic and social needs of the Plan Area, and commits CCBC to regulate development so as to conserve and, where possible, enhance the Plan Area's natural environment, countryside and coastline. One of the ways in which CCBC are said to be able to achieve this is through reducing or remedying all forms of pollution including air.

DCC Local Development Plan 2006-2021 was adopted in 2013 and includes a commitment to avoid reaching critical air quality levels. It acknowledges that assessments of the environmental impact of transport proposals will need to also include air pollution along with noise and ecological impacts.

FCC is currently preparing their Local Development Plan. However, in the interim their Unitary Development Plan for the 15-year period, from 2000 to 2015 remains adopted. The plan identifies sites where new housing, employment and other development can take place, as well as setting out policies to protect important countryside, habitats, resources and heritage. Specific to air quality, Policy STR1 addresses the need to minimise pollution

to air, water and land when proposing new developments and STR7 highlights the need to safeguard the natural environment.

WCBC is currently preparing the Local Development Plan 2 2013 to 2028 which will replace the adopted Unitary Development Plan 1996 to 2011. The plan is a long-term land use and development strategy focused on achieving sustainable development. It will set out policies that will be used to decide planning applications and safeguard areas of land requiring protection including strategies to ensure the environment is protected from adverse effects of pollution.

Local Transport Plans and Strategies

No new local transport plan was published in 2020.

CCBC's LDP 2007 – 2022 contains a Spatial Objective SO9 to "encourage efficient patterns of movement and to recognise the strategic role that the A55 and rail corridors will play in meeting the development needs of the Plan Area and to give particular attention to development locations that are convenient to pedestrians, walking and cycling in Conwy to aid the reduction of transport CO_2 emissions".

The North Wales Joint Local Transport Plan (LTP) (2015-2025) has been jointly produced by the six North Wales local authorities in response to the Welsh Government requirement for LTPs to be submitted by the end of January 2015. The plan preparation has been overseen by Taith as a Joint Committee of the local authorities for transport. The Plan is a statutory document for transport in the region.

A review of the Wales Transport Strategy Objectives, the Welsh Government targets for investment and the Regional Transport Plan priorities, together with the review of issues and opportunities led to the drafting of outcomes for the Local Transport Plan. The Local Transport Plan Outcomes that relate to bringing about air quality improvements includes:

- Connections to Key Destinations and Markets: Support for Economic Growth through an improvement in the efficiency, reliability, resilience, and connectivity of movement, including freight, within and between North Wales and other regions and countries (with a particular focus on accessibility to the Enterprise Zones and an improvement in the vitality and viability of towns and other key centres); and
- Benefits and Minimised Impacts on the Environment: the potential for transport improvements to positively affect the local and global natural and built environment

will have been maximised and negative impacts minimised, including adaptation to the effects of climate change.

A set of higher-level interventions have been developed which together aim to deliver the vision and outcomes sought for the LTP:

- Transport network resilience improvements – Improvements to key county corridors to remove/ improve resilience problems;
- Integration with strategic public transport services – Schemes to improve access to rail stations including road access and bus services and interchange facilities, support for park and ride, walking and cycling routes and facilities;
- Improved links to Employment – Schemes to provide improved access to Enterprise Zones (EZs), ports, employment sites and town centres;
- Access to services – Range of integrated transport measures to improve access to education, health, community, shopping and other services by public transport, walking and cycling as well as community transport, taxi, car share sites; and
- Encouraging sustainable travel – Infrastructure improvements and promotional initiatives to increase levels of walking and cycling both for travel and for leisure as well as public transport. May include road and rail bridges/ crossings, cycle routes, footway/ footpath provision, safe routes to school, travel planning as well as road safety measures to assist vulnerable users.

Active Travel Plans and Strategies

There are no active travel plans in North Wales.

Local Authorities Well-being Objectives

No new well-being objectives were published in 2020.

IACC and **GC** have published Wellbeing Plans (available at https://www.llesiantgwyneddamon.org/eN/Asesiad-Llesiant/Asesiad-Llesiant/) the report recognises that the population of Anglesey considers that the natural environment improves well-being and contributes towards quality of life. As a consequence, the Board recognised the importance of protecting the natural environment. While this does not make

specific reference to Air Quality, there could be an implied reference and future plans will be required by law to report on progress made.

FCC has published its Wellbeing Plan 2017-2023 (available at https://www.flintshire.gov.uk/en/PDFFiles/Policy-and-Performance/PSB/A-Well-being-Plan-for-Flintshire.pdf). The plan recognises the importance of protecting and enhancing the Environment. It states that the Authority wants to ensure “air quality is the best it can be by working with partners to monitor and reduce harmful emissions”.

Green Infrastructure Plans and Strategies

No green infrastructure plan was published in 2020.

Climate Change Strategies

CCBC has made a Climate Emergency Declaration to become a net zero Authority by 2030. **CCBC** has observed a reduction in Greenhouse Gas emissions from all CBC’s activities for 8 consecutive years. The LED street lighting replacement programme has seen a 74% reduction in Greenhouse Gas emissions. This equates to 3,249 tonnes of CO_2 since 2010/11. This reduction is summarised with the CCBC 2018/2019 Environmental Report (available at https://www.conwy.gov.uk/en/Council/Strategies-Plans-and-Policies/Corporate-Plan/assets/documents/Environmental-Report-2018-19.pdf).

5 Conclusion and Proposed Actions

Conclusions from New Monitoring Data

There was no exceedance of the NO_2, PM_{10}, $PM_{2.5}$ and AQOs recorded at any monitoring sites in 2020. Annual mean concentrations were generally lower than previous years, likely due to reduced traffic flows associated with the Covid-19 pandemic.

Conclusions relating to New Local Developments

There are no new or newly identified local developments which are expected to cause a significant adverse air quality impact on the surrounding area within North Wales.

Other Conclusions

No detailed assessments are required as a result of exceedances of pollutant concentrations and no AQMA need to be declared. Nonetheless, wider policy documents discussed in Section 4 address air quality issues to ensure concentrations remain below the AQOs.

Proposed Actions

The recommendations for the coming year are listed below:

- Proceed to the 2022 Updating and Screening Assessment;
- Maintain the air quality monitoring programmes in each local authority; and
- Ensure new monitoring sites are added as required

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Appendices

Appendix A: Monthly Diffusion Tube Monitoring Results

Appendix B: A Summary of Local Air Quality Management

Appendix C: Air Quality Monitoring Data QA/QC

Appendix E: Impact of COVID-19 upon LAQM

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

Table A.1 – Full Monthly Diffusion Tube Results for 2020 (µg/m^3)

Site ID	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Raw Data	Bias Adjusted (See Appendix C) and Annualised (1)	Distance Corrected to Nearest Exposure (2)
IACC															
IACC-81	23.6	17.9	18.4	21.4	17.1	18.7	14.1	20.7	21.9	20.0	17.8	22.7	19.5	14.8	N/A
IACC-82	26.6	16.3	16.9	10.6	12.0	14.4	15.2	21.8	20.7	17.7	24.3	18.1	17.9	13.6	N/A
IACC-83	15.6	10.2	10.6	8.1	9.5	7.2	7.7	7.7	11.1	10.8	13.9	12.9	10.4	7.9	N/A
IACC-84	14.2	11.0	7.5	5.8	7.5	7.7	5.6	6.1	7.1	7.9	13.3	7.9	8.5	6.4	N/A
CCBC															
CCBC-017	17.8	11.0	18.0	14.0	11.1	14.1	10.8	18.6	18.2	13.6	17.4	16.0	15.1	11.4	N/A
CCBC-018	23.7	18.5	15.4	10.3	11.0	14.0	16.1	16.9	20.0	16.3	22.1	17.6	16.8	12.8	N/A
CCBC-021	16.5	13.4	16.2	12.6	11.4	12.7	14.6	20.0	18.1	15.8	10.3	15.0	14.7	11.2	N/A
CCBC-022	24.6	19.1	17.7	11.3	9.9	14.3	12.8	15.4	18.9	19.1	22.6	19.6	17.1	13.0	N/A
CCBC-034	28.9	25.3	19.9	10.6	11.5	12.7	15.8	17.9	23.4	23.4	27.2	23.1	20.0	15.2	N/A
CCBC-035	17.9	14.1	16.0	13.5	11.4	15.8	10.4	16.3	15.9	15.3	18.9	18.0	15.3	11.6	N/A
CCBC-036	11.9	9.1	12.9	9.8	6.8	7.7	5.8	10.4	11.0	11.2	15.7	13.0	10.4	7.9	N/A
CCBC-040	17.4	12.0	13.1	14.7	11.0	12.9	9.9	13.7	15.6	13.9	18.4	18.3	14.2	10.8	N/A
CCBC-041	19.2	9.7	13.2	12.2	8.7	10.4	8.8	12.6	16.6	12.3	19.4	16.0	13.3	10.1	N/A
CCBC-042	20.2	18.1	12.4	13.2	10.1	10.2	9.7	15.3	17.6	15.9	21.8	17.8	15.2	11.5	N/A
CCBC-043	14.5	10.6	13.9	10.5	7.1	10.4	7.9	13.3	11.5	11.9	13.3	12.6	11.5	8.7	N/A
CCBC-044	15.8	13.5	21.1	17.4	13.4	18.1	17.9	24.8	21.4	-	14.8	13.4	17.4	13.2	N/A
CCBC-045	13.5	9.6	6.9	7.4	6.5	8.9	7.0	11.9	11.4	11.9	11.9	15.3	10.2	7.7	N/A
CCBC-046	28.8	17.8	20.1	12.4	13.7	15.4	16.6	22.3	24.1	19.4	21.8	24.9	19.8	15.0	N/A
CCBC-047	19.8	17.6	17.7	10.5	10.0	13.9	16.7	19.9	17.1	15.4	17.1	14.0	15.8	12.0	N/A
CCBC-048	21.3	16.8	16.3	9.2	10.5	13.2	15.9	16.6	18.8	14.6	20.0	16.3	15.8	12.0	N/A
CCBC-049	15.4	13.6	12.7	10.1	9.6	12.8	14.0	14.8	15.4	13.9	17.0	16.3	13.8	10.5	N/A
CCBC-050	7.6	5.5	6.6	5.1	5.9	5.9	4.8	7.1	5.8	5.7	6.1	6.1	6.0	4.6	N/A
DCC															
RHBC/006	34.1	22.7	-	-	-	18.0	18.4	23.8	23.8	21.4	29.7	25.0	24.1	18.3	N/A
RHBC/017	35.9	24.4	-	-	-	16.4	14.6		24.6	22.0	32.3	17.3	23.4	22.3	N/A
RHBC/058	44.7	26.7	-	-	-	21.8	24.5	39.0	34.7	27.5	35.2	35.7	32.2	24.5	N/A

Site ID	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Raw Data	Bias Adjusted (See Appendix C) and Annualised (1)	Distance Corrected to Nearest Exposure (2)
RHBC/060	15.7	9.8	-	-	-	6.2	6.0	8.5	9.8	11.6	17.2	13.2	10.9	8.3	N/A
RHBC/007	16.0	11.2	-	-	-	11.5	13.1	14.4	14.0	16.2	13.0	15.4	13.9	10.5	N/A
RHBC/051	36.5	20.5	-	-	-	17.4	16.1	24.3	22.6	29.1	27.0	27.8	24.6	18.7	N/A
RHBC/026	26.6	16.6	-	-	-	12.1	12.5	14.3	16.2	20.2	23.6	24.4	18.5	14.1	N/A
RHBC/062	14.1	8.7	-	-	-	6.9	6.6	8.3	7.3	8.8	12.7	11.9	9.5	7.2	N/A
RHBC/011	32.3	18.6	-	-	-	11.8	11.5	18.5	19.7	19.0	26.6	22.2	20.0	15.2	N/A
RHBC/063	39.0	20.2	-	-	-	16.5	14.1	20.0	22.0	22.0	28.0	27.0	23.2	17.6	N/A
RHBC/027	48.1	37.5	-	-	-	30.6	28.9	30.1	36.4	36.9	34.6	39.3	35.8	27.2	N/A
RHBC/059	20.3	13.8	-	-	-	9.3	8.2	12.0	15.5	14.9	20.7	17.9	14.7	11.2	N/A
RHBC/023	29.7	23.5	-	-	-	13.9	15.7	18.0	20.1	22.4	23.6	24.3	21.2	16.1	N/A
RHBC/046	47.9	34.7	-	-	-	22.2	25.1	27.0	29.5	27.7	32.0	32.9	31.0	23.6	N/A
RHBC/047	35.4	27.4	-	-	-	19.9	20.3	22.5	25.7	26.2	29.3	33.7	26.7	20.3	N/A
RHBC/048	34.9	20.8	-	-	-	24.3	20.0	26.3	26.8	25.2	30.1	28.9	26.4	20.0	N/A
RHBC/040	35.7	24.7	-	-	-	26.9	23.8	28.4	31.3	33.8	30.9	31.0	29.6	22.5	N/A
RHBC/041	22.1	20.2	-	-	-	12.8	11.6	15.1	-	-	-	-	16.4	18.7	N/A
RHBC/055	29.5	19.1	-	-	-	16.9	16.9	20.0	20.2	22.0	28.2	29.2	22.4	17.1	N/A
RHBC/056	40.1	28.6	-	-	-	26.4	21.1	25.1	29.7	31.7	34.7	37.5	30.5	23.2	N/A
RHBC/034	27.5	16.4	-	-	-	13.3	11.5	16.2	16.8	19.6	22.2	23.1	18.5	14.1	N/A
RHBC/035	20.7	13.9	-	-	-	11.8	12.9	14.9	18.6	17.0	22.3	23.8	17.3	13.2	N/A
RHBC/036	39.5	26.4	-	-	-	18.0	14.8	22.9	23.3	26.6	34.7	31.0	26.4	20.0	N/A
RHBC/037	22.5	9.8	-	-	-	13.0	9.0	13.3	13.7	13.9	21.3	12.3	14.3	10.9	N/A
RHBC/052	19.7	10.1	-	-	-	12.9	10.6	17.5	14.7	15.2	19.8	16.6	15.2	11.6	N/A
RHBC/061	20.2	14.0	-	-	-	11.7	10.2	15.5	12.8	18.4	20.1	19.0	15.8	12.0	N/A
FCC															
ADDC-008	22.4	-	-	-	19.8	-	-	-	-	-	-	-	19.3	15.5	N/A
ADDC-009	26.9	17.5	-	-		14.5	8.4	15.8	17.4	14.8	24.8	19.1	17.7	13.4	N/A
ADDC-085	30.9	-	-	-	21.3	21.8	16.2	27.9	30.0	20.8	27.8	29.3	25.1	19.1	N/A
ADDC-111	19.6	-	-	-	11.1	-	8.6	13.6	-	-	19.7	19.2	15.3	10.7	N/A
ADDC-105	15.6	-	-	-	13.7	-	9.3	14.4	15.3	14.0	19.3	20.3	15.2	10.8	N/A
ADDC-013	2.8	6.7	-	-	8.6	-	4.8	10.5	10.1	9.7	12.5	13.4	8.8	6.7	N/A
ADDC-014	16.9	-	-	-	12.9	9.3	9.1	14.0	15.6	14.5	21.0	17.3	14.5	11.0	N/A
ADDC-015	19.4	11.7	-	-	9.9	8.5	7.8	11.0	12.4	10.6	18.4	17.7	12.7	9.7	N/A
ADDC-106	-	-	-	-	10.5	10.0	8.0	12.4	13.6	13.4	17.5	-	12.2	9.6	N/A
ADDC-107	-	-	-	-	-	-	-	9.6	8.9	10.8	13.9	15.2	11.7	7.8	N/A
ADDC-084	41.2	31.3	-	-	20.6	21.8	23.6	28.3	34.4		28.2	30.5	28.9	21.9	N/A
ADDC-064	45.6	-	-	-	25.1	25.1	20.5	27.6	36.6	31.5	41.0	26.6	31.1	23.6	N/A

Site ID	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Raw Data	Bias Adjusted (See Appendix C) and Annualised (1)	Distance Corrected to Nearest Exposure (2)
ADDC-098	45.3	-	-	-	24.2	24.1	22.0	27.4	35.0	26.1	43.9	31.0	31.0	23.6	N/A
ADDC-117	-	-	-	-	-	-	8.6	-	-	12.9	17.6	19.1	14.6	10.0	N/A
ADDC-099	24.7	-	-	-	-	-	13.3	23.7	25.7	26.3	36.0	28.2	25.4	17.7	N/A
ADDC-023	34.9	27.1	-	-	20.0	18.0	17.3	23.1	28.2	21.8	25.6	28.8	24.5	18.6	N/A
ADDC-024	22.8	-	-	-	-	-	19.2	25.4	26.7	-	-	29.1	24.8	17.6	N/A
ADDC-118	22.1	-	-	-	7.4	10.9	8.8	12.3	13.6	15.4	17.5	19.2	14.1	10.7	N/A
ADDC-080	27.4	9.3	-	-	15.1	15.0	11.3	16.9	19.2	16.0	24.6	22.1	17.7	13.4	N/A
ADDC-066	34.7	29.0	-	-	18.4	18.4	17.8	20.5	22.7	22.1	25.0	24.4	23.3	17.7	N/A
ADDC-116	26.1	19.8	-	-	-	-	-	-	19.4	17.3	26.9	25.3	20.8	14.6	N/A
ADDC-029	26.7	20.0	-	-	21.8	12.9	9.7	15.3	16.9	18.3	23.7	22.4	18.8	14.3	N/A
ADDC-030	22.4		-	-	21.1	21.9	14.3	22.2	24.8	24.1	27.3	31.1	23.2	17.7	N/A
ADDC-083	46.0	31.7	-	-	27.0	26.7	23.3	32.2	34.8	31.3	41.5	36.4	33.1	25.1	N/A
ADDC-032	23.7	20.5	-	-	15.3	13.8	11.2	14.8	19.5	17.5	27.0	26.4	19.0	14.4	N/A
ADDC-033	19.1	15.9	-	-	11.6	10.1	7.1	11.3	13.0	14.2	22.6	19.6	14.5	11.0	N/A
ADDC-034	23.2	15.4	-	-	15.7	11.7	9.1	16.2	17.6	17.8	21.4	21.2	16.9	12.9	N/A
ADDC-120			-	-	15.1	16.6	16.1	16.6	21.1	19.4	24.4	21.1	18.8	14.1	N/A
ADDC-036	19.2	15.2	-	-	14.5	11.8	7.8	12.9	15.3	14.1	23.9	16.2	15.1	11.5	N/A
ADDC-037	35.3	23.0	-	-	24.7	25.2	22.3	23.3	26.5	25.6	28.7	30.5	26.5	20.1	N/A
ADDC-093	10.6	18.5	-	-	17.1	15.2	13.6	18.1	22.6	22.7	24.4	26.0	18.9	14.3	N/A
ADDC-044	23.1	14.8	-	-	-	-	-	-	-	-	-	-	19.0	14.4	N/A
ADDC-067	31.1	10.7	-	-	17.2	17.2	15.6	22.6	-	-	29.4	-	20.4	15.8	N/A
ADDC-068	28.6	24.1	-	-	17.5	16.3	12.8	21.1	24.4	21.6	26.6	26.2	21.9	16.7	N/A
ADDC-069	21.7	-	-	-	13.9	13.5	11.8	15.9	20.3	21.6	23.7	23.2	18.4	14.0	N/A
ADDC-070	30.0	21.6	-	-	17.7	18.2	13.4	21.2	26.2	22.6	29.6	28.7	22.9	17.4	N/A
ADDC-081	28.4	-	-	-	29.0	28.3	15.4	24.9	-	-	29.2	24.7	25.7	18.7	N/A
ADDC-119	17.3	9.4	-	-	8.8	8.0	6.4	9.9	11.9	11.5	15.7	11.6	11.1	8.4	N/A
ADDC-114	19.1	-	-	-	12.4	11.2	9.3	14.8	18.3	17.8	21.7	15.7	15.6	11.8	N/A
ADDC-052	19.5	14.0	-	-	12.3	11.2	10.7	12.0	14.5	14.1	13.0	20.6	14.2	10.8	N/A
ADDC-115	7.5	-	-	-	8.7	6.6	19.1	7.6	8.4	7.7	10.7	9.0	9.5	7.2	N/A
ADDC-112	18.0	9.4	-	-	9.9	8.6	7.6	11.3	10.8	11.8	16.9	16.9	12.1	9.2	N/A
ADDC-113	-	-	-	-	-	9.4	7.1	-	-	11.7	17.3	15.1	12.1	8.8	N/A
ADDC-091	-	-	-	-	-	22.1	15.3	26.0	27.3	22.6	31.4	26.7	24.5	18.2	N/A
ADDC-108	-	-	-	-	7.1	7.6	5.3	9.4	9.6	10.2	16.8	16.7	10.3	7.8	N/A
ADDC-110	-	-	-	-		12.4	11.6	15.8	16.8	17.2	26.9	-	18.1	13.8	N/A
ADDC-100	41.0	31.3			20.7	21.3	24.3	30.5	32.9	23.9	<0.6	25.4	28.2	21.4	N/A
ADDC-060	25.9	18.8	-	-	-	-	8.2	-	-	-	-	-	19.4	15.3	N/A

Site ID	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Raw Data	Bias Adjusted (See Appendix C) and Annualised (1)	Distance Corrected to Nearest Exposure (2)
ADDC-061	24.9	18.9	-	-	10.5	11.4	-	-	15.7	-	-	-	16.0	12.6	N/A
ADDC-121	23.2	13.9	-	-	12.3	11.7	10.1	15.4	17.3	16.8	23.8	22.7	16.7	12.7	N/A
ADDC-101	48.0	35.9	-	-	26.6	26.0	23.6	31.8	35.5	29.4	38.1	39.7	33.3	25.3	N/A
ADDC-109	10.3	-	-	-	9.5	9.7	6.2	10.3	10.3	11.6	17.2	16.9	11.3	8.6	N/A
ADDC-075	29.7	25.9	-	-	20.7	19.9	16.0	20.9	20.9	22.1	31.2	27.3	23.5	17.8	N/A
ADDC-102	13.2	11.5	-	-	8.9	8.6	-	-	10.2	10.7	16.3	16.1	11.9	8.4	N/A
ADDC-103	13.9	10.2	-	-		6.7	-	-	-	-	16.5	16.2	12.3	8.5	N/A
ADDC-104	-	-	-	-	9.8	9.4	8.8	11.5	6.7	11.4	16.6	-	10.6	8.4	N/A
ADDC-089	53.6	33.1	-	-	31.9	31.9	32.0	-	-	-	39.9	29.9	36.0	26.3	N/A
ADDC-122	-	-	-	-	22.9	22.3	20.5	26.4	15.4	26.3	37.4	35.9	30.7	23.3	N/A
ADDC-123	33.0	-	-	-	-	-	14.7	19.2	11.1	-	-	27.4	20.7	15.8	N/A
GC															
GCC 002	30.9	26.5	-	-	-	-	-	77.8	31.8	26.2	33.1	24.7	35.9	26.0	N/A
GCC 003	12.5	8.0	-	-	-	-	-	8.1	9.0	9.5	12.6	9.1	9.8	7.1	N/A
GCC 005	29.6	18.1	-	-	-	-	-	27.5	24.1	21.8	25.8	21.4	24.0	17.4	N/A
GCC 008	26.7	20.6	-	-	-	-	-	17.9	20.8	20.0	24.3	22.0	21.7	15.7	N/A
GCC 011	29.4	23.4	-	-	-	-	-	19.2	22.0	19.9	25.1	19.1	22.6	16.4	N/A
GCC 012	26.6	12.2	-	-	-	-	-	26.1	27.2	23.9	-	21.8	23.0	17.8	N/A
GCC 013	25.3	14.3	-	-	-	-	-	19.6	22.6	19.4	26.4	19.5	21.0	15.2	N/A
GCC 015	23.0	13.7	-	-	-	-	-	22.7	21.8	18.9	23.8	21.0	20.7	15.0	N/A
GCC 037	29.4	-	-	-	-	-	-	18.4	20.8	24.7	28.2	24.8	24.4	17.0	N/A
GCC 038	29.4	19.3	-	-	-	-	-	24.7	27.7	26.8	27.2	24.0	25.6	18.5	N/A
GCC 039	29.2	20.4	-	-	-	-	-	27.6	38.3	24.7	29.7	23.1	27.6	20.0	N/A
GCC 040	23.7	20.0	-	-	-	-	-	15.3	15.4	17.1	20.6	14.7	18.1	13.1	N/A
WCBC															
1	37.3	22.2	16.1	-	-	18.8	18.7	26.1	29.2	33.3	26.3	32.9	24.8	18.8	N/A
34	14.6	11.2	11.1	-	-	10.6	8.1	16.8	16.5	12.2	19.2	14.0	13.1	10.0	N/A
45	20.4	13.1	17.5	-	-	18.4	11.6	19.3	16.2	17.6	19.4	23.3	17.9	13.6	N/A
36	27.2	15.9	10.6	-	-	10.4	10.7	16.0	17.7	16.6	23.2	22.0	16.1	12.2	N/A
10	21.9	20.1	9.2	-	-	8.2	9.5	10.5	12.6	15.0	16.7	15.3	13.1	10.0	N/A
49	13.0	9.6	8.3	-	-	7.7	5.8	7.7	9.9	11.0	13.4	11.0	9.5	7.2	N/A
42	34.3	23.0	17.0	-	-	16.9	20.1	20.4	23.8	23.7	28.6	26.9	22.4	17.1	N/A
50	23.9	17.1	14.6	-	-	14.7	18.7	23.2	23.7	23.0	18.7	22.9	19.3	14.7	N/A
51	22.7	14.4	12.4	-	-	13.9	14.2	18.8	20.4	21.1	24.5	24.9	17.9	13.6	N/A
52	27.0	17.9	14.9	-	-	18.5	11.9	24.7	23.6	16.7	29.0	23.7	19.9	15.1	N/A
53	32.8	22.2	11.5	-	-	16.0	18.3	26.7	32.1	24.3	28.0	25.1	21.8	16.6	N/A

Site ID	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Raw Data	Bias Adjusted (See Appendix C) and Annualised (1)	Distance Corrected to Nearest Exposure (2)
22	29.4	20.1	13.1	-	-	12.3	13.1	18.3	16.4	17.3	24.0	19.1	17.5	13.3	N/A
32	40.1	27.1	16.1	-	-	19.8	19.4	20.8	27.5	20.7	29.5	32.7	23.9	18.2	N/A
30	47.3	28.4	26.4	-	-	34.3	29.7	40.3	40.1	38.3	40.6	35.6	34.6	26.3	N/A
31	45.8	20.3	18.6	-	-	17.7	19.3	19.7	31.6	32.4	36.0	35.6	26.4	20.0	N/A
33	24.9	16.7	-	-	-	19.1	17.1	20.4	26.2	27.4	30.1	41.5	25.4	19.3	N/A
37	24.3	16.4	12.3	-	-	10.9	12.0	19.3	16.8	16.2	20.9	16.6	15.9	12.1	N/A
38	25.2	14.3	11.7	-	-	12.8	11.7	16.2	19.0	15.9	21.1	23.7	16.4	12.5	N/A
44	35.0	22.6	17.3	-	-	16.8	14.3	19.9	-	-	30.1	30.1	22.3	16.3	N/A
40	13.0	10.7	7.9	-	-	7.0	6.7	7.8	8.9	10.6	13.4	13.5	9.7	7.4	N/A
41	16.9	9.7	11.4	-	-	9.5	7.1	12.8	16.4	13.0	19.3	21.7	13.6	10.3	N/A
43	29.3	15.5	14.2	-	-	13.9	11.5	16.3	19.1	-	28.0	29.8	19.0	14.4	N/A
46	35.4	20.2	13.8	-	-	17.3	13.6	19.6	23.2	19.5	34.4	29.1	21.2	16.1	N/A
48	23.4	14.0	11.7	-	-	11.7	13.4	13.7	17.7	19.6	19.3	23.5	16.1	12.3	N/A
54	30.1	19.0	12.2	-	-	14.3	20.9	19.5	22.4	23.0	25.5	26.8	20.0	15.2	N/A
55	18.3	10.1	8.4	-	-	7.9	7.4	10.4	12.0	13.1	18.0	22.7	12.3	9.4	N/A
56	28.0	12.8	13.5	-	-	13.7	10.9	17.6	18.2	19.3	26.1	22.3	17.6	13.4	N/A
57	21.4	13.4	9.8	-	-	9.3	8.4	10.9	14.4	13.8	19.4	16.7	13.1	10.0	N/A
58	19.2	13.0	8.9	-	-	9.2	9.1	11.8	14.3	15.0	19.5	24.5	13.8	10.5	N/A
59	15.2	9.5	9.9	-	-	9.5	7.5	10.7	11.3	12.3	13.0	12.6	11.0	8.4	N/A
60	12.6	9.5	6.8	-	-	5.9	6.6	6.8	9.6	9.6	10.4	14.0	8.9	6.8	N/A
61	-	15.9	13.6	-	-	12.7	14.0	13.9	19.6	17.8	23.1	22.9	16.6	12.6	N/A
1	37.3	22.2	16.1	-	-	18.8	18.7	26.1	29.2	33.3	26.3	32.9	24.8	18.8	N/A
34	14.6	11.2	11.1	-	-	10.6	8.1	16.8	16.5	12.2	19.2	14.0	13.1	10.0	N/A
45	20.4	13.1	17.5	-	-	18.4	11.6	19.3	16.2	17.6	19.4	23.3	17.9	13.6	N/A
36	27.2	15.9	10.6	-	-	10.4	10.7	16.0	17.7	16.6	23.2	22.0	16.1	12.2	N/A
10	21.9	20.1	9.2	-	-	8.2	9.5	10.5	12.6	15.0	16.7	15.3	13.1	10.0	N/A
49	13.0	9.6	8.3	-	-	7.7	5.8	7.7	9.9	11.0	13.4	11.0	9.5	7.2	N/A
42	34.3	23.0	17.0	-	-	16.9	20.1	20.4	23.8	23.7	28.6	26.9	22.4	17.1	N/A
50	23.9	17.1	14.6	-	-	14.7	18.7	23.2	23.7	23.0	18.7	22.9	19.3	14.7	N/A
51	22.7	14.4	12.4	-	-	13.9	14.2	18.8	20.4	21.1	24.5	24.9	17.9	13.6	N/A

Notes:

Exceedances of the NO_2 annual mean objective of 40µg/m^3 are shown in **bold**.

NO_2 annual means exceeding 60µg/m^3, indicating a potential exceedance of the NO_2 1-hour mean objective are shown in **bold and underlined.**

(1) See Appendix C for details on bias adjustment and annualisation. (2) Distance corrected to the nearest relevant public exposure

Appendix B: A Summary of Local Air Quality Management

Purpose of an Annual Progress Report

This report fulfils the requirements of the Local Air Quality Management (LAQM) process as set out in the Environment Act 1995 and associated government guidance. 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 being achieved. Where exceedances occur, or are likely to occur, the local authority must then declare an Air Quality Management Area (AQMA) and prepare an Air Quality Action Plan (AQAP) within 18 months of declaration setting out the measures it intends to put in place in pursuit of the objectives. Action plans should then be reviewed and updated where necessary at least every five years.

For Local Authorities in Wales, an Annual Progress Report replaces all other formal reporting requirements and have a very clear purpose of updating the general public on air quality, including what ongoing actions are being taken locally to improve it if necessary.

Air Quality Objectives

The air quality objectives applicable to LAQM in Wales are set out in the Air Quality (Wales) Regulations 2000, No. 1940 (Wales 138), Air Quality (Amendment) (Wales) Regulations 2002, No 3182 (Wales 298), and are shown in Table B.1.

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

Table B.1 – Air Quality Objectives Included in Regulations for the Purpose of LAQM in Wales

Pollutant	Air Quality Objective: Concentration	Air Quality Objective: Measured as	Date to be achieved by
Nitrogen Dioxide (NO_2)	200µg/m^3 not to be exceeded more than 18 times a year	1-hour mean	31.12.2005
Nitrogen Dioxide (NO_2)	40µg/m^3	Annual mean	31.12.2005
Particulate Matter (PM_{10})	50µg/m^3, not to be exceeded more than 35 times a year	24-hour mean	31.12.2010
Particulate Matter (PM_{10})	40µg/m^3	Annual mean	31.12.2010
Sulphur dioxide (SO_2)	350µg/m^3, not to be exceeded more than 24 times a year	1-hour mean	31.12.2004
Sulphur dioxide (SO_2)	125µg/m^3, not to be exceeded more than 3 times a year	24-hour mean	31.12.2004
Sulphur dioxide (SO_2)	266µg/m^3, not to be exceeded more than 35 times a year	15-minute mean	31.12.2005
Benzene	16.25µg/m^3	Running annual mean	31.12.2003
Benzene	5µg/m^3	Annual mean	31 12 2010
1,3 Butadiene	2.25µg/m^3	Running annual mean	31.12.2003
Carbon Monoxide	10.0mg/m^3	Maximum Daily Running 8-Hour mean	31.12.2003
Lead	0.25µg/m^3	Annual Mean	31.12.2008

Appendix C: Air Quality Monitoring Data QA/QC

QA/QC of Diffusion Tube Monitoring

ESG Didcot and Gradko are both UKAS accredited laboratories who participates in the new AIR-PT Scheme (a continuation of the Workplace Analysis Scheme for Proficiency (WASP)) for NO_2 tube analysis and the Annual Field Inter-Comparison Exercise. These provide strict performance criteria for participating laboratories to meet, thereby ensuring NO_2 concentrations reported are of a high calibre. The lab follows the procedures set out in the Harmonisation Practical Guidance.

ESG Didcot and Gradko both scored 75% or above on all results for 2020. The percentage score reflects the results deemed to be satisfactory based upon the z-score of < ± 2.

Results are available at https://laqm.defra.gov.uk/diffusion-tubes/qa-qc-framework.html.

Diffusion Tube Annualisation

Data capture at all sites which recorded less than 75% data capture during 2020 has been annualised according to the method set out in Boxes 7.9 and 7.10 of LAQM.TG16.

NO_2 diffusion tubes concentrations were annualised using automatic monitoring data from two stations with a data capture above 85%. The selected monitoring sites are in background locations to avoid any very local effects that may occur at Urban Centre, Roadside or Kerbside sites. 2020 automatic monitoring data was obtained from https://airquality.gov.wales/. The details of the annualisation have been provided in Table C.2.

Diffusion Tube Bias Adjustment Factors

Diffusion tubes adjustment factors were obtained from the national bias adjustment calculator v06/21 (Available at: https://laqm.defra.gov.uk/documents/Database_Diffusion_Tube_Bias_Factors_v06_21_FINAL_V3.xlsx). Tubes were analysed by Gradko and Socotec Didcot as detailed in the table below.

Table C.1 – Bias Adjustment Factor

Local authority	Laboratory	Method	2021 Bias adjustment factor	Number of studies
GC	Gradko	20% TEA in water	0.81	27
IACC, CCBC, DCC, FCC, WCBC	Socotec Didcot	50% TEA in acetone	0.76	24

QA/QC of Automatic Monitoring

PM_{10} and $PM_{2.5}$ Monitoring Adjustment

The particulate monitoring undertaken in WCBC was via use of daily gravimetric Partisols. These meet the European equivalence testing and therefore are not subject to any correction.

The Osiris instruments run by IACC have not been adjusted. The IACC have previously demonstrated that an adjustment factor of 1.3 would lead to a significant overestimation of the impact of coarse dust (e.g. quarry dust). Therefore, it was deemed inappropriate to adjust the data gathered using the Osiris monitors as these instruments are normally monitoring for the coarse fractions e.g. quarry dust.

Automatic Monitoring Annualisation

Data capture at WCBC Chirk automatic monitor recorded 44% data capture during 2020 and it recorded 74% at IACC CM1 Llynfaes. Concentrations were therefore annualised according to the method set out in Boxes 7.9 and 7.10 of LAQM.TG16.

NO_2 concentration at Chirk was annualised using automatic monitoring data from Narberth and Swansea Cwm Level Park both with a data capture above 85%.

PM_{10} and $PM_{2.5}$ concentrations at Chirk and Llynfaes were annualised using automatic monitoring data from IACC rural monitors CM2 and CM4 also both with a data capture above 85%.

The selected monitoring sites are in background locations to avoid any very local effects that may occur at Urban Centre, Roadside or Kerbside sites. 2020 automatic monitoring

data was obtained from https://airquality.gov.wales/. The details of the annualisation have been provided in Table C.2 and C.3.

NO_2 Fall-off with Distance from the Road

No automatic NO_2 monitoring locations required distance correction during 2020.

Table C.2 – NO_2 Annualisation Summary (concentrations presented in µg/m^3)

Site ID	Annualisation Factor Narberth	Annualisation Factor Swansea Cwm Level Park	Average Annualisation Factor	Raw Data Annual Mean	Annualised Annual Mean
RHBC/017	1.0323	0.8716	0.9519	23.4	22.3
RHBC/041	1.1587	1.1224	1.1406	16.4	18.7
FCC					
ADDC-008	1.0431	1.0653	1.0542	19.3	20.3
ADDC-111	0.9616	0.8711	0.9164	15.3	14.0
ADDC-105	0.9789	0.8818	0.9304	15.2	14.2
ADDC-106	0.9786	1.0954	1.0370	12.2	12.7
ADDC-107	0.9461	0.8035	0.8748	11.7	10.2
ADDC-117	0.9837	0.8317	0.9077	14.6	13.2
ADDC-099	0.9903	0.8381	0.9142	25.4	23.2
ADDC-024	0.9822	0.8870	0.9346	24.8	23.2
ADDC-116	1.0143	0.8410	0.9277	20.8	19.3
ADDC-120	0.9875	0.9916	0.9896	18.8	18.6
ADDC-067	1.0312	1.0108	1.0210	20.4	20.8
ADDC-081	0.9819	0.9314	0.9567	25.7	24.6
ADDC-113	0.9911	0.9186	0.9548	12.1	11.6
ADDC-091	1.0005	0.9548	0.9777	24.5	23.9
ADDC-108	0.9875	0.9916	0.9896	10.3	10.2
ADDC-110	1.0331	0.9669	1.0000	18.1	18.1
ADDC-060	1.1172	0.9616	1.0394	19.4	20.2
ADDC-061	1.0460	1.0248	1.0354	16.0	16.6
ADDC-102	0.9935	0.8476	0.9205	11.9	11.0
ADDC-103	1.0270	0.7860	0.9065	12.3	11.2
ADDC-104	0.9786	1.0954	1.0370	10.6	11.0
ADDC-089	1.0098	0.9085	0.9592	36.0	34.6
ADDC-123	1.0633	0.9560	1.0097	20.7	20.8
GC					
GCC 002	0.9996	0.7882	0.8939	35.9	32.1
GCC 003	0.9996	0.7882	0.8939	9.8	8.8
GCC 005	0.9996	0.7882	0.8939	24.0	21.5
GCC 008	0.9996	0.7882	0.8939	21.7	19.4
GCC 011	0.9996	0.7882	0.8939	22.6	20.2
GCC 012	1.0833	0.8256	0.9545	23.0	21.9
GCC 013	0.9996	0.7882	0.8939	21.0	18.8

Site ID	Annualisation Factor Narberth	Annualisation Factor Swansea Cwm Level Park	Average Annualisation Factor	Raw Data Annual Mean	Annualised Annual Mean
GCC 015	0.9996	0.7882	0.8939	20.7	18.5
GCC 037	0.9600	0.7621	0.8610	24.4	21.0
GCC 038	0.9996	0.7882	0.8939	25.6	22.9
GCC 039	0.9996	0.7882	0.8939	27.6	24.7
GCC 040	0.9996	0.7882	0.8939	18.1	16.2
WCBC					
44	0.9834	0.9496	0.9665	22.3	21.5
Automatic monitor Chirk NO_2	0.9625	0.8855	0.9240	22.7	21.0

Table C.3 – PM_{10} and $PM_{2.5}$ Annualisation Summary (concentrations presented in µg/m^3)

Site ID	Annualisation Factor CM2 Brynteg	Annualisation Factor CM4 Penhesgyn	Average Annualisation Factor	Raw Data Annual Mean	Annualised Annual Mean
Automatic monitor Chirk PM_{10}	1.0281	1.0481	1.0381	9.0	9.3
Automatic monitor Chirk $PM_{2.5}$	1.2468	1.3591	1.3029	2.3	3.0
CM1 Llynfaes PM_{10}	1.0587	1.2260	1.1424	22.7	25.9
CM1 Llynfaes $PM_{2.5}$	1.1636	1.4624	1.3130	8.9	11.7

Appendix E: Impact of COVID-19 upon LAQM

The COVID-19 pandemic has impacted air quality at local, regional and national scales and presented challenges to Local Authorities in undertaking statutory LAQM duties. This section outlines the impact of COVID 19 on air quality in North Wales during 2020. Further detail on air quality impacts at the national scale can be viewed through the Reports & Seminars section of airquality.gov.wales.

Impacts of COVID-19 on Air Quality within North Wales

IACC recorded a very significant dip in traffic last year along the A55 associated with low NO_2 concentrations. Although the ferry traffic (the NO_X tube located at Marine Square) saw little fluctuation as freight was still very apparent on the A55 up until BREXIT Exit 31st Dec 2020.

Co-incidentally, we had huge Holyhead Port HGV traffic jams leading up to BREXIT exit along the A55, as hauliers tried to shift as much freight through Wales to Dublin via Holyhead Port. The Highways Agency had to cone off the lanes and install porta-loos along the final stages of the A55 (similar to Operation Stack in Dover) in the weeks before Christmas.

In **CCBC** all of the diffusion tubes change-over were undertaken in accordance with the national UK monitoring schedule. This allowed to demonstrate a significant reduction in traffic source pollutants, in line with the observed Annual Average Daily Traffic (AADT) flows reduction due to the impact of the pandemic.

Opportunities Presented by COVID-19 upon LAQM

In **DCC**, temporary one-way systems were implemented in various town centres to enable the extension of pavements (particularly to promote social distancing while walking/cycling etc).

Challenges and Constraints Imposed by COVID-19 upon LAQM

The main challenge upon LAQM was the suspension of diffusion tube change-over in **DCC**, **GC**, **FCC** and **WCBC**.

There was no data reported during the lockdown months in **DCC**, **GC** and **FCC**. In **WCBC**, diffusion tubes exposed from the start of March were in situ until the start of June, therefore, in terms of compliance with the exposure calendar 3 months were missed, resulting in a data capture of 75%, which falls at a small impact rating. Some tubes had a lower data capture unrelated to Covid-19.

In **WCBC**, the installation of Chirk automatic monitor was delayed to July 2020 instead of March 2020. Regarding the AURN automatic monitor, instructions from the Environment Agency (EA) meant that local site operator visits were changed from fortnightly to monthly at the start of the pandemic. Fortnightly visits resumed in August again at the EA instructions. As the data collection and ratification from this site is the responsibility of DEFRA and the Devolved Administrations it is not believed that there has been any adverse impact.

Table E.1 – Impact Matrix

Category	Impact Rating: None	Impact Rating: Small	Impact Rating: Medium	Impact Rating: High
Automatic Monitoring – Data Capture (%)	More than 75% data capture	50 to 75% data capture	25 to 50% data capture	Less than 25% data capture
Automatic Monitoring – QA/QC Regime	Adherence to requirements as defined in LAQM.TG16	Routine calibrations taken place frequently but not to normal regime. Audits undertaken alongside service and maintenance programmes	Routine calibrations taken place infrequently and service and maintenance regimes adhered to. No audit achieved	Routine calibrations not undertaken within extended period (e.g. 3 to 4 months). Interruption to service and maintenance regime and no audit achieved
Passive Monitoring – Data Capture (%)	More than 75% data capture	50 to 75% data capture	25 to 50% data capture	Less than 25% data capture
Passive Monitoring – Bias Adjustment Factor	Bias adjustment undertaken as normal	<25% impact on normal number of available bias adjustment colocation studies (2020 vs 2019)	25-50% impact on normal number of available bias adjustment studies (2020 vs 2019)	>50% impact on normal number of available bias adjustment studies (2020 vs 2019) and/or applied bias adjustment factor studies not considered representative of local regime
Passive Monitoring – Adherence to Changeover Dates	Defra diffusion tube exposure calendar adhered to	Tubes left out for two exposure periods	Tubes left out for three exposure periods	Tubes left out for more than three exposure periods
Passive Monitoring – Storage of Tubes	Tubes stored in accordance with laboratory guidance and analysed promptly.	Tubes stored for longer than normal but adhering to laboratory guidance	Tubes unable to be stored according to be laboratory guidance but analysed prior to expiry date	Tubes stored for so long that they were unable to be analysed prior to expiry date. Data unable to be used
AQAP – Measure Implementation	Unaffected	Short delay (<6 months) in development of a new AQAP, but is on-going	Long delay (>6 months) in development of a new AQAP, but is on-going	No progression in development of a new AQAP
AQAP – New AQAP Development	Unaffected	Short delay (<6 months) in development of a new AQAP, but is on-going	Long delay (>6 months) in development of a new AQAP, but is on-going	No progression in development of a new AQAP

Glossary of Terms

Abbreviation	Description
AQAP	Air Quality Action Plan - A detailed description of measures, outcomes, achievement dates and implementation methods, showing how the LA intends to achieve air quality limit values'
AQMA	Air Quality Management Area – An area where air pollutant concentrations exceed / are likely to exceed the relevant air quality objectives. AQMAs are declared for specific pollutants and objectives
APR	Air quality Annual Progress Report
AURN	Automatic Urban and Rural Network (UK air quality monitoring network)
Defra	Department for Environment, Food and Rural Affairs
DMRB	Design Manual for Roads and Bridges – Air quality screening tool produced by Highways England
FDMS	Filter Dynamics Measurement System
LAQM	Local Air Quality Management
NO_2	Nitrogen Dioxide
NO_X	Nitrogen Oxides
PM_{10}	Airborne particulate matter with an aerodynamic diameter of 10µm (micrometres or microns) or less
$PM_{2.5}$	Airborne particulate matter with an aerodynamic diameter of 2.5µm or less
QA/QC	Quality Assurance and Quality Control
SO_2	Sulphur Dioxide