Newport City Council

2022 Air Quality Progress Report (2021 data year)

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2022 Air Quality Progress Report

In fulfilment of Part IV of the Environment Act 1995

Local Air Quality Management

Date: October 2022

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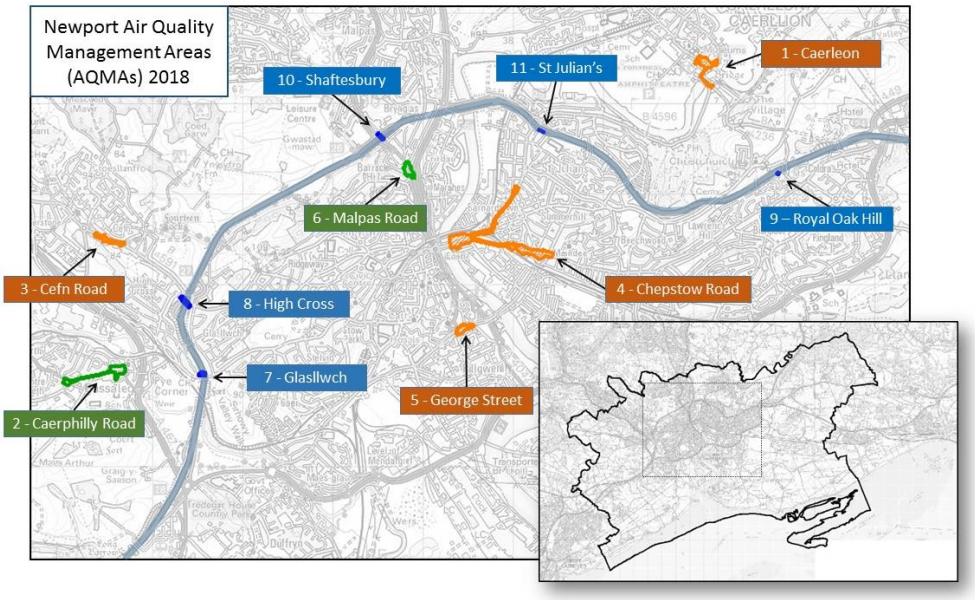
Executive Summary: Air Quality in Our Area

Air Quality in Newport City Council

In 2021, annual average concentrations of nitrogen dioxide were below the air quality objective of 40µg/m^3 in all of Newport City Council's (NCCs) Air Quality Management Areas (AQMAs). Recorded nitrogen dioxide concentrations experienced an overall increase in Newport since 2020, an outcome likely attributable to lower 2020 concentrations resulting from travel restrictions associated with the Covid-19 pandemic. Measured 2021 concentrations were below 2019 concentrations, which is not wholly unexpected given that there are likely to still be pandemic effects (on travel behaviours), as well as improvements to the fleet.

Prior to 2020; most of the monitoring locations within the AQMAs were at or just above the objective level. Given that the last two years have not been representative due to travel restrictions put in place because of the Covid-19 Pandemic, the St Julian's AQMA, which has lower concentrations, will not be revoked until a more representative year of monitoring has been completed (probably by the end of 2022).

Current AQMAs



Further AQMA details can be found at: https://uk-air.defra.gov.uk/aqma/list?la=N&country=wales&pollutant=no2

A rebound in traffic levels was anticipated in 2021, however measured NO_2 concentrations remained below 2019 levels. This could be indicative of a continuation of reduced travel during the later stages of the pandemic and/or the beneficial impacts from a growing Electric Vehicle (EV) fleet in the public sector, commercial and private owner settings, as well as newer combustion engine vehicles entering the fleet, and is likely a combination of the two. Subsequent full year's of data collation will assist in analysis of Newport's long term air quality trend.

The vast majority of air pollution in the NCC area is caused by road traffic, with other sources including domestic burning and commercial sources (these typically being covered by Permitting Regimes). However, commercial and domestic sources should continue to reduce emissions, hence improving air quality.

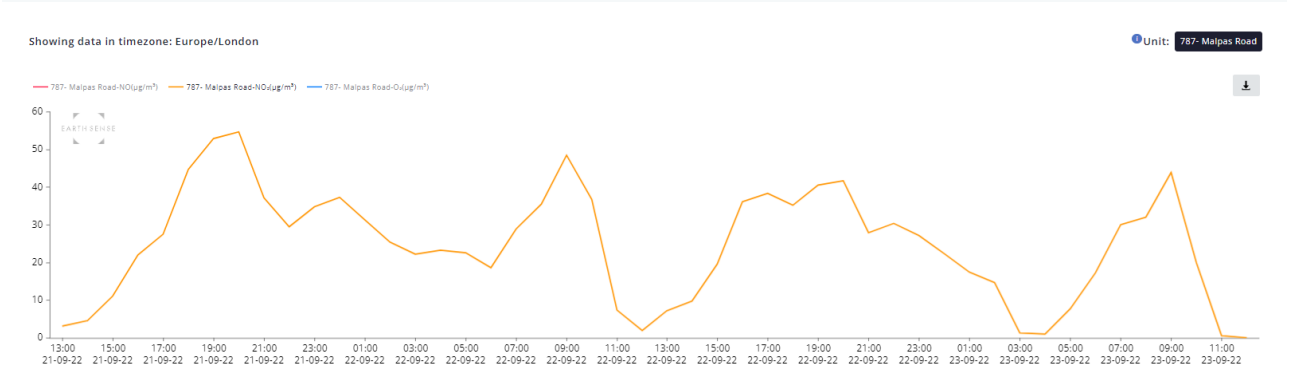
Newport's Sustainable Transport Strategy (STS) is in its action-planning phase and the following projects are being implemented: increased proportion of electric buses, electric Refuse Collection Vehicle (eRCV) fleet, Electric Taxis pilot and EV charging in public areas. In addition to this work a refresh of Newport's 2008 Air Quality Action Plan has been taking place which has included a scoping exercise identified for early 2022 which will look at the range of assessments that will need to be undertaken in the context of air quality monitoring data for 2019 (2019 being used as a baseline due to the inadmissible nature of monitoring data for 2020 and 2021 due to the COVID pandemic). A vital part of this will be engaging with communities as part of producing the AQAP; to which end an Air Quality Group serving the Caerleon AQMA was set up in September 2021 as a pilot for the setting up other air quality groups to serve the other five non M4 based AQMAs.

Actions to Improve Air Quality & Understanding

Covid-19, whilst impacting on behaviour, did not prevent the ongoing work of the STS steering group. This has resulted in a draft action plan, which represents current and planned work streams, which will contribute either directly or indirectly towards improvements in air quality (see Appendix E).

An initial purchase of three Zephyr real time air quality sensor systems has been undertaken for the AQMAs of Caerleon, Chepstow Road and Malpas Road. Initial results are providing greater insight into the pollution/time relationships for each of the AQMAs.

An example of a two day period for the Malpas Road for 21st and 22nd September 2022 is reproduced below:



In view of the indicative nature of these instruments the outputs that are available are used purely to obtain an idea of when pollution levels appear to be elevated and how timed interventions may be applicable in each of the AQMAs. This can be explored through the AQAP process.

Development Control consultation provides increased opportunities and scope for a range of measures to be sought at the Planning stage of new development. This currently includes but is not limited to:

- Anti-idling measures during construction phases which are to be retained during operational phases of development.
- Ultra-low energy infrastructure e.g. EV charge points, e-bike storage and charging.
- Green infrastructure which has associated air quality benefits.
- Construction routing plans that avoid AQMAs.
- Requests for additional abatement for diesel back up generation e.g. secondary catalytic reduction.
- Design that does not promote street canyon formation.

Local Priorities and Challenges

The priority for NCC is to undertake LAQM duties, including ongoing monitoring and reporting of air quality in its area. Action Planning and development of mitigation options is

also a priority. The ongoing challenge for addressing air quality in NCC is the availability of resources to enable work beyond that of core statutory duties.

NCC are conscious that communities wish to be more engaged in air quality work and the development of air quality groups that will generate information that can feed into air quality action planning and the STS continues to be seen as a priority into 2022. It has been possible to engage in projects such as the NCC STS and Air Inequalities, however, this stretches existing resources (half officer equivalent) to their maximum with little capacity for additional work.

How to Get Involved

Air pollution is caused by all of us to some degree – only by working together air pollution can be reduced for the benefit of all of us.

- **Let us know what you are doing** - If you or your group / Organisation is doing something proactive to encourage and support less polluting forms of travel / reduce air pollution, please let us know by emailing Air.Quality@Newport.gov.uk.
- **Air Quality Report** - Read all reports relating to air quality that are publicly available via the council's website – www.newport.gov.uk/airquality.
- **Clean Air Day** is an annual event that anyone can be involved in; please see Clean Air Day | CAD Cymru 2022 (actionforcleanair.org.uk) for further details.

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1 Actions to Improve Air Quality

Previous Work in Relation to Air Quality

An update of the 2008 Air Quality Action Plan (AQAP) (Newport City Council, 2007) is expected to be put before cabinet in late 2022, early 2023.

The Council stated intentions in the 2019 Annual Progress Report (APR) to revoke the St Julian's Air Quality Management Area (AQMA) given its ongoing compliance. This is based upon the ongoing compliance of the diffusion tube situated at Denbigh Road since 2016. However, due to the uncertainties over ongoing trends as a result of pandemic lockdowns during 2020 and 2021 and resultant changed working and traffic patterns, it is considered that at least a further year of monitoring should be undertaken. As part of this work four additional diffusion tube locations have been deployed to provide a detailed assessment in St Julians AQMA in support of the revocation process. St Julian's AQMA will be considered further as part of the reporting for 2022 data in the 2023 APR which will be produced in spring 2023.

No new AQMAs have been declared.

Air Quality Management Areas

AQMAs are declared when air quality is above the air quality objective (see Appendix A). After declaring an AQMA the authority must prepare an AQAP within 12 months setting out measures it intends to put in place to improve air quality to acceptable levels.

A summary of AQMAs declared by Newport City Council can be found in Table 1.1. Further information related to declared or revoked AQMAs, including maps of AQMA boundaries are available online at:

https://uk-air.defra.gov.uk/aqma/list?la=N&country=wales&pollutant=no2

Figure 1.1 – Map of Air Quality Management Areas

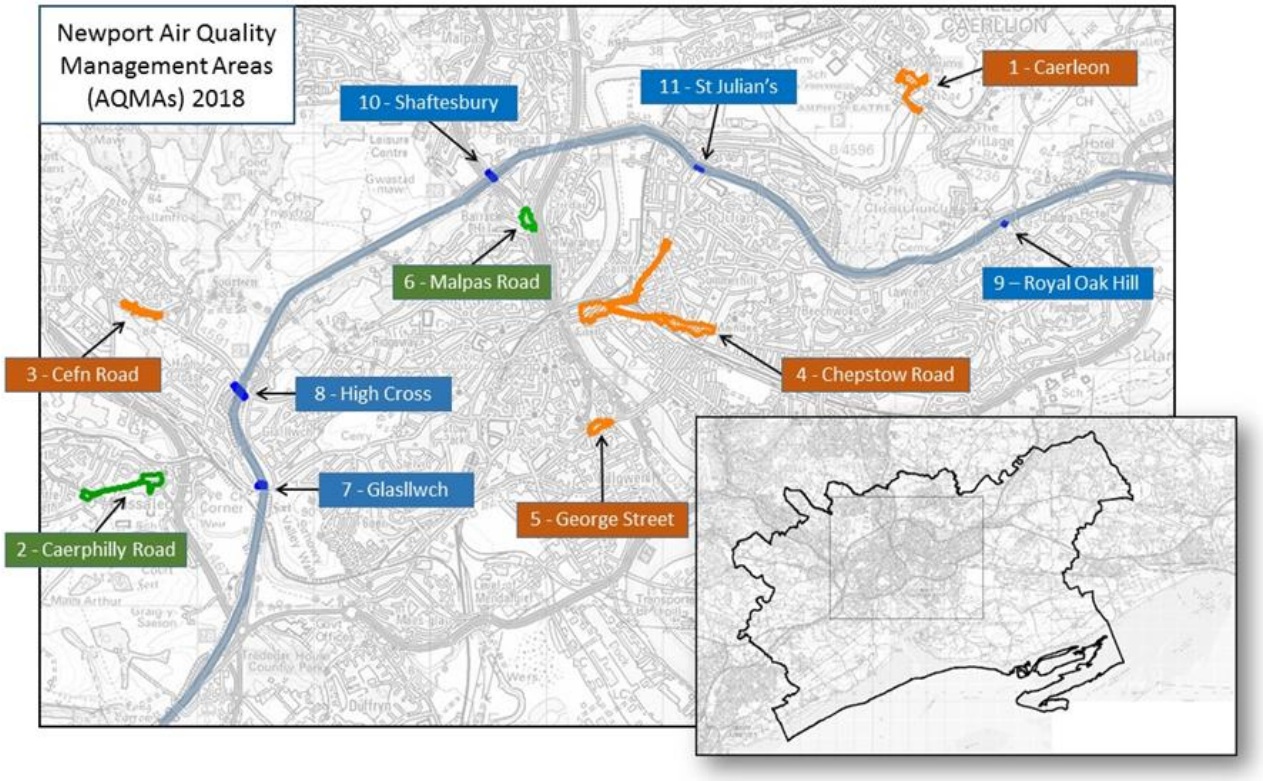


Table 1.1 – Declared Air Quality Management Areas (in date order)

AQMA	Relevant Air Quality Objective(s)	Comments on Air Quality Trend	Description	Action Plan
Glasllwch 12/2004	NO_2 annual mean	5 years to 2019 show mixed picture of potential improvement. Trend is towards compliance. 2020 is anomalous so 2021/22 data required before revocation can be considered by WG.	Residential properties bounding an M4 motorway junction roundabout	2008 AQAP being updated currently
Shaftesbury 12/2004	NO_2 annual mean	4 years to 2019 show compliance. 2020 is anomalous so 2021/22 data required before revocation can be considered.	Residential properties bounding an M4 motorway junction roundabout	2008 AQAP being updated currently
St Julian's 12/2004	NO_2 annual mean	5 years to 2019 show compliance. 2020 is anomalous so 2021/22 data required before revocation can be considered by WG.	Residential properties bounding an M4 motorway cutting and slip road.	2008 AQAP being updated currently
Malpas Road 05/2005	NO_2 annual mean	5-year trend suggests move towards sustained compliance however only one year of compliance in 2018. 2020 data anomalous and excluded.	Mixed residential and commercial street canyon bounding A4051 Malpas Road	2008 AQAP being updated currently
Caerleon/ Chepstow Road 05/2005	NO_2 annual mean	Two out of nine tube locations have been non-compliant for at least 4	Two main roads into Newport (B4596 Caerleon Road & B4591 Chepstow	2008 AQAP being updated currently

		years, however the remaining locations show mixture of compliance with a relatively flat trend suggesting slow movement towards meeting the AQO. 2020 data anomalous and excluded.	Road) which are bounded by street canyons comprising mixed residential and commercial terraces.	
Royal Oak Hill 05/2005	NO_2 annual mean	5-year trend suggests move towards sustained compliance.2020 data anomalous and excluded.	A single property adjacent to the M4 motorway just west of where Royal Oak Hill crosses the motorway.	2008 AQAP being updated currently
Caerleon High Street 05/2005	NO_2 annual mean	5-year trend suggests move towards sustained compliance. 2020 data anomalous and excluded.	A number of properties along either side of the High Street one-way system in Caerleon.	2008 AQAP being updated currently
George Street 07/2018	NO_2 annual mean	A mixture of 5 year and three trends for monitoring locations suggest an upward trend to 2019. 2020 data is anomalous and excluded.	George Street between George Street / Commercial Road Junction to the George Street / Lower Dock Street Junction. Broad street canyon that is heavily trafficked.	2008 AQAP being updated currently
High Cross 07/2018	NO_2 annual mean	5-year and 4-year trends for monitoring locations are towards compliance. 2020 data is anomalous and excluded.	Encompasses 67 and 69 Glasllwch Crescent at junction 27 of the M4.	2008 AQAP being updated currently
Cefn Road 07/2108	NO_2 annual mean	Max of 4-years to compare and trends to 2019 were upward. 2020	Cefn Road between Cefn Road/Ruskin Avenue junction up to and including 116 Cefn Road.	2008 AQAP being updated currently

		data is anomalous and excluded.		
Caerphilly Road 07/2018	NO_2 annual mean	Max of 4-years to compare and trends to 2019 were downward or maintaining AQO compliance. 2020 data is anomalous and excluded.	Caerphilly Road from the Caerphilly Road / Forge Rod roundabout up to and including 93 Caerphilly Road.	2008 AQAP being updated currently

AQMA boundary maps within Newport City Council can be viewed at https://uk-air.defra.gov.uk/aqma/list and are included in Appendix D.

Implementation of Action Plans

Newport City Council has taken forward a number of measures during 2021 in pursuit of improving local air quality through its STS. Details of all measures completed, in progress or planned are set out in Table 1.2. Details on these measures will also feature in the forthcoming refresh of the 2008 AQAP which is being produced with a view to cabinet member consideration late 2022/early 2023.

Key measures completed in 2021 are:

- Air source heat pumps and EV charging points installed at some Schools in Newport;
- Introduction of new active travel routes, encouraging travel via walking and cycling;
- Greater incorporation of Green Infrastructure into the council's work, allowing for increased opportunities for green infrastructure development within AQMAs;
- Development of anti-idling measures at Bassaleg and Charles William Schools;
- Ongoing commitment to Clean Air Day (2021), a day attended by ministerial members of the Welsh Government. Promoted EV roll out in public services and engaging children with air quality messages;
- Installation of three Zephyr air quality sensor systems in three AQMA locations to better understand diurnal variations in air quality and providing insight into times of day when interventions can have maximum impact.

Newport City Council expects the following to be completed over the course of the next reporting year (2022):

- Setting up of further Air Quality Stakeholder groups for priority AQMAs with a view to informing the AQAP process and engaging communities in helping identify interventions for their AQMAs; and
- Ongoing exploration of engineered solutions to air quality impacts in street canyons and the recruitment of academia and Welsh Government in considering this.
- A 2022 Clean Air Day Event involving a guided environmental walk for local school children as part of education engagement.

Table 1.2 – Progress on Measures to Improve Air Quality (1) (2)

No.	Measure	Focus	Lead Authority	Planning Phase	Implementation Phase	Indicator	Target Annual Emission Reduction in the AQMA	Progress to Date	Progress in Last 12 Months	Estimated Completion Date	Comments Relating to Emission Reductions
1	Introduction of electric bus fleet	Reduce emissions across AQMAs	NCC & Newport Bus Company	Complete	Ongoing	Quantity of emissions eliminated using NO_2 as surrogate	Extremely difficult if not impossible to prove	Provision of 16 full electric buses in place of former ICE based buses since October 2020	Aspirations now extend to achieving full electric fleet of buses	2028 WG target for all buses to be zero tailpipe emissions	Aim to have whole bus fleet on zero emission vehicles
2	Introduction of eRCVs	Reduce emissions across AQMAs	NCC	Complete	Ongoing	Quantity of emissions eliminated using NO_2 as surrogate	Extremely hard if not impossible to prove	Provision of 3 eRCVs in place of former ICE based RCVs planned for 2021	Further eRCVs	X4 eRCVs in 2021. X6 eRCVs by March 2022 X7 caged vans in 2022/23	Aim to have whole RCV fleet on zero emission vehicles.
3	ECO STARS Fleet scheme	Sign up to scheme and quantification of impact	NCC & TRL	Complete	Complete	Fuel savings converted into NO_2 savings value	Extremely hard if not impossible to prove	Scheme recruitment phase completed. Metrics phase ongoing.	X30 new members of scheme bringing total to 47	Scheme membership static at 2021	Survey of existing scheme members re. fuel savings
4	Anti-Idling Schemes	Development control consultations	NCC	Complete	Complete	Uptake of anti-idling schemes through planning	Extremely hard if not impossible to prove	Anti-idling asked for wherever relevant to applications	Anti-idling schemes going into two school developments	Complete	School communities keen on benefits of anti-idling

5	ULEV infrastructure	Development control consultations	NCC	Complete	Ongoing	Uptake of EV through planning	Extremely hard if not impossible to prove	ULEV infrastructure asked for on most development proposals	ULEV infrastructure being offered at planning stage proactively in some cases	Ongoing	ULEV contribution to reducing emissions and move to AQO compliance welcomed
6	Real time AQ sensor system purchase (x3 units)	Diurnal variation of pollution in AQMAs to inform interventions	NCC	Complete	Ongoing	Use of diurnal data in AQMA intervention planning	Single location data on progress to AQO compliance	Procurement of x3 units	Units ordered for delivery in 2021	Ongoing use once deployed until compliance achieved.	Units will provide indication of air quality improvement at point locations in AQMAs
7	Active Travel Network Map	Public Awareness	NCC	Ongoing	Ongoing	Increase in Active Travel routes and usage	Extremely hard if not impossible to prove	December 2021 ATNM completed for sign off by WG during 2022.		2022 + Publication of maps	Increased active travel journeys will support emission reduction across the City
8	Green Infrastructure (GI)	Air Quality & Wellbeing benefits associated with green infrastructure	NCC	Ongoing	Ongoing	Development control and other opportunities to request GI	Extremely hard if not impossible to prove	Requests for GI have been made against a number of developments to date e.g., Bassaleg School refurbishment	Ongoing	n/a	Air quality beneficial GI has been demonstrated to intercept emissions and contribute to overall reductions.

Notes:

(1) These are measures that currently are active and not proposed i.e., Sustainable Travel Strategy based actions.

(2) Acronyms: ICE – Internal Combustion Engine; eRCV – electric Refuse Collection Vehicle; PHW – Public Health Wales.

2 Air Quality Monitoring Data and Comparison with Air Quality Objectives

Summary of Monitoring Undertaken in 2021

2.1.1 Automatic Monitoring Sites

This section sets out monitoring undertaken in 2021 and how results compare with the objectives.

Newport City Council undertook automatic (continuous) monitoring at two sites during 2021. Table 2.1 presents the details of the sites. National monitoring results are available at https://airquality.gov.wales/maps-data/measurements.

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

2.1.2 Non-Automating Monitoring Sites

Newport City Council undertook non-automatic (passive) monitoring of nitrogen dioxide at 81 locations during 2021. Table 2.2 presents the details of the sites.

Maps showing the locations of the monitoring sites are provided in **Figure 2.2**. Further details on Quality Assurance/Quality Control (QA/QC) and bias adjustment for the diffusion tubes are included in Appendix C.

Four new diffusion tube sites were installed by Newport City Council in September 2021 (1S1, 1S2, 1S3, 1S4). All four sites are installed on Denbigh Road.

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)
AN1	St Julian's (AURN)	Urban Background	no	332418	189603	NO, NO_2, PM_{10}, $PM_{2.5}$, Benzene & PAH	API & FIDAS	2.0	2	57	55
AN2	M4 Old Barn	Roadside	no	332685	189613	NO, NO_2 & O_3	API	2.0	40	35	5

Notes:

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

Figure 2.1 – Maps of Automatic Monitoring Sites

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)
NCC1	69 Chepstow Road	Roadside	Chepstow	331995	188415	2.16	n	5.8	6.5	0.7
NCC2C	69 Glasllwch Crescent	Façade	High Cross	328333	187869	1.73	n	0.0	6	6.0
NCC3A	13 Mill Street (Caerleon)	Façade	N	334092	190822	2.59	n	0.0	1.7	1.7
NCC4B	67 Glasllwch Crescent	Façade	High Cross	328363	187895	2.04	n	2.0	44.2	42.2
NCC5	276 Corporation Road	Roadside	N	332327	187773	2.69	n	3.4	4.1	0.7
NCC6B	153 Malpas Road	Roadside	Shaftsbury	330565	189618	2.16	n	0.0	4.1	4.1
NCC7B	64 Glasllwch Crescent	Façade	High Cross	328421	187778	1.1	n	2.0	44.2	42.2
NCC8	14 High Street Caerleon	Roadside	Caerleon	334105	190478	2.84	n	0.3	2	1.7
NCC9D	182 Corporation Road	Roadside	N	332062	187958	2.84	n	4.5	4.8	0.3
NCC11A	169 Caerleon Road	Roadside	N	332074	189106	3	n	0.3	3.4	3.1

NCC12A	73 George Street	Façade	George Street	331428	187498	2.74	n	0.0	2.7	2.7
NCC13A	Corporation Road Flats Crossing	Roadside	N	332955	186809	2.2	n	2.8	5.24	2.4
NCC14A	48 Malpas Road	Roadside	Malpas Road	330834	189310	2.44	n	0.0	4.1	4.1
NCC15	Glasllwch Crescent	Roadside	N	328443	187809	2.13	n	4.7	4.8	0.1
NCC16A	40 Denbigh Road	Roadside	St. Julian's	332320	189703	1.83	n	2.0	4	2.0
NCC17A	179 Malpas Road	Façade	Shaftsbury	330507	189664	2.16	n	0.0	20	20.0
NCC18C	158 Bassaleg Road	Façade	Glasllwch	328586	187008	1.9	n	0.0	8	8.0
NCC19A	700 Corporation Road	Roadside	N	332954	186768	2.2	n	4.6	7.04	2.4
NCC20C	222 Corporation Road	Roadside	N	332182	187872	2.54	n	2.4	3.2	0.8
NCC21D	M4 Groundhog 1 (Old Barn)	N/A	N	332690	189615	2.69	n	28.0	30	2.0
NCC23E	M4 Groundhog 2 (Old Barn)	N/A	N	332690	189615	2.69	n	28.0	30	2.0
NCC24C	19 Caerleon Road (Swift Hav)	Façade	Chepstow	331562	188549	2.54	n	0.0	1.7	1.7
NCC25C	19 High Street (Caerleon)	Façade	Caerleon	334182	190422	1.7	n	0.0	0.4	0.4
NCC26B	15 High Street, Caerleon	Façade	Caerleon	334131	190461	2.7	n	0.4	2.5	2.1

NCC27B	18 High Street, Caerleon	Roadside	Caerleon	334143	190454	2.59	n	0.3	1.7	1.4
NCC28B	155 Caerleon Road	Roadside	Chepstow	332047	189070	2.9	n	1.0	4.1	3.1
NCC29C	5 Cefn Road	Façade	Cefn Road	327600	188468	2.1	n	0.0	0.8	0.8
NCC30B	5 Caerphilly Road	Roadside	Caerphilly Road	327663	187024	2.56	n	1.4	2.3	0.9
NCC31	Buckland Cottage	Façade	Royal Oak Hill	334951	189237	1.83	n	0.0	9.3	9.3
NCC32E	21 Bridge Street	Façade	N	330421	190537	1.9	n	0.1	1.6	1.5
NCC33B	69 Cefn Road	Façade	Cefn Road	327390	188551	2.2	n	0.0	2.2	2.2
NCC34A	The Priory, Caerleon	Façade	N	334010	190532	2.59	n	0.0	1.7	1.7
NCC35A	6 Castle Street, Caerleon	Roadside	Caerleon	334232	190463	2.54	n	1.7	3.1	1.4
NCC36A	1 Castle Street, Caerleon	Roadside	Caerleon	334260	190479	2.79	n	2.7	3.7	1.0
NCC37	St. Julians School 1	Background	N	332499	189569	2.59	y	0.0	55	55.0
NCC38	St. Julians School 2	Background	N	332499	189569	2.59	y	0.0	55	55.0
NCC39	St. Julians School 3	Background	N	332499	189569	2.59	y	0.0	55	55.0
NCC40B	23 Bridge Street	Roadside	N	330065	187669	2.29	n	0.0	1.9	1.9
NCC41B	Bassaleg Road (162/3)	Façade	Glasllwch	328537	187005	2.69	n	0.0	11.5	11.5

NCC42	69 Cardiff Road (Bellevue Stores)	Roadside	N	330915	187046	2.79	n	0.8	5.6	6.4
NCC43A	7 Castle Street (Caerleon)	Roadside	Caerleon	334212	190446	2.59	n	0.0	1	1.0
NCC44B	175/177 Corporation Road	Roadside	N	332048	187989	2.2	n	0.0	4.3	4.3
NCC45B	201 Corporation Road	Roadside	N	332142	187921	2.45	n	0.0	2.4	2.4
NCC46B	*148 Chepstow Road	Roadside	Chepstow	332290	188339	2.84	n	0.0	2.7	2.7
NCC47A	9 Castle Street (Caerleon)	Roadside	Caerleon	334199	190431	2.79	n	0.0	1.4	1.4
NCC48D	85 Caerphilly Road	Roadside	Caerphilly Road	327053	186943	1.6	n	0.0	1.2	1.2
NCC49C	8 Caerphilly Road	Roadside	Caerphilly Road	327631	187043	2.29	n	0.6	2.5	1.9
NCC50	9 Caerleon Road (tattoo)	Roadside	Chepstow	331531	188536	2.26	n	1.7	4.1	2.4
NCC51	81 George Street	Façade	George Street	331400	187475	2.74	n	0.0	2.7	2.7
NCC52	9 Station Road (Caerleon)	Roadside	N	333880	190970	2.54	n	2.7	4.4	1.7
NCC53	5 High Street (Caerleon)	Roadside	Caerleon	333923	190564	2.26	n	0.0	4.1	4.1
NCC54	12 Eastfield Road	Façade	N	333177	191706	2	n	0.0	3.6	3.6

NCC55	52 College Glade	Façade	N	333403	191823	2	n	0.0	7.58	7.6
NCC57	30 Clytha Park Sq (Spar)	Roadside	N	330581	188070	2.7	n	0.0	2.1	2.1
NCC58	1 Caerau Road	Roadside	N	330563	188037	2.3	n	0.1	1.8	1.8
NCC59	99 Stow Hill	Roadside	N	331552	187056	2.28	n	0.0	2.4	2.4
NCC60	1 Victoria Place	Roadside	N	331010	187733	2.8	n	1.1	1.3	2.4
NCC62	17 George Street	Façade	George Street	331456	187543	2.5	n	5.7	7	1.3
NCC64	4-6 Malpas Road	Roadside	Malpas Road	330891	189199	2.64	n	0.0	3	3.0
NCC65	153/155 Chepstow Road	Roadside	Chepstow	332368	188340	2.39	n	0.0	2.4	2.4
NCC66	109 Chepstow Road	Roadside	Chepstow	332204	188374	2.56	n	0.0	2.4	2.4
NCC67	1-17 Corporation Road	Façade	Chepstow	331529	188476	2.38	n	0.0	3.7	3.7
NCC68	Art College, Clarence Place	Roadside	Chepstow	331386	188461	2.52	n	1.1	2.3	1.2
NCC69	180 Caerleon Road	Roadside	Chepstow	332089	189160	2.48	n	0.0	3.7	3.7
NCC70	1 Queens Hill	Façade	N	330841	188424	2	n	0.0	2	2.0
NCC71A	19 Cefn Road	Façade	Cefn Road	327526	188485	1.8	n	0.0	3.1	3.1
NCC72A	6 George Street	Façade	George Street	331405	187508	2.06	n	0.0	3.9	3.9

NCC74	Carlton House, Carlton Terr_ High Street, Caerleon	Roadside	Caerleon	334123	190374	2.37	n	1.3	2.6	1.3
NCC75	19 Goldcroft Common (Caerleon)	Façade	N	333751	190785	2.2	n	0.0	0.4	0.4
NCC78	Gwent Cottage, Caerleon	Façade	N	330820	188103	1.75	n	0.0	0.8	0.8
NCC79	708 Corporation Road	Roadside	Caerleon	332091	188382	1.6	n	2.8	5	2.2
NCC80	24 Bridge Street	Façade	N	330835	188508	1.7	n	0.1	2.2	2.1
NCC81	1 Livingstone Place	Roadside	N	334291	190566	2.54	y	0.0	2.0	2.0
NCC82	14 Queens Hill	Façade	N	330743	189444	2	n	0.0	4.6	4.6
NCC83	Charles Williams Primary School	Roadside	N	334208	190186	2.1	n	0.1	1.1	1.2
NCC84	41 Pant Road	Roadside	N	330825	188553	2	n	0.0	5.0	5.0
NCC85	34 Queens Hill	Façade	N	332946	186744	2	n	0.0	4.7	4.7
1S1	40 Denbigh Road RWP	Facade	St Julians detailed assessment for revocation	332320	189702	2.3	n	0.0	4.65	4.65
1S2	Denbigh Road Lampost	Roadside	St Julians detailed	332312	189702	2.2	n	5.94	5.94	0.0

			assessment for revocation							
1S3	Denbigh Road Rail	Roadside	St Julians detailed assessment for revocation	332306	189709	1.5	n	5.33	5.33	0.0
1S4	41 Denbigh Road RWP	Facade	St Julians detailed assessment for revocation	332300	189707	1.9	n	0.0	3.83	3.83

Notes:

(1) 0m indicates that the sited monitor represents exposure and as such no distance calculation is required.
(2) Sites in **bold** are indicative of a co-location site.

Figure 2.2 – Maps of Non-Automatic Monitoring Sites (AQMAs indicated by pink polygon)

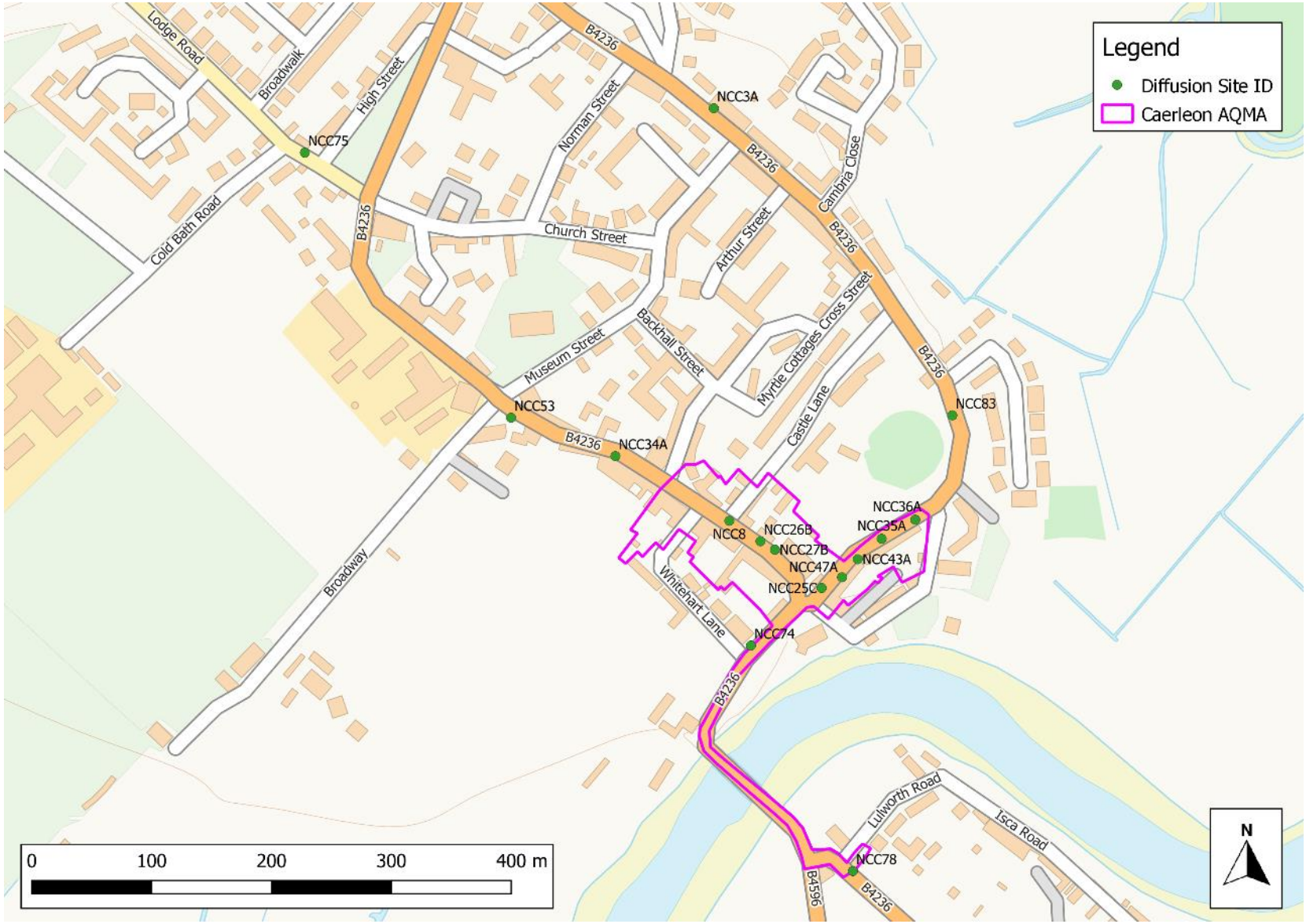


Figure 2.2 – Diffusion Tube Monitoring Locations (AQMAs indicated by pink polygon).

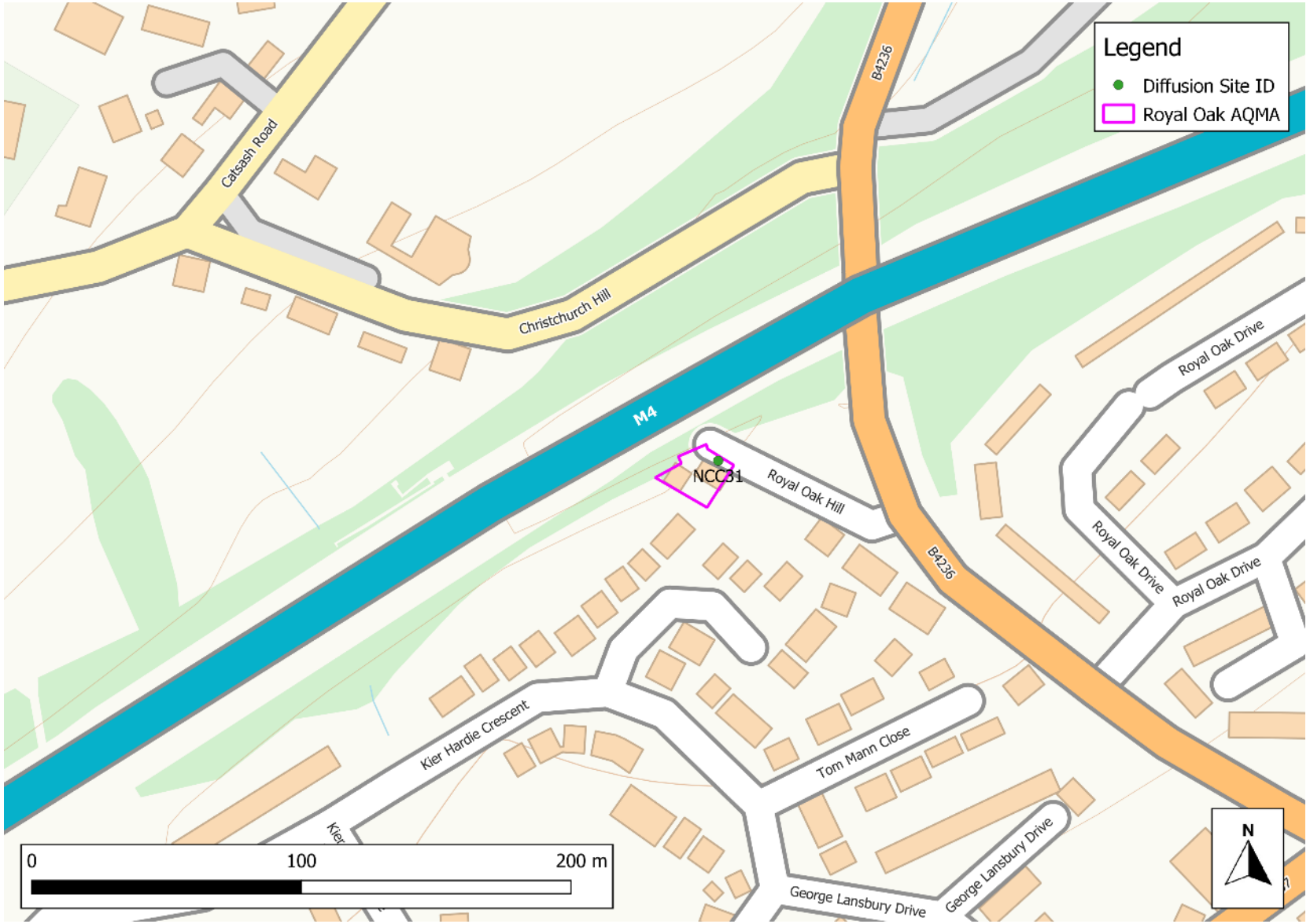


Figure 2.2 – Diffusion Tube Monitoring Locations (AQMAs indicated by pink polygon).

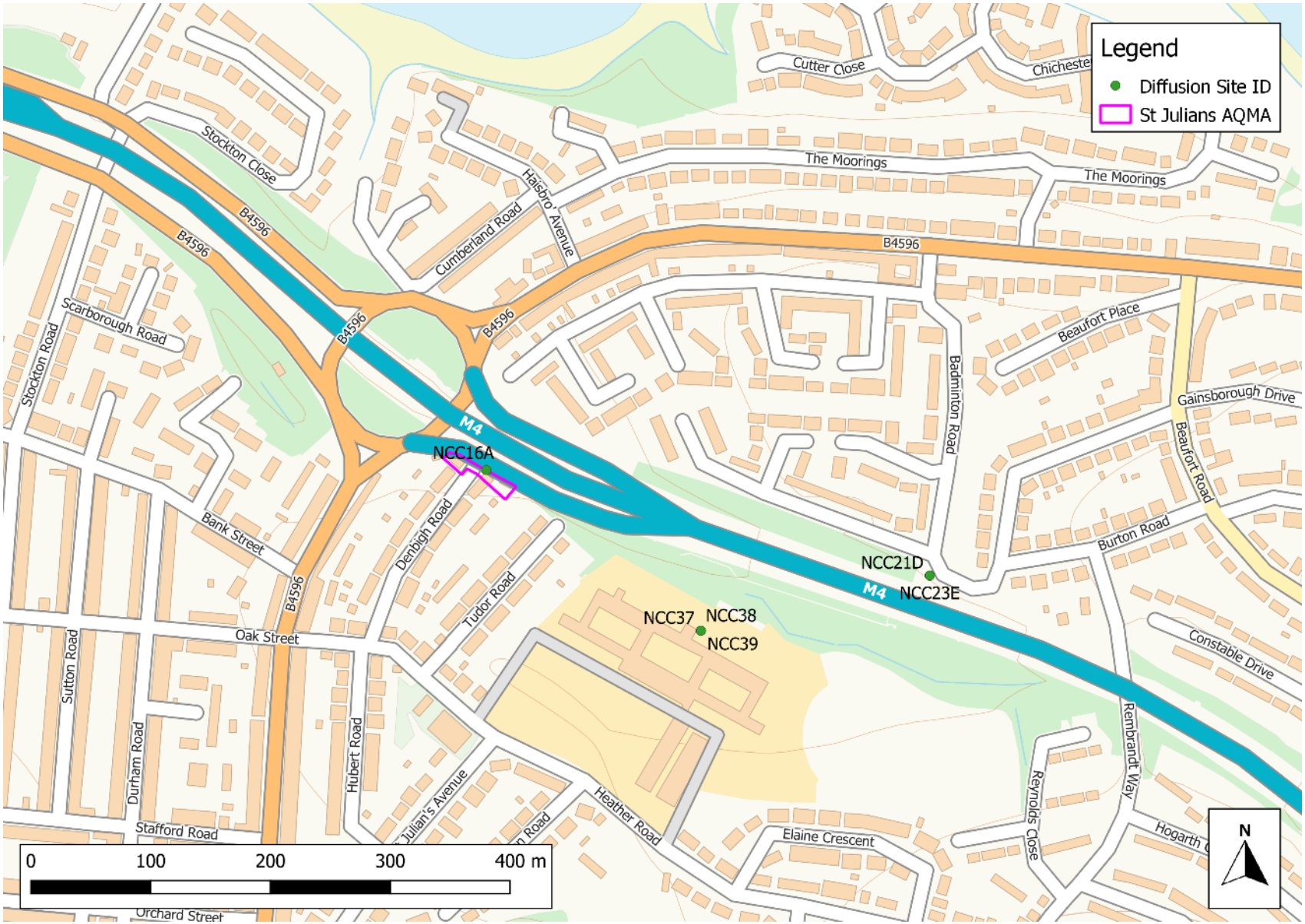


Figure 2.2 – Diffusion Tube Monitoring Locations (AQMAs indicated by pink and yellow polygons).

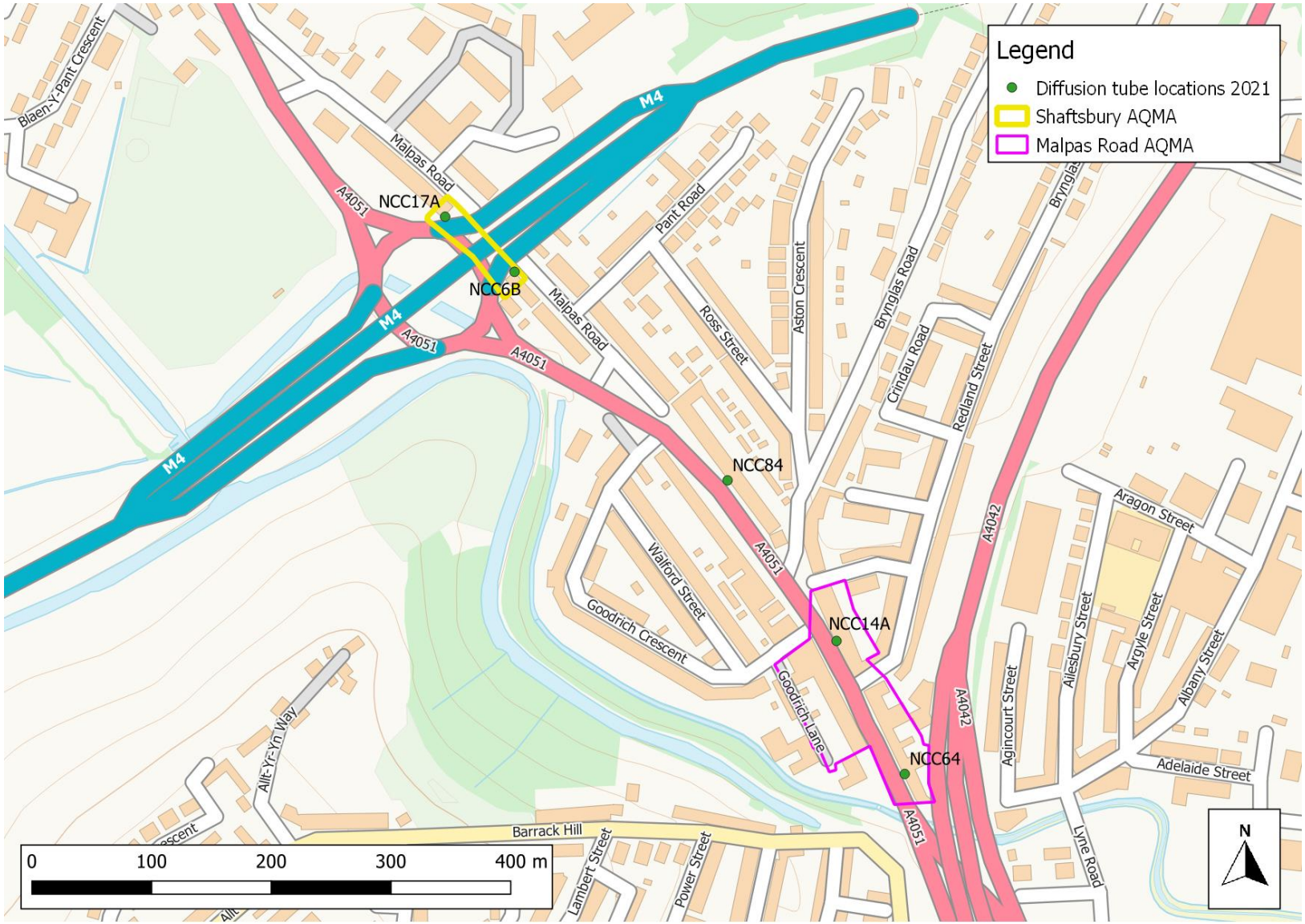


Figure 2.2 – Diffusion Tube Monitoring Locations (AQMAs indicated by pink polygon).

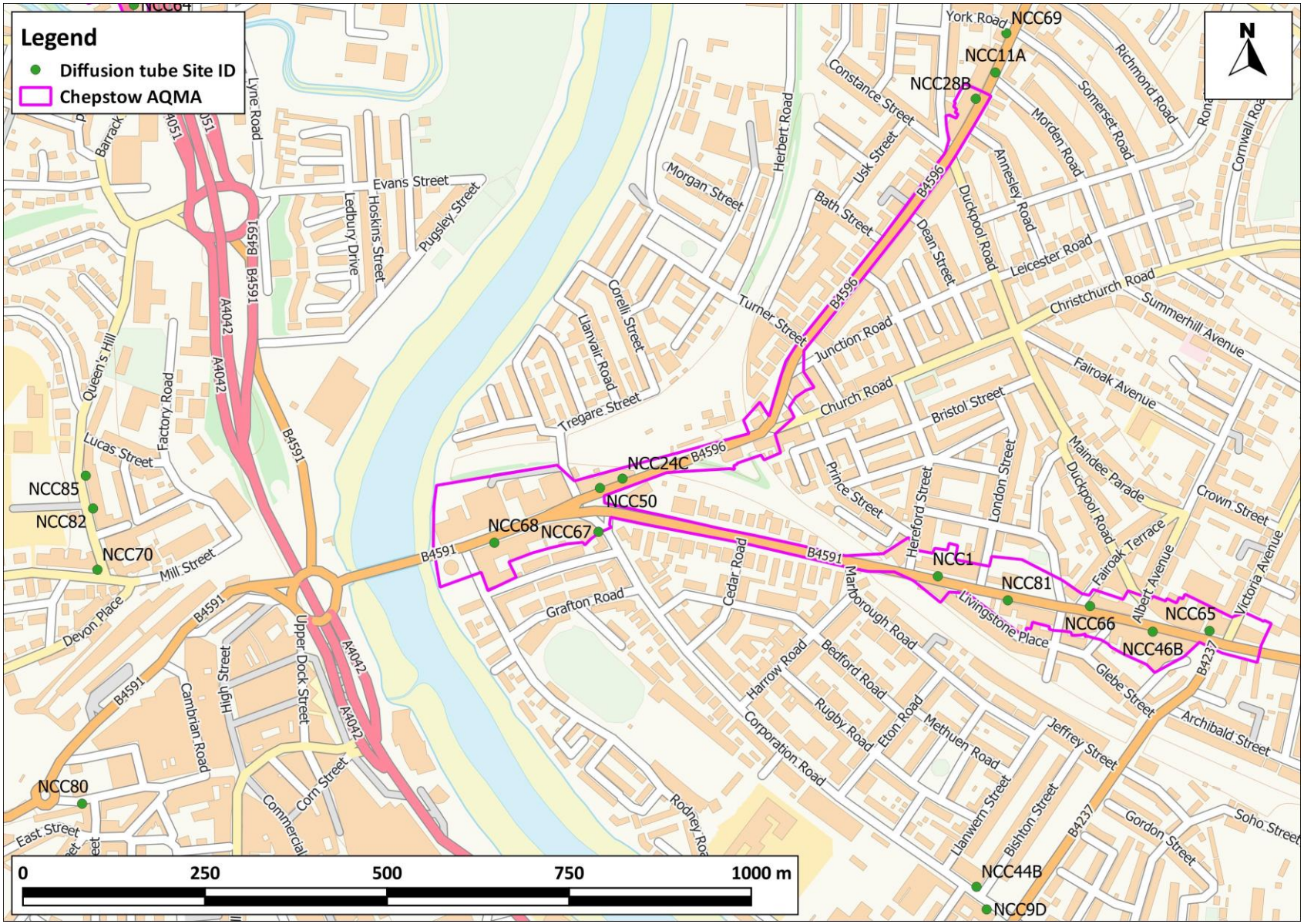


Figure 2.2 – Diffusion Tube Monitoring Locations (AQMAs indicated by pink polygon).

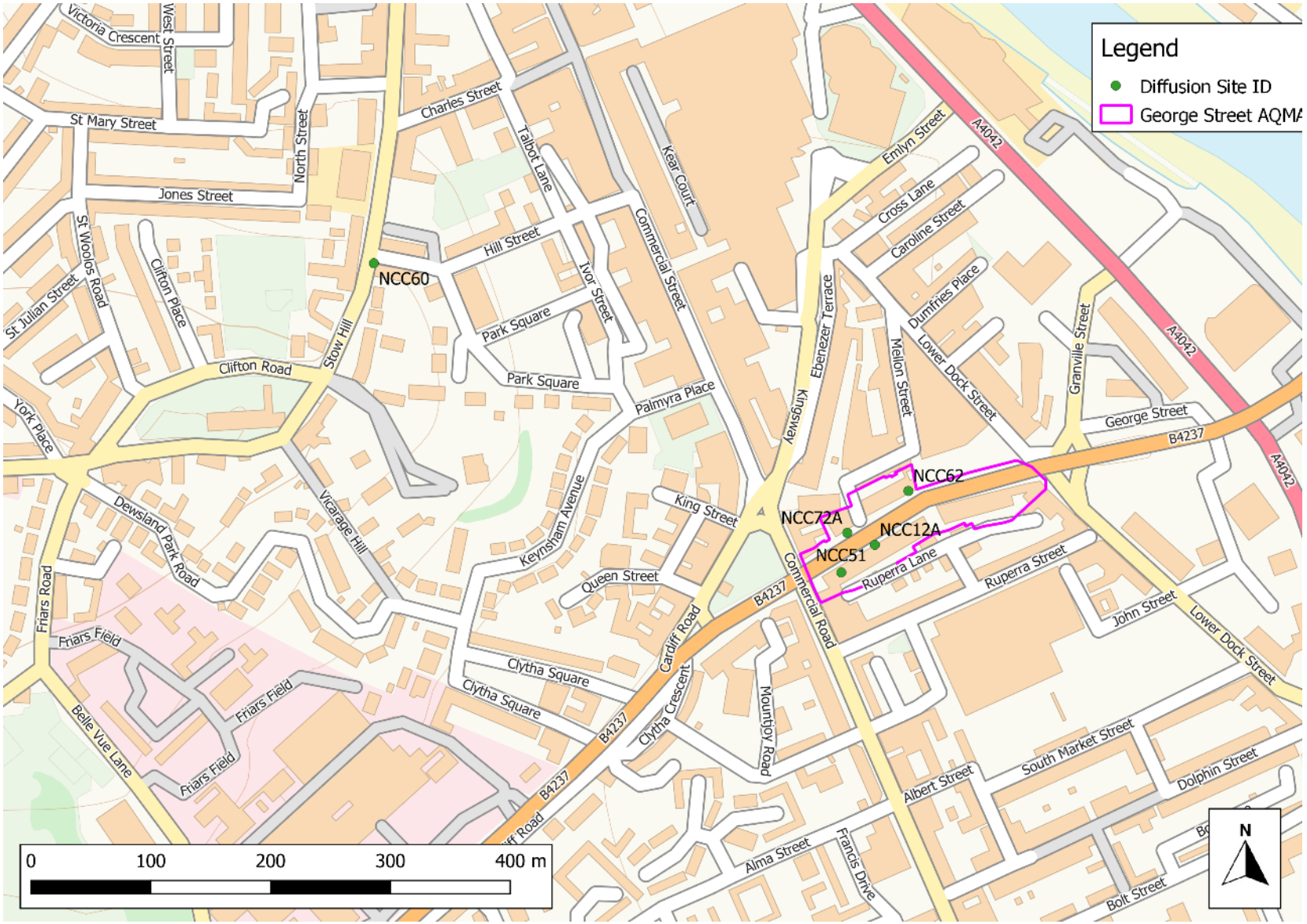


Figure 2.2 – Diffusion Tube Monitoring Locations (AQMAs indicated by pink polygon).

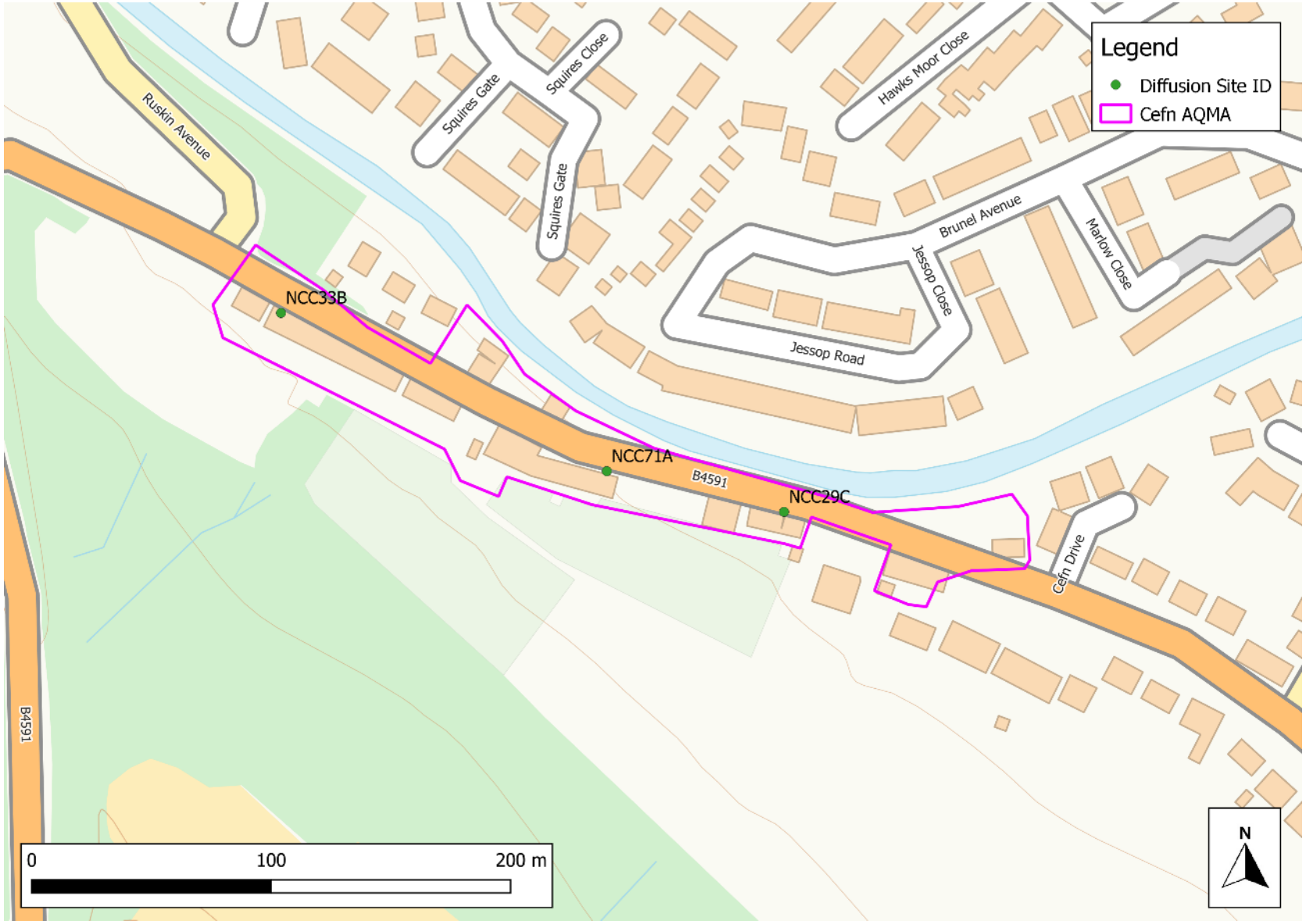


Figure 2.2 – Diffusion Tube Monitoring Locations (AQMAs indicated by pink polygon).

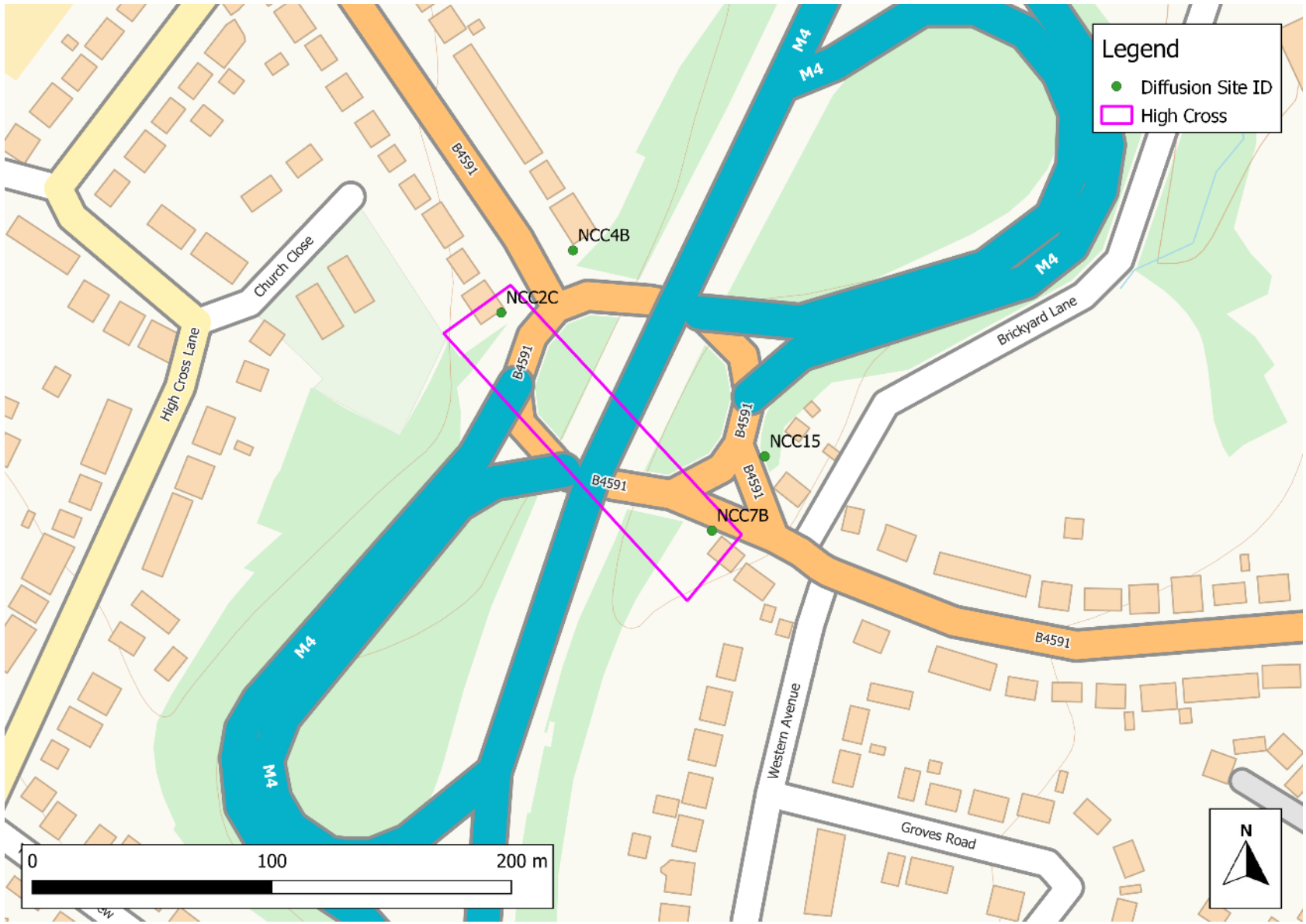


Figure 2.2 – Diffusion Tube Monitoring Locations (AQMAs indicated by pink polygon).

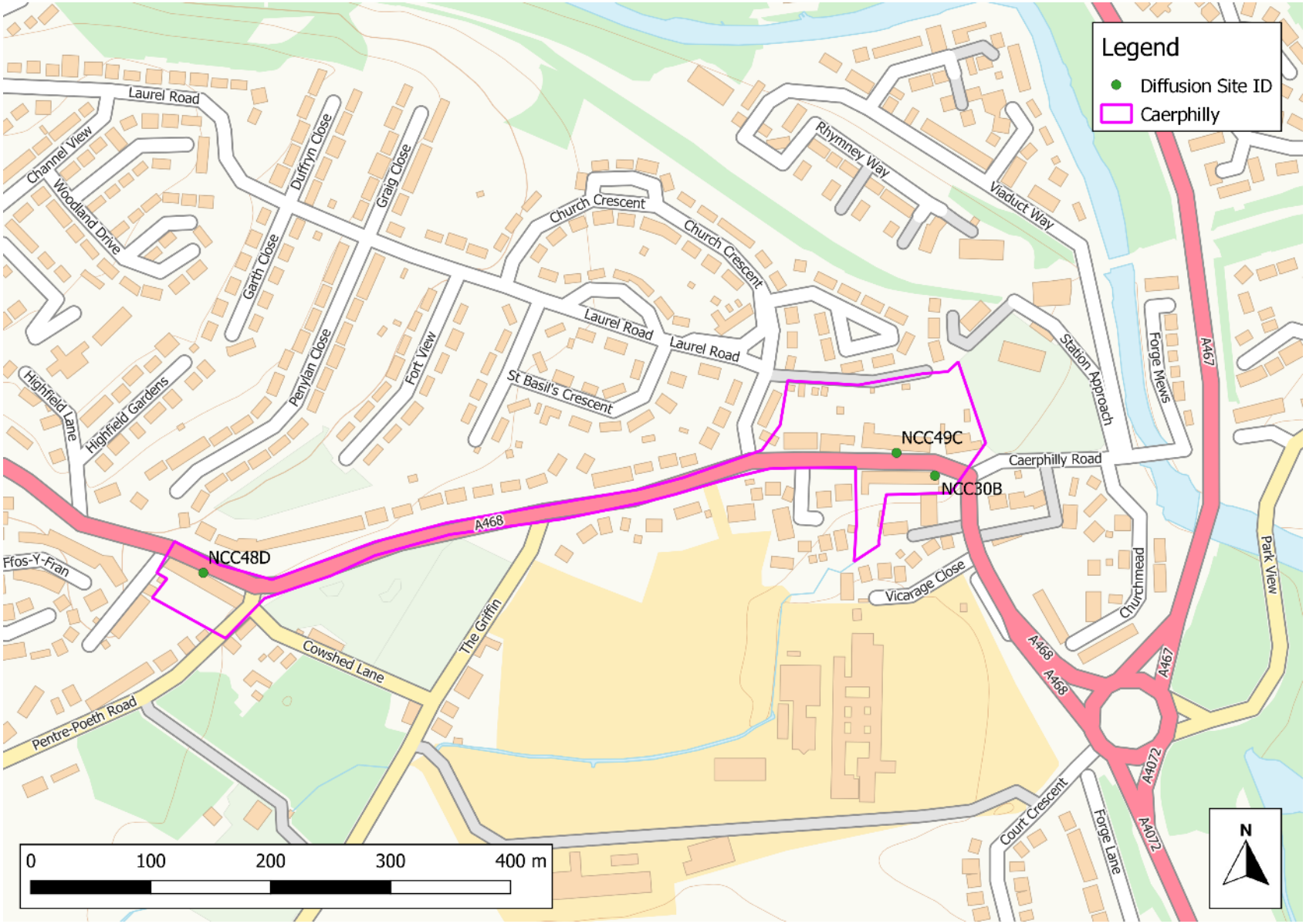

Legend
Diffusion Site ID
Caerphilly
NCC49C
NCC30B
NCC48D
Laurel Road
Channel View
Woodland Drive
Duffryn Close
Graig Close
Garth Close
Penylan Close
Fort View
Church Crescent
Church Crescent
Laurel Road
Laurel Road
St Basil's Crescent
Highfield Lane
Highfield Gardens
Rhymney Way
Viaduct Way
Station Approach
Forge Mews
A467
Caerphilly Road
A468
Ffos-Y-Fran
Cowshed Lane
The Griffin
Pentre-Poeth Road
Vicarage Close
Churchmead
Park View
A468
A468
A467
A4072
A4072
Court Crescent
Forge Lane
0
100
200
300
400 m
N

Figure 2.2 – Diffusion Tube Monitoring Locations (AQMAs indicated by pink polygon).

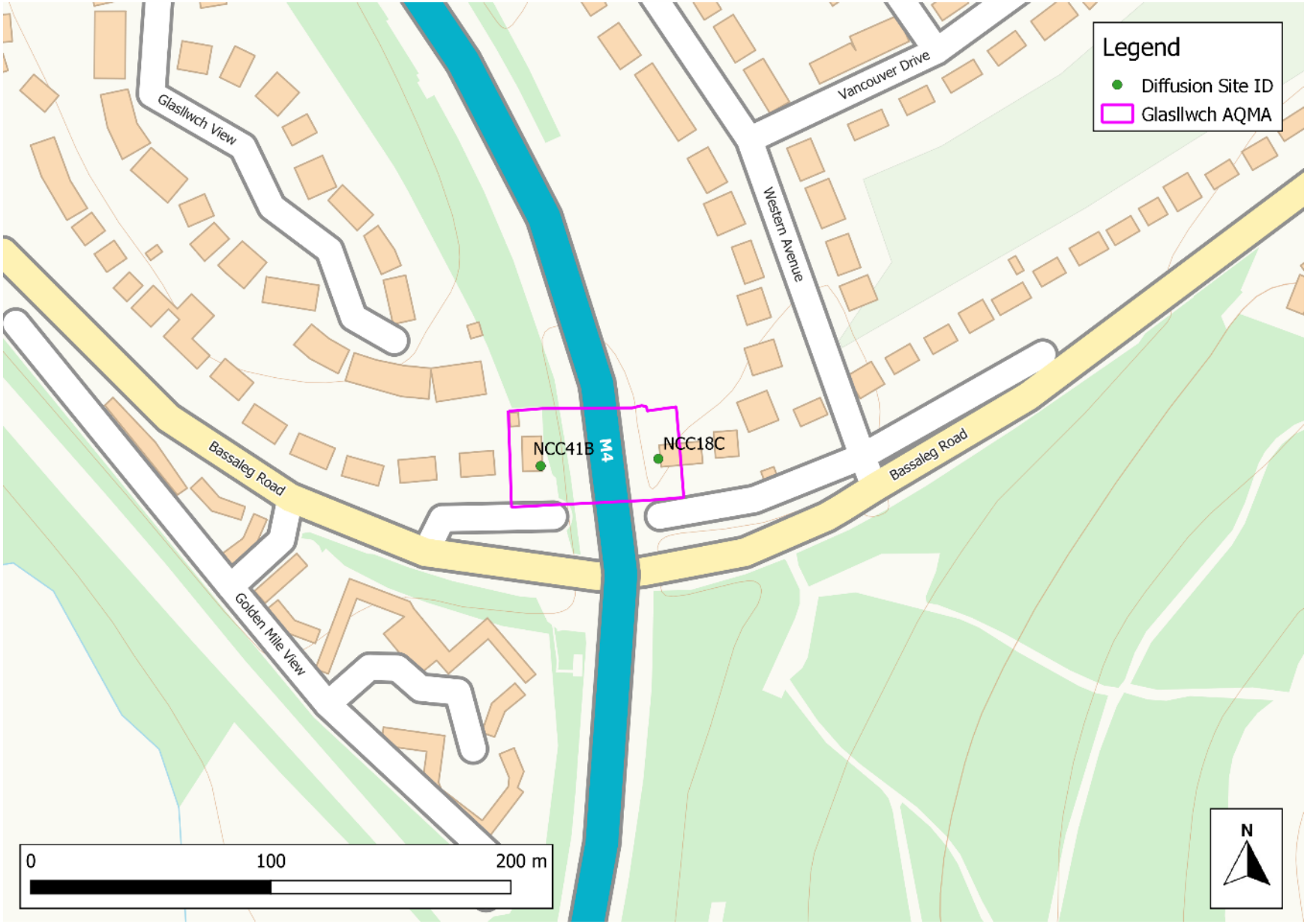


Table 2.3 – Annual Mean NO_2 Monitoring Results ($\mu g/m^3$)

Diffusion Tube ID	Site Type	Valid Data Capture for Monitoring Period (%)	Valid Data Capture 2021 (%)	NO_2 Annual Mean Concentration ($\mu g/m^3$)				
				2017	2018	2019	2020	2021
NCC1	Roadside	92	100.0	32.2	29.7	30.2	24.1	24.1
NCC2C	Façade	92	100.0	37	36.2	35.8	26.3	28.3
NCC3A	Façade	100	90.4	19.5	17.6	18	12.6	15.0
NCC4B	Façade	100	82.7	36.7	34.8	33.5	25.4	25.3
NCC5	Roadside	92	100.0	31.2	27.3	28.3	27	28.0
NCC6B	Roadside	58	92.3	37.3	34.6	31.2	25.7	24.4
NCC7B	Façade	92	92.3	29.3	27.6	29.2	21.1	23.4
NCC8	Roadside	100	92.3	41.3	38.3	34.6	27.9	28.9
NCC9D	Roadside	100	100.0	29.1	27.5	29.3	26.8	26.1
NCC11A	Roadside	83	100.0	33.7	31	32.3	25.2	26.4
NCC12A	Façade	92	100.0	37.8	35.1	36.4	28.1	29.1
NCC13A	Roadside	100	100.0	-	-	-	26.9	29.2
NCC14A	Roadside	100	100.0	40.4	37.6	40	25.9	28.6
NCC15	Roadside	83	100.0	24.2	22.5	23.4	24.3	22.5
NCC16A	Roadside	75	100.0	28.9	28.2	27.5	22.6	21.8
NCC17A	Façade	92	100.0	28.7	25.4	25.6	20.3	21.0
NCC18C	Façade	100	100.0	37.4	39.5	27.8	22.4	20.9
NCC19A	Roadside	92	92.3				30	29.8
NCC20C	Roadside	100	92.3	36	32.5	35.3	28.8	30.8
NCC21D, NCC23E	N/A	25	100.0	33.8	54.6	48.5	46.7	34.7
NCC24C	Façade	33	100.0	32.6	31.1	35.8	26.3	27.5

NCC25C	Façade	33	100.0	40.6	41.6	43.8	26.9	29.2
NCC26B	Façade	33	92.3	51.1	50.9	48.6	35	35.4
NCC27B	Roadside	92	57.7	42.3	41.6	40.5	28.5	30.4
NCC28B	Roadside	100	90.4	37.5	33.7	34.2	28.4	29.6
NCC29C	Façade	92	100.0	41	41	42.7	31	32.4
NCC30B	Roadside	92	100.0		28.9	30.5	22.7	23.7
NCC31	Façade	100	100.0	36.8	36.7	35.6	29.9	26.6
NCC32E	Façade	100	100.0	32.8	28.2	28.6	21.2	22.6
NCC33B	Façade	100	100.0	32.6	32.4	32.8	23.5	27.5
NCC34A	Façade	100	90.4	32.2	26.7	27.1	19.9	20.5
NCC35A	Roadside	100	100.0	27.3	25.6	25.9	22.7	23.2
NCC36A	Roadside	100	100.0	25.3	23.6	23	19.6	19.7
NCC37, NCC38, NCC39	Background	100	82.7	20.1	18.6	18.5	14.4	13.5
NCC40B	Roadside	100	100.0	23.3	29.6	33.6	23.1	26.3
NCC41B	Façade	100	100.0	25.5	25.4	22.4	17.8	22.8
NCC42	Roadside	100	100.0	25.7	25.4	24	18.1	24.7
NCC43A	Roadside	100	82.7	30.7	29.7	30.3	22.9	22.9
NCC44B	Roadside	92	100.0	30	27.2	29.5	22.2	23.0
NCC45B	Roadside	92	82.7	30.3	29.2	31.2	24	24.7
NCC46B	Roadside	100	84.6	50.5	44.4	48.1	35	37.3
NCC47A	Roadside	92	92.3	36.4	34.3	36.7	25.1	25.9
NCC48D	Roadside	100	100.0	50.1	44.9	42.5	34.9	35.0
NCC49C	Roadside	83	100.0	31.6	29.7	28.3	23.9	24.7
NCC50	Roadside	83	100.0	39.3	38.1	41.4	30.2	32.3
NCC51	Façade	100	100.0	40.7	37.5	41.1	32.8	31.9
NCC52	Roadside	100	100.0	22.5	21	21	18.5	18.6
NCC53	Roadside	100	100.0	22	19.9	22	15.6	16.0

NCC54	Façade	83	84.6					8.9
NCC55	Façade	92	76.9					9.7
NCC57	Roadside	100	100.0	29.1	29.6	28.3	22.1	25.8
NCC58	Roadside	100	100.0	37.2	37.6	38.4	29.4	30.4
NCC59	Roadside	100	100.0	28.7	28.2	28.4	20.4	19.8
NCC60	Roadside	100	100.0	32.3	34	31	22.2	23.6
NCC62	Façade	100	100.0	33.8	32.3	35.4	25.5	28.0
NCC64	Roadside	92	100.0	43.2	39.7	41	28.8	31.8
NCC65	Roadside	100	100.0	49.2	44	45	31.9	33.6
NCC66	Roadside	100	100.0	35.6	34.8	34.8	25.7	28.2
NCC67	Façade	100	82.7	35.5	30.3	34.6	26	25.9
NCC68	Roadside	100	90.4	39.5	31.5	32.1	20.4	23.5
NCC69	Roadside	83	100.0	28.5	25.2	27	21.7	22.1
NCC70	Façade	92	92.3	27.7	23.6	35.4	25.8	29.9
NCC71A	Façade	100	100.0	37.3	39.8	37.8	28.1	34.9
NCC72A	Façade	100	100.0	32.9	33.5	33.6	27.5	28.3
NCC74	Roadside	100	92.3	25.7	23.5	24.9	17.5	19.3
NCC75	Façade	100	100.0	17.5	15.4	19.2	12.8	12.9
NCC78	Façade	100	100.0	28.4	30.6	29.2	19.6	20.3
NCC79	Roadside	100	100.0	20.1	18.8	21.1	31.7	31.6
NCC80	Façade	100	100.0	26.3	25	41.8	29.4	33.1
NCC81	Roadside	100	92.3	41.8	34.5	39.5	27.8	28.0
NCC82	Façade	83	92.3	26.2	25.9	18.5	18.6	21.0
NCC83	Roadside	83	90.4	17	14	14.9	11	12.2
NCC84	Roadside	83	100.0	32	28.9	29	19.9	18.9
NCC85	Façade	100	100.0			29.2	17.7	19.1
1S1		100	26.9					20.6
1S2		100	34.6					18.9
1S3		100	34.6					20.6
1S4		100	34.6					17.1

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%).

(3) Empty cells represent years when data was not being collected as tubes had not been deployed.

Figure 2.3 – Trends in Annual Mean NO_2 (µg/m^3) (Caerleon AQMA)

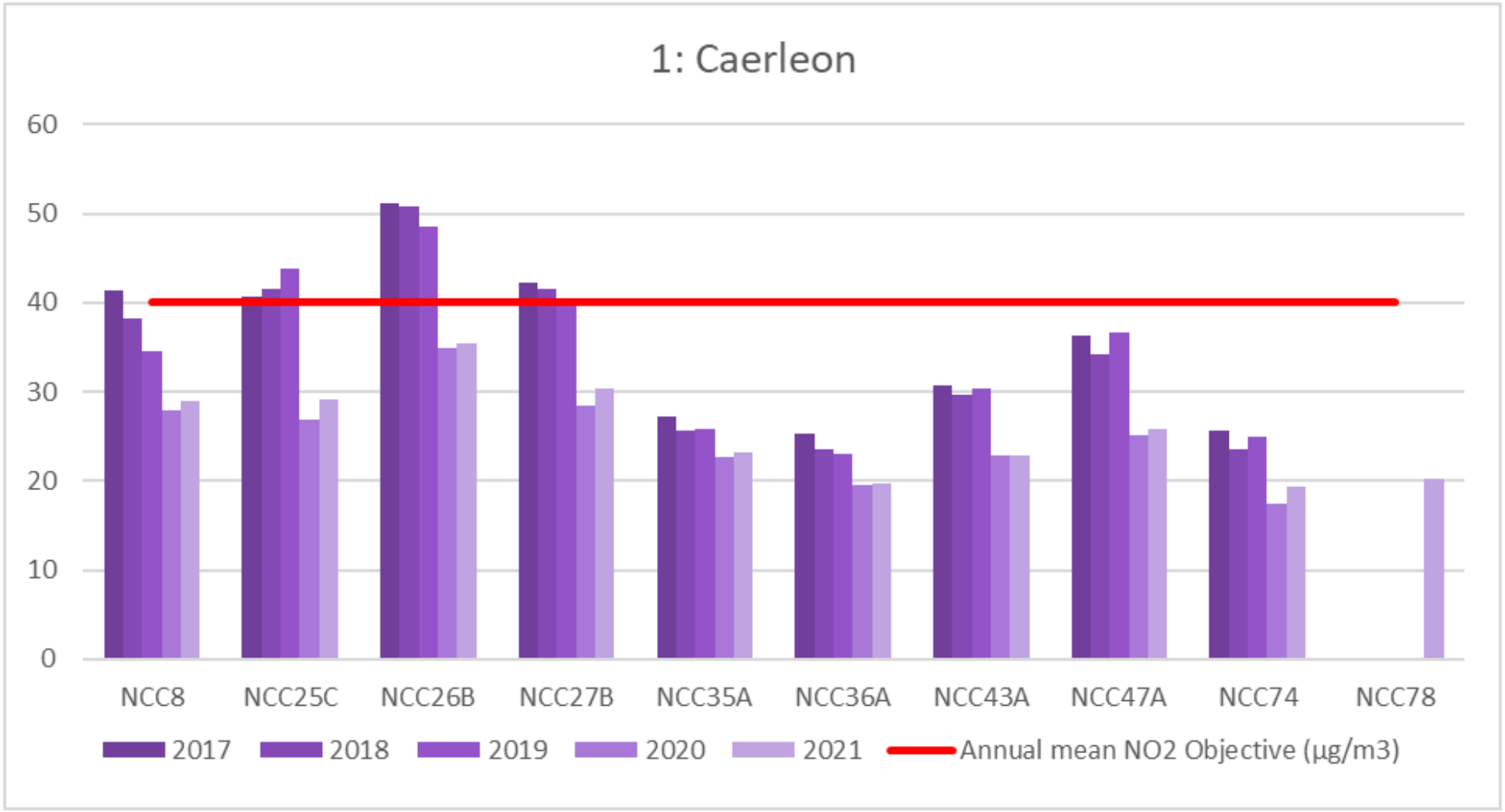


Figure 2.4 – Trends in Annual Mean NO_2 ($\mu g/m^3$) (Caerphilly AQMA)

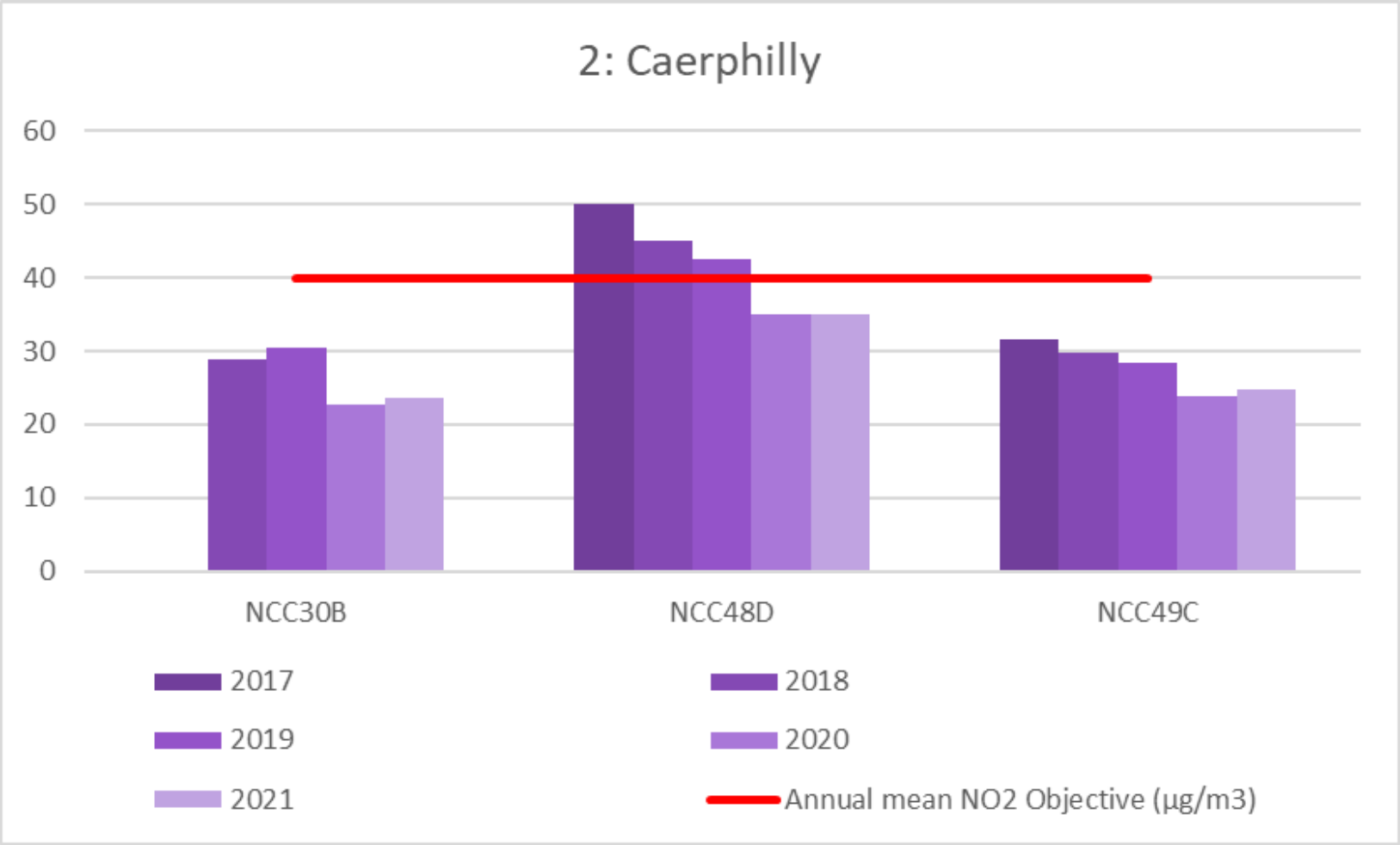


Figure 2.5 – Trends in Annual Mean NO_2 (µg/m^3) (Cefn AQMA)

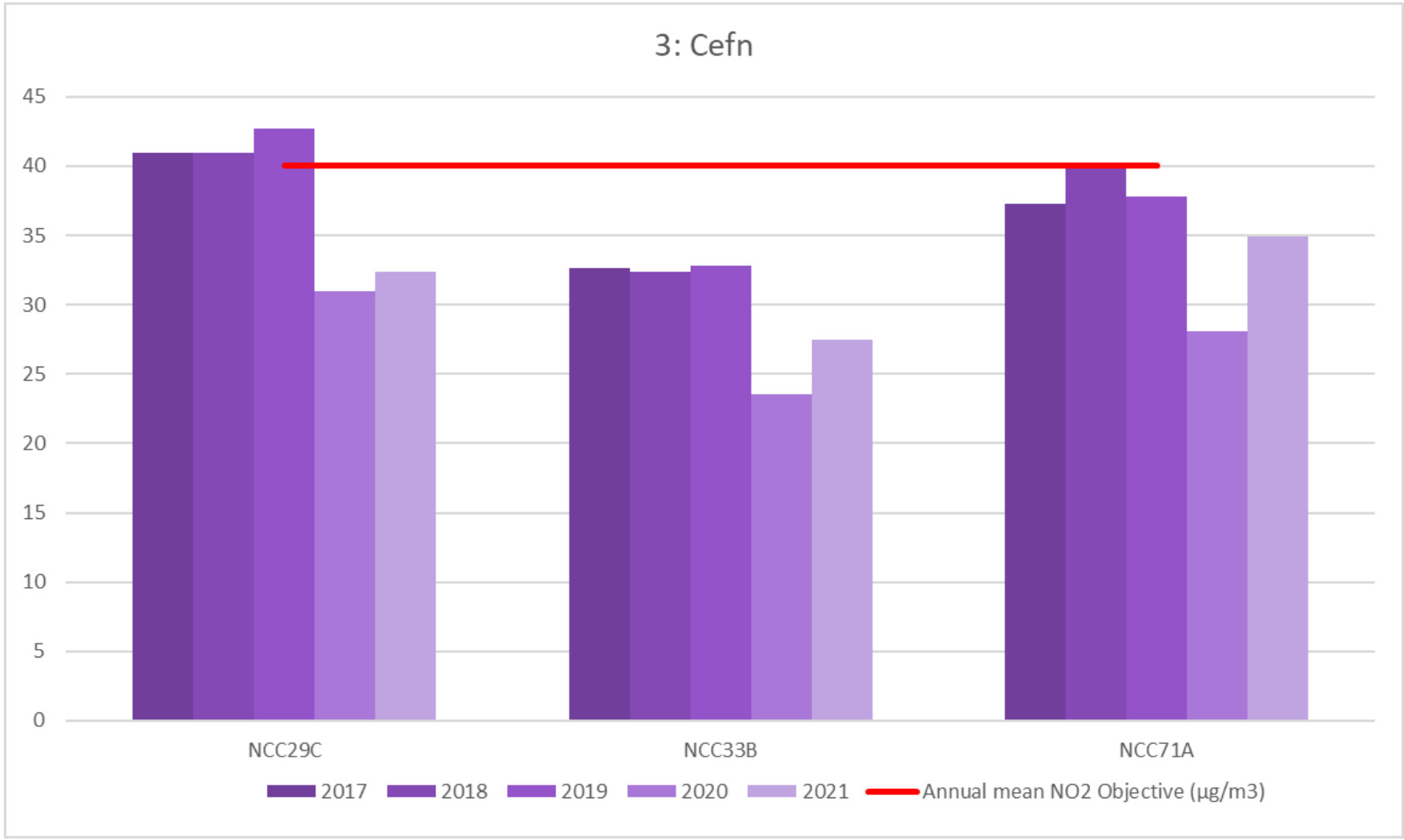


Figure 2.6 – Trends in Annual Mean NO_2 (µg/m^3) (Chepstow AQMA)

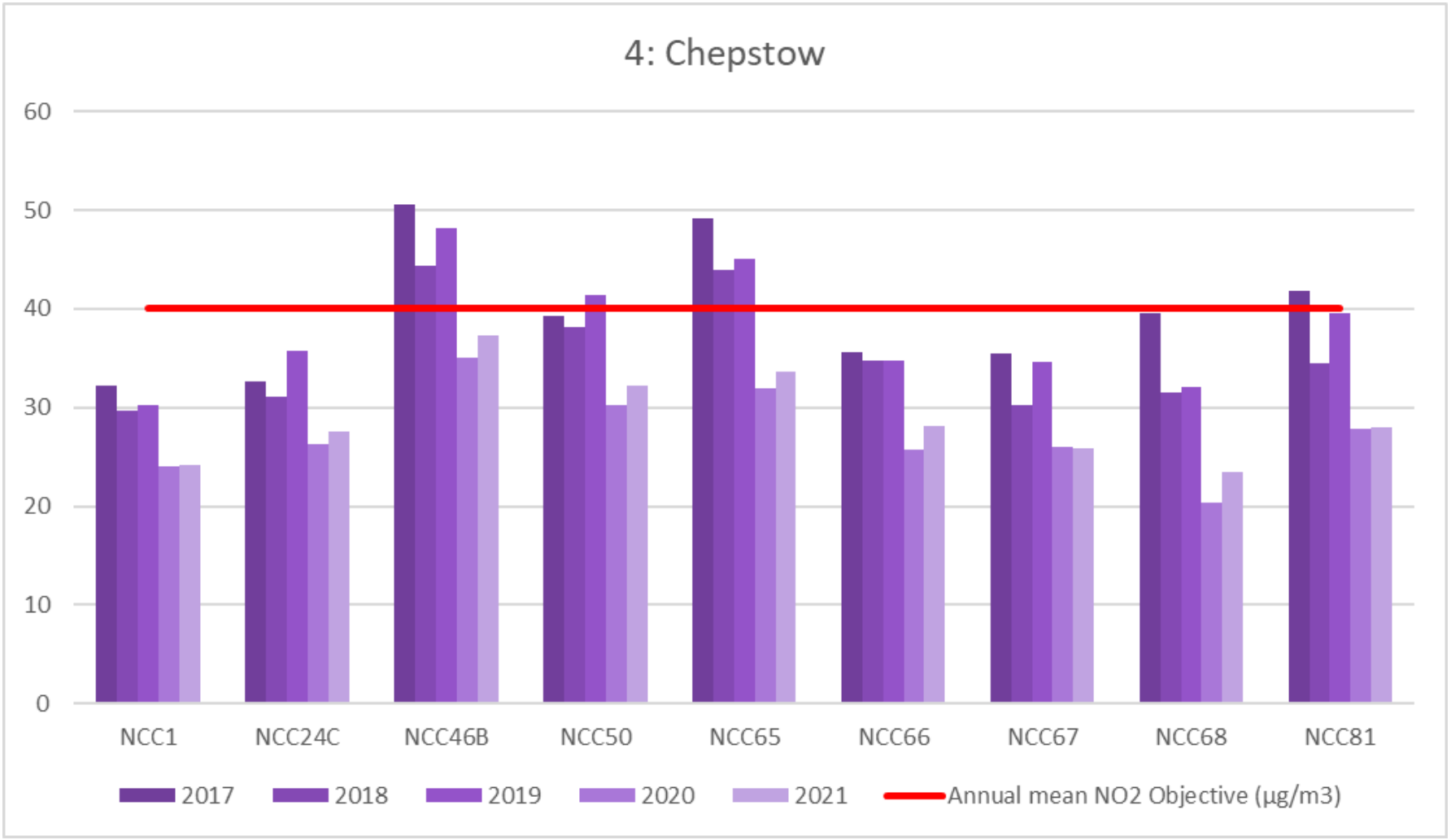


Figure 2.7 – Trends in Annual Mean NO_2 (µg/m^3) (George Street AQMA)

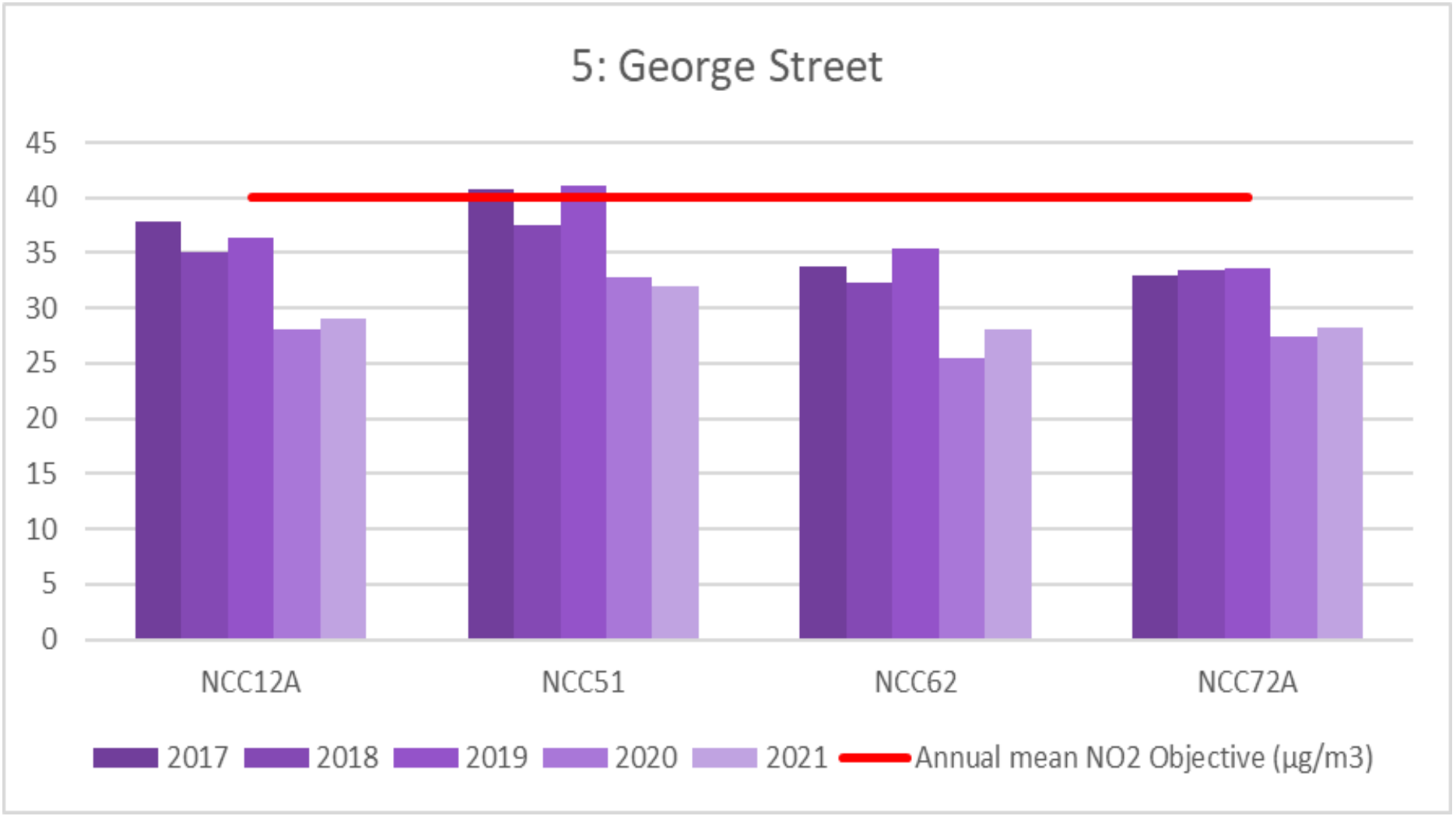


Figure 2.8 – Trends in Annual Mean NO_2 ($\mu g/m^3$) (Malpas AQMA)

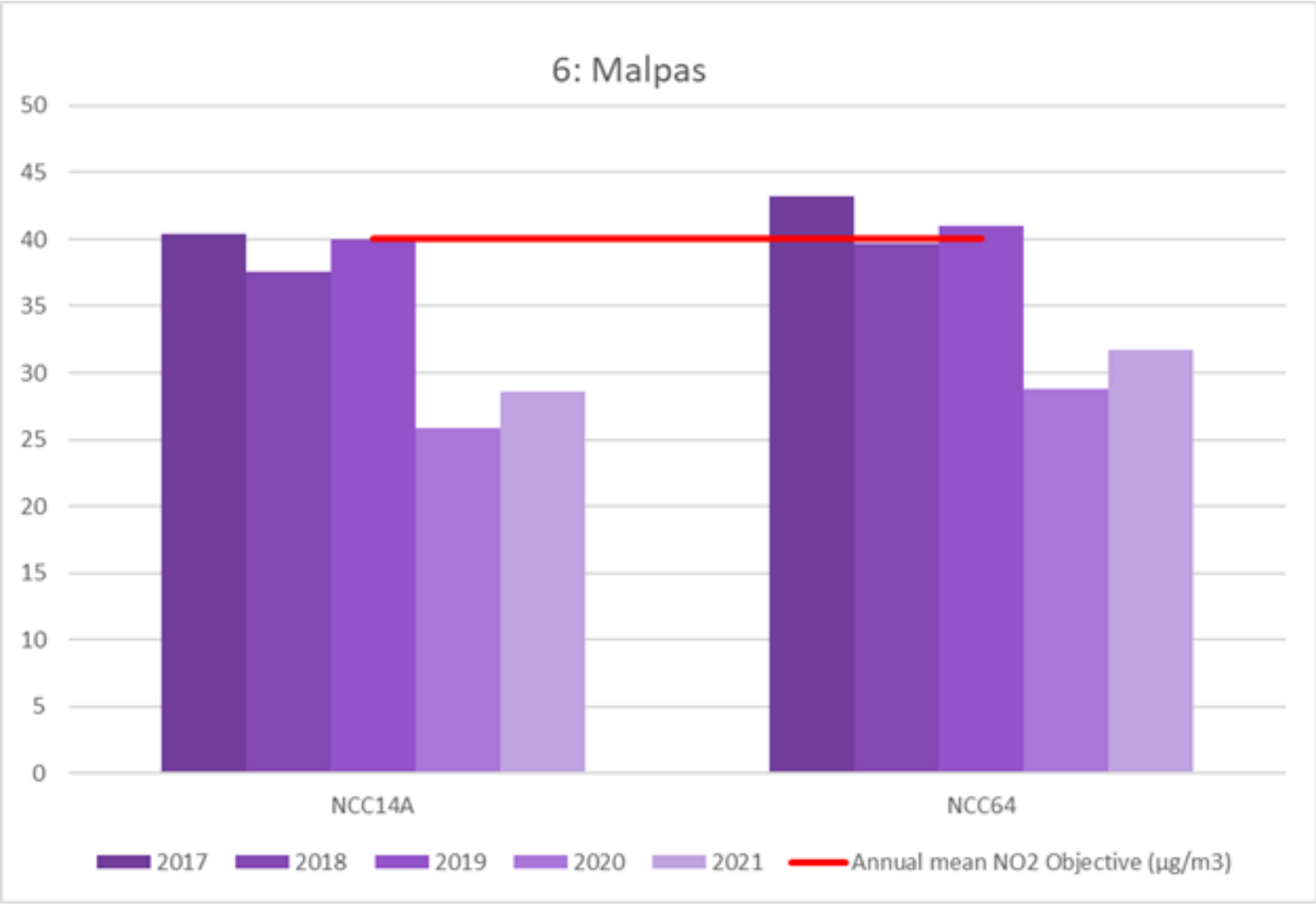


Figure 2.9 – Trends in Annual Mean NO_2 (µg/m^3) (Glasllwch AQMA)

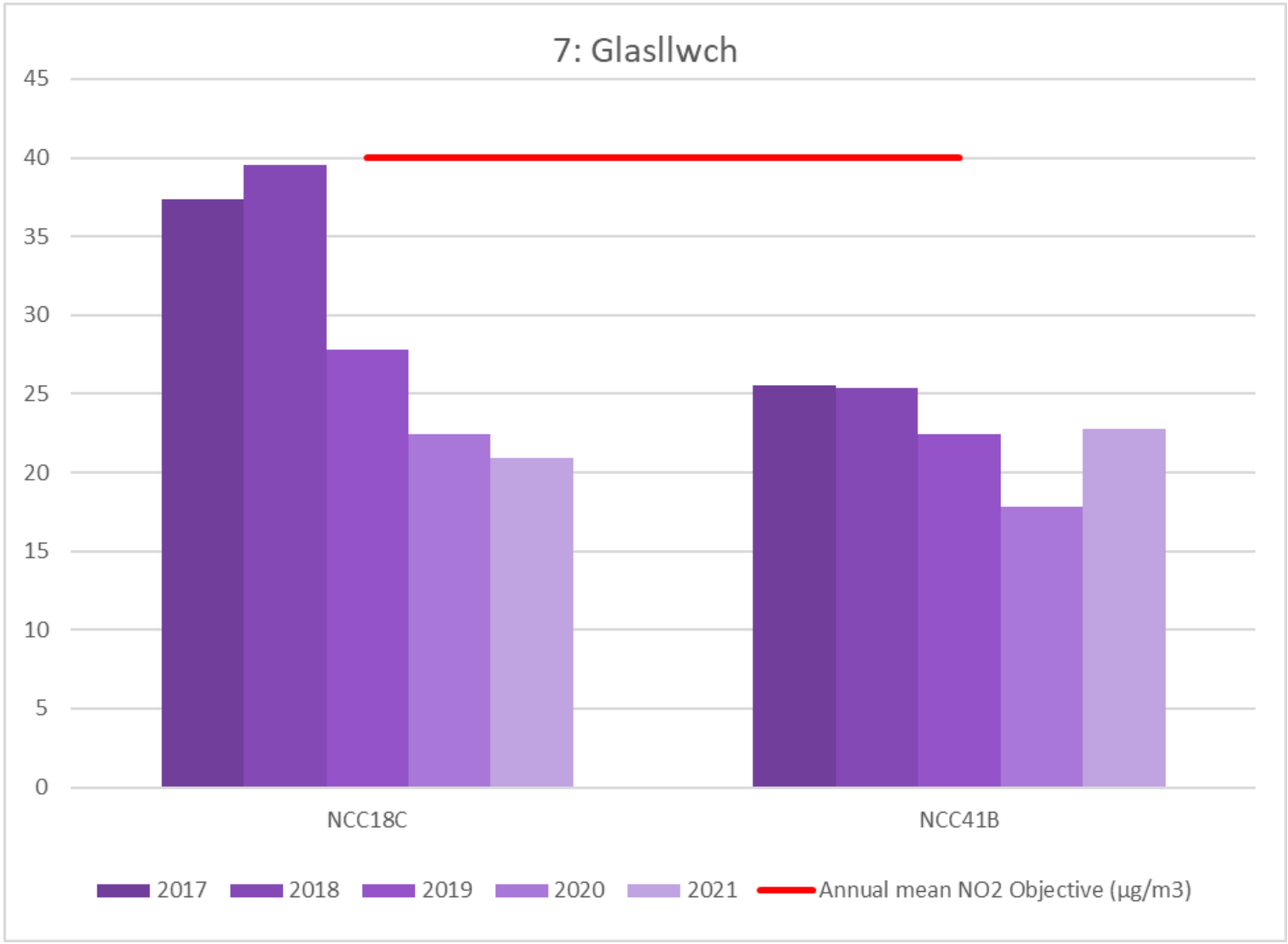


Figure 2.10 – Trends in Annual Mean NO_2 (µg/m^3) (High Cross AQMA)

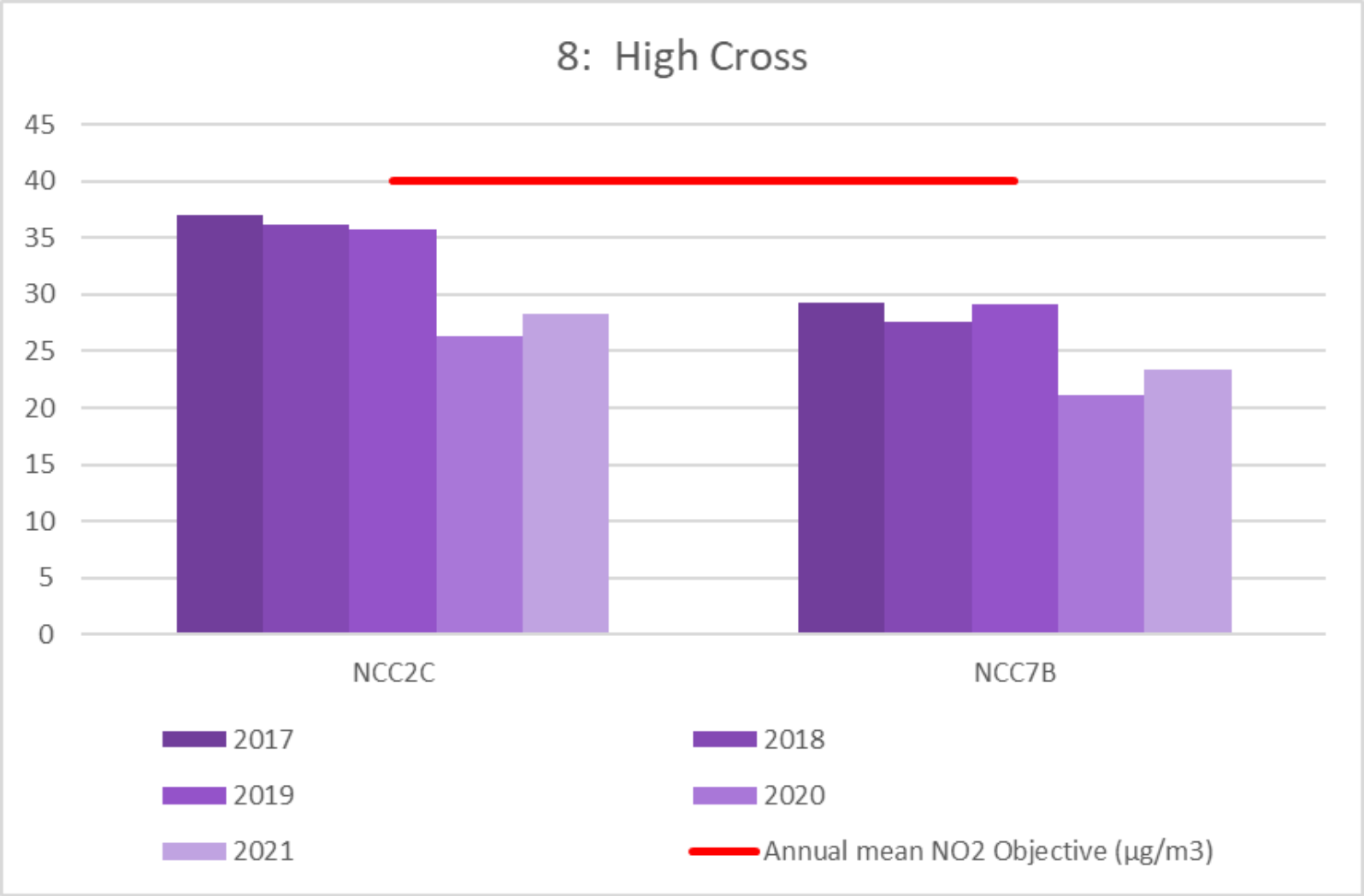


Figure 2.11 – Trends in Annual Mean NO_2 (µg/m^3) (Royal Oak Hill AQMA)

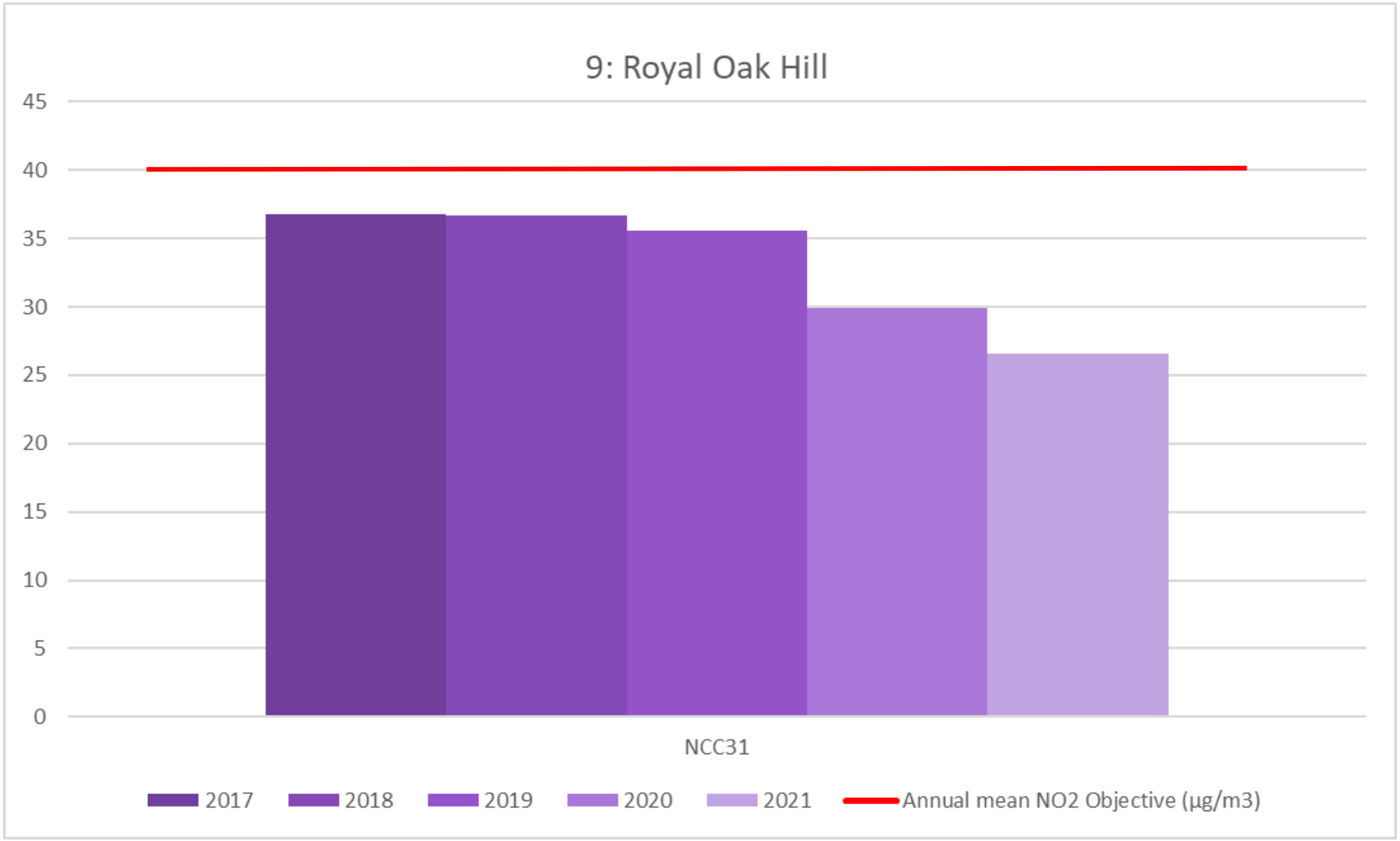


Figure 2.12 – Trends in Annual Mean NO_2 (µg/m^3) (Shaftsbury AQMA)

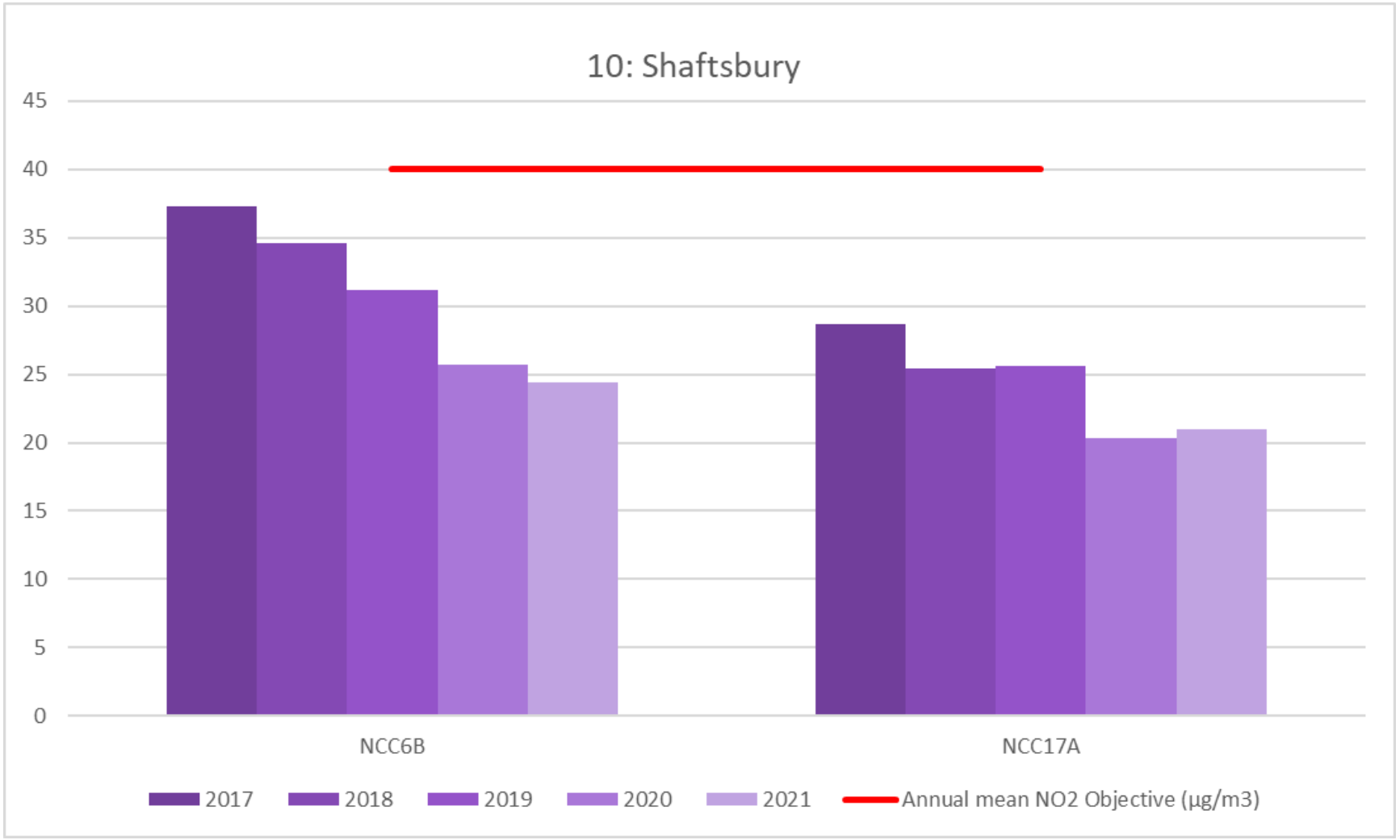


Figure 2.13 – Trends in Annual Mean NO_2 (µg/m^3) (St Julian's AQMA)

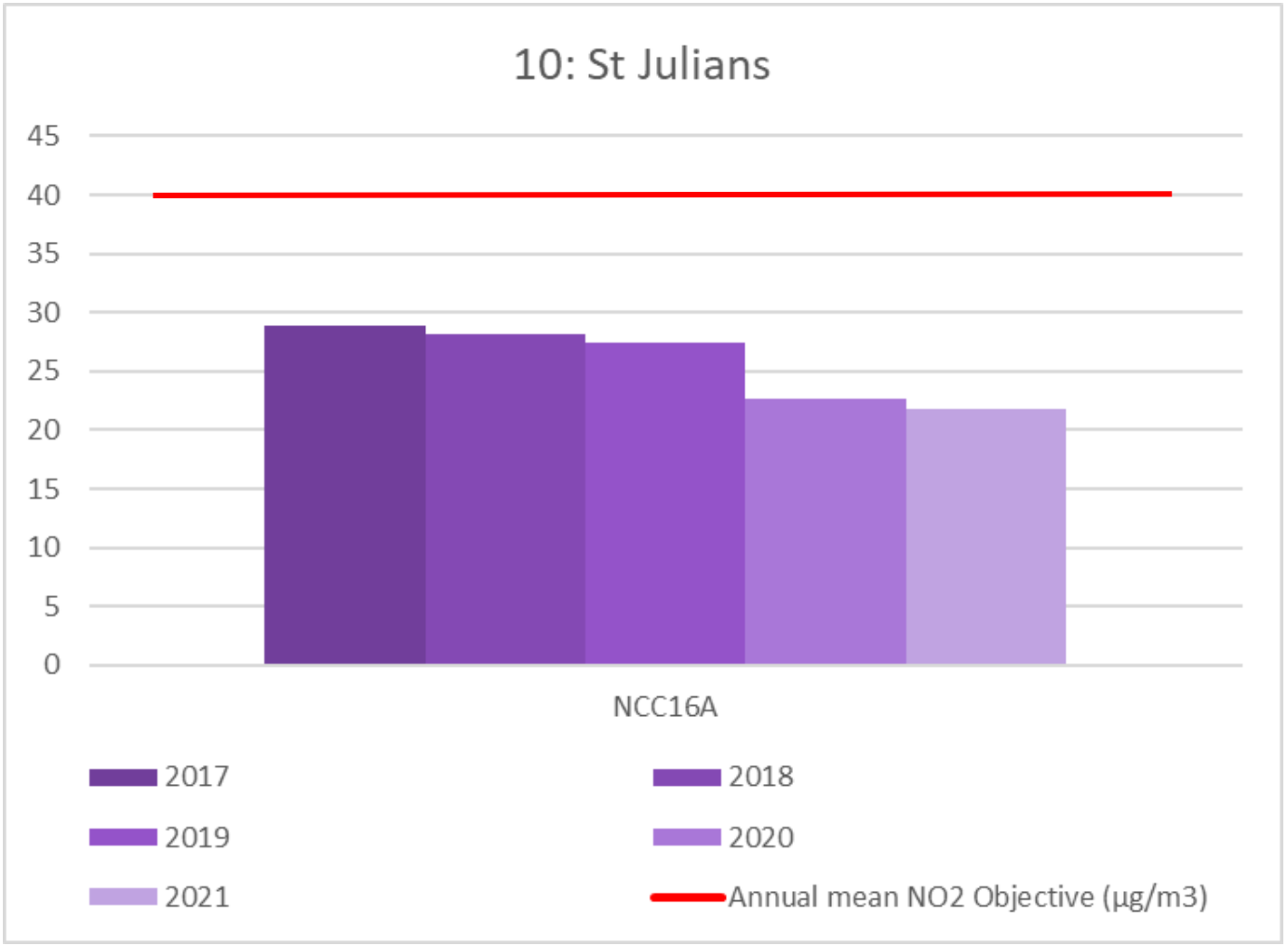


Table 2.4 – 1-Hour Mean NO_2 Monitoring Results, Number of 1-Hour Means > 200µg/m^3

Site ID	Site Type	Monitoring Type	Valid Data Capture for Monitoring Period (%) (1)	Valid Data Capture 2021 (%) (2)	2017	2018	2019	2020	2021
AN1	Urban Background	Automatic	99.4	99.4	0 (90)	0 (75)	0	0	0
AN2	Roadside	Automatic	96.9	97.0	0	1	0	0	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 ($\mu g/m^3$)

Site ID	Site Type	Valid Data Capture for Monitoring Period (%) (1)	Valid Data Capture 2021 (%) (2)	2017	2018	2019	2020	2021
AN1	Urban Background	99.8	99.8	15	14	15	13	12

Notes:

Exceedances of the PM_{10} annual mean objective of 40$\mu g/m^3$ 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%).

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

Site ID	Site Type	Valid Data Capture for Monitoring Period (%) (1)	Valid Data Capture 2021 (%) (2)	2017	2018	2019	2020	2021
AN1	Urban Background	99.8	99.8	2	0	5	0	0

Notes:

Exceedances of the PM_{10} 24-hour mean objective (50$\mu g/m^3$ 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 ($\mu g/m^3$)

Site ID	Site Type	Valid Data Capture for Monitoring Period (%) (1)	Valid Data Capture 2021 (%) (2)	2017	2018	2019	2020	2021
AN1	Urban Background	99.8	99.8	12	8	10	8	7

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%).

Comparison of 2021 Monitoring Results with Previous Years and the Air Quality Objectives

Throughout 2021 nitrogen dioxide monitoring was undertaken using both automatic and non-automatic monitoring methods. PM_{10} and $PM_{2.5}$ monitoring was also undertaken by automatic methods.

2.1.3 Nitrogen Dioxide

Nitrogen dioxide concentrations were recorded in Newport through a network of two automatic monitors and 81 diffusion tube locations.

Data capture across all sites was generally high throughout 2021. Both automatic monitors (AN1/AN2) achieved near full data capture (>96%). There were minimal instances of data loss at diffusion tube sites, with only one site (NCC27B) requiring an annualisation factor to be applied, due to failure to attain over 75% data capture. A further four sites also required annualization (1S1, 1S2, 1S3, 1S4) due to only being installed in September 2021.

Overall, an increase in nitrogen dioxide concentrations was recorded at Newport's diffusion tube monitors between 2020 and 2021, with an increase of 2% (5% at AQMA sites). However, due to the atypical nature of the year, comparisons to 2020 data do not provide robust evidence of long-term trends. Beyond this, concentrations at all diffusion tube sites were 3% lower than the most recent 'typical' year (2019).

All measured concentrations were below the annual mean AQS NO_2 objective of 40µg/m^3; there were no exceedances of the objective in 2021. Additionally, only one of the measured values was within 10% of the AQS threshold (monitor NCC46B).

Neither automatic monitor (AN1/AN2) recorded a single exceedance of the 200 µg/m^3 hourly mean air quality objective value in 2021 (18 are permitted per year). The last measured exceedance of the objective value occurred during 2018 at the M4 Old Barn monitor (AN2). Additionally, no diffusion tube site has recorded an annual mean concentration greater than 60 µg/m^3. It can be assumed values below this threshold are unlikely to exceed the 1-hour objective, in accordance with Defra's technical guidance (Defra, 2021).

2.1.4 Particulate Matter (PM_{10})

PM_{10} concentrations are measured at the AN1 automatic monitor. The monitor was active throughout 2021 and recorded 99.8% data capture.

Annual mean concentrations of PM_{10} have remained stable since 2016, ranging between 12 and 16µg/m^3. There has been a minor reduction in PM_{10} concentrations between 2020 and 2021 (7.7%) constituting a second year of decline since 2019.

There were no recorded exceedances of the 24-hour mean objective value (50 µg/m^3) in 2021 and 2020, with the last instance of a threshold breach occurring in 2019. There is no clear trend in the number of exceedances of the objective value between 2016 and 2021; they have been significantly below the 35 permitted instances per year.

2.1.5 Particulate Matter ($PM_{2.5}$)

$PM_{2.5}$ data capture was consistent with PM_{10} at the AN1 monitor in 2021. Annual mean concentrations have ranged from 8 to 12µg/m^3 between 2016 and 2020; below 50% of the annual mean objective (25 µg/m^3). 2021 data represents a second consecutive year of decline in $PM_{2.5}$ concentrations, with a fall of 12.5% from 2020.

2.1.6 Summary of Compliance with AQS Objectives as of 2021

In 2021 neither automatic monitor (AN1/AN2) measured an exceedance on the annual or 1-hour mean NO_2 objectives, and no diffusion tube monitors measured an exceedance of the annual mean NO_2 objective.

For PM_{10} automatic monitor AN1 measured no exceedances of the annual or 24-hour mean objectives in 2021. The annual mean concentration of $PM_{2.5}$ was also below the annual mean objective in 2021.

3 New Local Developments

The following section outlines the new Local developments in Newport for 2021 and their relationship to the air quality objectives.

Road Traffic Sources (and Other Transport)

There have been no major changes to road traffic or other transport sources likely to affect pollutant concentrations in 2021.

Industrial / Fugitive or Uncontrolled Sources / Commercial Sources

There have been no major changes to Industrial/ Fugitive or Uncontrolled/ Commercial sources or other transport sources likely to affect pollutant concentrations in 2021.

Other Sources

Bonfire night

Bonfire Night (5 November) 2021 traditionally involves fireworks and bonfires on 5 November (or days either side). Fireworks are designed to explode in the atmosphere in a spectacle of noise and light. To achieve the bright coloured light a number of chemical compounds are used (Antimony, Barium, Calcium, Carbon, Chorine, Copper, Iron, Lithium, Magnesium, Phosphorus, Potassium, Sodium, Sulphur, Strontium, Titanium, Zinc etc.). PM_{10} concentrations recorded at the AN1 automatic monitor on the bonfire night weekend (5^{th} – 7^{th} November) were 54.2% greater than the annual mean for 2021. Fireworks are worthy of further inquiry during 2022/23 in terms of alternative display approaches e.g., more sustainable fireworks, light shows etc.

Wood Burners

Wood burners are considered to be a significant source of particulate pollution. Unfortunately, there are few data on the number / usage of wood burners in the Newport area. A review by Welsh Government on this subject is currently underway. For details on Newport's smoke control areas click here.

4 Policies and Strategies Affecting Airborne Pollution

Supplementary Planning Guidance

In 2018 Newport City Council adopted a supplementary planning guidance document on Development Management Air Quality (Newport City Council, 2018). The document can be found here. It contains a brief overview of when an air quality assessment is required to support a planning application, the process by which an air quality assessment is undertaken (i.e. what needs to be included) and possible mitigation measures.

Sustainable Travel Strategy

In conjunction with this, Newport has adopted a Sustainable Travel Strategy document (Newport City Council, 2019). This document is designed to outline various actions NCC will progress to reduce the level of pollution from road traffic. The full document can be found here.

5 Conclusion and Proposed Actions

Conclusions from New Monitoring Data

There was an overall 2% increase (5% at AQMA sites) of NO_2 concentrations at Newport's diffusion tube sites since 2020. Air quality data from 2021 is not considered representative reducing the effectiveness of this comparison. When compared with 2019 NO2 concentrations were 3% lower. Newport City Council will not be revoking any current AQMAs until a further year of data capture has been attained.

PM_{10} concentrations experienced a decline at Newport's AN2 monitor between 2020 and 2021. There were no exceedances of either the annual mean or the 24hr mean PM_{10} objective (35 permitted a year).

Proposed Actions

There are no actions proposed with regard to the amendment or revocation of any of Newport's AQMAs based on trends in concentrations for 2021. Future data will provide more certainty over long term trends after the 2022 monitoring period has concluded.

Fireworks are worthy of further inquiry during 2022/23 in terms of alternative display approaches e.g., more sustainable fireworks, light shows etc.

Emissions from installations of back up diesel generators in datacentres will be reviewed as part of planning applications and are regulated by Natural Resources Wales under permitting rules.

There are several ongoing actions as per Table 1.2, and the update of Newport's AQAP.

References

Defra (2021) *Review & Assessment: Technical Guidance LAQM.TG16 April 2021 Version*.

Newport City Council (2007) *Air Quality Action Plan for Newport*.

Newport City Council (2018) *Development Management Air Quality Supplementary Planning Guidance*.

Newport City Council (2019) *Sustainable Travel Strategy (Air, Noise & Sustainability Action Plan)*.

Newport City Council (2020) *2020 Air Quality Progress Report*.

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 D: AQMA Boundary Maps

Appendix E: Draft Sustainable Travel Action Plan

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

Table A.1 – Full Monthly Diffusion Tube Results for 2021 (µg/m^3)

Site ID	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Raw Data	Bias Adjusted (0.78) and Annualised (1)	Distance Corrected to Nearest Exposure (2)
NCC1	37.9	32.4	29.6	23.4	24.6	24.4	22.4	28.8	31.7	37.4	37.6	41.0	30.9	24.1	
NCC2C	44.2	39.4	31.2	33.5	33.2	30.1	32.6	22.5	38.9	44.3	43.2	42.7	36.3	28.3	
NCC3A	24.9	20.3	15.6	16.2	14.4	12.5	10.6	14.7	33.9		24.0	24.6	19.2	15.0	
NCC4B	38.5	33.0	32.9	30.7	28.8	26.4	30.1	28.0	34.5	41.4			32.4	25.3	
NCC5	42.9	34.6	34.9	29.4	31.5	26.9	29.0	25.9	38.1	45.1	44.3	47.7	35.9	28.0	
NCC6B	40.2	28.2	31.2	24.8		25.0	29.1	26.0	32.9	38.8	36.1	32.3	31.3	24.4	
NCC7B	38.0	33.0		25.1	23.7	21.2	21.3	26.3	32.4	36.8	33.7	38.1	30.0	23.4	
NCC8	42.9	35.2	34.8	37.3	37.5	35.1	35.2	39.6	38.4	35.6		35.9	37.0	28.9	
NCC9D	45.0	34.6	32.6	28.7	30.0	24.6	27.4	30.4	37.6	41.2	22.3	47.9	33.5	26.1	
NCC11A	42.7	34.9	30.4	29.7	29.1	26.2	25.9	28.9	33.1	41.3	42.0	42.6	33.9	26.4	
NCC12A	42.6	40.1	32.2	33.1	35.9	28.6	32.2	30.3	39.9	43.2	41.5	48.2	37.3	29.1	
NCC13A	50.2	40.0	33.6	32.8	35.2	28.7	28.5	30.4	37.7	43.8	44.5	43.5	37.4	29.2	

NCC14A	44.0	32.8	33.2	40.0	29.6	29.6	27.8	39.5	36.0	40.5	44.2	43.3	36.7	28.6	
NCC15	36.8	27.3	27.9	24.1	23.5	21.4	22.4	22.4	30.5	37.5	36.8	35.0	28.8	22.5	
NCC16A	36.8	37.4	23.8	27.9	22.8	16.8	16.8	30.8	17.7	32.6	36.2	35.3	27.9	21.8	
NCC17A	34.6	31.6	23.8	24.1	22.9	19.5	20.0	19.5	29.8	31.5	31.2	34.6	26.9	21.0	
NCC18C	33.1	27.4	23.2	20.9	21.2	18.4	23.0	18.9	29.6	40.3	33.6	32.6	26.9	20.9	
NCC19A	47.6	41.6		37.0	33.3	30.0	28.5	33.9	38.1	41.4	45.4	43.1	38.2	29.8	
NCC20C	53.4	40.2	36.7	31.9	36.9	29.8	31.8	31.1		47.7	46.6	48.8	39.5	30.8	
NCC21D	58.1	46.3	41.8	32.3	45.4	31.0	37.5	34.0	50.3	57.2	52.4	53.7	-	-	
NCC23E	49.2	46.6	38.8	34.0	44.2	33.7	37.4	33.6	51.5	54.6	50.1	54.4	44.5	34.7	
NCC24C	44.0	34.6	33.6	31.7	29.9	30.1	28.0	30.8	35.6	39.8	43.8	41.1	35.3	27.5	
NCC25C	41.4	39.1	37.0	40.2	33.0	33.8	31.9	21.7	40.6	42.0	47.4	41.1	37.4	29.2	
NCC26B	55.7	47.3	41.7	52.5	46.2	45.8	46.0	47.0	34.2	38.8		44.7	45.4	35.4	
NCC27B	41.4	39.4				31.8	29.4	33.3	36.4	41.0			36.1	30.3	
NCC28B	45.7	37.5	34.9	33.7	33.6	30.8		31.4	36.7	42.4	44.8	45.4	37.9	29.6	
NCC29C	50.5	33.5	29.0	36.7	41.3	36.3	33.5	40.7	45.0	52.6	45.4	54.2	41.6	32.4	
NCC30B	38.0	32.8	27.6	28.8	27.8	21.4	28.3	24.9	28.3	35.7	35.5	35.9	30.4	23.7	
NCC31	41.9	35.4	30.4	32.1	24.9	29.4	28.4	40.9	32.0	33.8	39.8	39.6	34.1	26.6	
NCC32E	39.4	26.0	26.8	24.4	19.8	21.5	22.8	19.7	31.3	38.4	39.4	38.5	29.0	22.6	
NCC33B	44.9	32.8	27.2	33.3	26.9	29.7	29.8	31.0	37.5	44.9	42.3	42.9	35.3	27.5	
NCC34A	33.6	23.3	23.0	19.2	28.5	21.9	22.7	20.4	29.0		33.7	33.7	26.3	20.5	

NCC35A	38.8	30.0	29.4	24.6	28.9	24.1	24.9	19.0	32.4	37.5	33.4	34.5	29.8	23.2	
NCC36A	33.7	25.4	24.9	17.1	24.8	17.0	21.9	18.7	27.4	26.6	32.1	33.4	25.3	19.7	
NCC37	26.1	21.1	16.3	15.2	14.1	12.0	12.0	11.2	28.1	21.1			-	-	
NCC38	24.7	21.0	16.4	15.1	14.0	13.7	8.6	14.2	18.4	20.8			-	-	
NCC39	26.0	21.3	15.1	15.5	12.6	12.7	13.0	19.6	17.8	20.7			17.3	13.5	
NCC40B	40.6	34.4	30.7	29.5	30.2	25.4	25.2	28.4	34.2	39.9	42.5	43.0	33.7	26.3	
NCC41B	36.9	32.4	25.6	31.3	22.3	23.3	23.4	37.0	25.5	29.2	31.1	32.7	29.2	22.8	
NCC42	41.4	36.2	32.2	26.0	26.7	22.6	26.7	25.8	34.0	35.3	39.2	33.8	31.7	24.7	
NCC43A		28.3	32.9	27.0	29.9	26.5	25.4	25.5	31.5	32.7	34.5		29.4	22.9	
NCC44B	37.9	32.6	24.2	26.7	25.2	22.1	21.2	25.0	28.6	34.5	37.5	38.9	29.5	23.0	
NCC45B	35.7	33.7	31.8	25.3	28.2	24.7		32.6	32.0	33.1		39.5	31.7	24.7	
NCC46B	54.9	45.8		39.4		34.8	41.5	39.1	54.9	58.6	51.9	56.9	47.8	37.3	
NCC47A	41.2	27.2	33.3	34.6	30.6	33.8	26.1	35.6	33.2	36.1		33.7	33.2	25.9	
NCC48D	51.7	44.6	44.5	43.2	45.5	37.7	40.3	32.3	50.7	48.7	48.5	50.8	44.9	35.0	
NCC49C	37.8	31.6	30.8	28.3	27.1	21.8	26.3	34.6	29.7	35.9	38.3	38.2	31.7	24.7	
NCC50	49.1	37.5	37.1	39.9	35.6	31.5	35.7	39.0	43.5	48.0	48.7	50.6	41.4	32.3	
NCC51	46.0	45.0	37.2	31.3	38.6	32.0	37.0	34.3	45.5	49.1	44.7	50.2	40.9	31.9	
NCC52	35.7	24.8	22.3	21.6	17.0	18.0	18.0	19.3	24.8	20.9	32.6	31.3	23.9	18.6	
NCC53	23.6	24.8	18.8	19.5	14.4	15.9	14.0	18.4	20.1	23.2	27.1	26.6	20.5	16.0	
NCC54			11.3	7.7	9.1	7.5	4.8	8.2	12.9	15.3	16.7	21.2	11.5	8.9	

NCC55			12.9	10.7	9.3	8.3	8.2	10.2	14.2	16.4		21.4	12.4	9.7	
NCC57	38.9	37.1	29.4	29.5	24.3	28.5	24.9	34.7	32.7	35.6	41.4	39.9	33.1	25.8	
NCC58	46.6	40.4	35.8	34.9	31.3	32.8	31.8	39.6	41.9	44.7	37.5	50.0	38.9	30.4	
NCC59	33.3	25.1	23.5	19.5	16.2	20.4	25.5	23.8	31.3	31.9	19.2	35.5	25.4	19.8	
NCC60	29.1	30.2	29.5	26.1	23.6	25.4	24.7	29.3	32.7	36.3	37.3	38.9	30.3	23.6	
NCC62	43.5	34.2	33.6	27.1	29.6	30.4	32.1	30.1	39.2	38.8	45.4	46.9	35.9	28.0	
NCC64	50.3	44.2	38.0	40.8	33.7	32.0	32.6	44.5	39.2	42.9	45.9	44.5	40.7	31.8	
NCC65	51.3	42.5	41.0	38.0	37.1	35.2	35.6	42.1	44.6	48.7	52.3	48.5	43.1	33.6	
NCC66	47.3	40.0	33.1	33.0	29.7	27.8	26.7	34.7	33.5	40.1	43.8	44.0	36.1	28.2	
NCC67	39.9	28.9	28.7		30.1	23.8	29.0		34.1	40.2	40.3	37.4	33.2	25.9	
NCC68	36.2	34.3	26.6	29.3	27.6	23.7	21.4	27.1	33.2		35.7	36.0	30.1	23.5	
NCC69	38.9	23.6	24.9	23.0	24.1	19.8	21.2	23.0	30.7	36.9	35.6	38.0	28.3	22.1	
NCC70	42.6	40.1		29.9	34.0	27.5	32.5	29.2	41.3	51.0	44.9	49.0	38.4	29.9	
NCC71A	47.2	46.3	35.7	35.2	35.3	34.4	31.4	30.5	45.3	53.8	51.9	89.6	44.7	34.9	
NCC72A	41.2	34.2	29.4	34.2	30.7	28.7	29.8	34.1	36.8	45.9	46.5	43.2	36.2	28.3	
NCC74	29.0	18.6		23.8	21.0	20.1	19.9	26.4	25.4	27.8	32.4	28.1	24.8	19.3	
NCC75	20.7	18.2	15.1	11.0	12.0	11.3	11.2	13.0	14.6	20.5	23.3	28.3	16.6	12.9	
NCC76	27.7	24.7	22.1	21.1	24.4	21.6	24.5	28.9	24.9	28.6	33.9	30.2	26.1	20.3	
NCC78	47.8	47.4	40.4	32.5	37.6	35.3	33.6	32.1	38.1	43.9	50.0	47.1	40.5	31.6	
NCC79	46.5	42.4	39.4	37.8	40.8	27.4	39.7	31.8	47.6	53.4	49.4	53.1	42.4	33.1	

NCC80	45.3	29.6		30.2	36.4	27.9	30.0	17.3	42.5	47.8	45.0	43.1	35.9	28.0	
NCC81	33.9	31.6		22.0	20.5	19.4	16.0	27.2	26.7	32.9	30.4	34.9	26.9	21.0	
NCC82	23.0	14.6	12.7		12.1	9.5	9.5	13.4	14.4	18.2	19.5	25.5	15.7	12.2	
NCC84	34.4	22.7	24.5	21.9	21.3	13.0	21.9	21.5	24.4	29.5	32.2	23.1	24.2	18.9	
NCC85	31.8	28.5	21.2	21.8	20.0	17.6	16.9	20.7	24.1	29.7	29.0	32.1	24.5	19.1	
1S1									23.6	27.4	missing	34.1	28.4	20.6	
1S2									20.2	26.8	30.5	32.4	27.5	18.9	
1S3									23.8	25.5	32.8	37.4	29.9	20.6	
1S4									20.6	23.8	26.2	28.5	24.8	17.1	

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.

(3) Empty cells either represent months when tubes had not been started at a given location or where tubes had been damaged, stolen or interfered with.

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 12 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

Diffusion tubes have been prepared and analysed by SOCOTEC using the 50% triethanolamine in acetone method. SOCOTEC currently holds the highest rank of a **Satisfactory** laboratory.

Due to staff resourcing, monitoring was not carried out in adherence with the 2021 Diffusion Tube Monitoring Calendar.

Diffusion Tube Annualisation

An annualisation factor was applied to diffusion tube sites NCC27B, 1S1, 1S2, 1S3 and 1S4 as their data capture fell below 75%. Further details are outlined in Table C.3.

Diffusion Tube Bias Adjustment Factors

Newport City Council have applied a national bias adjustment factor of 0.78 to all diffusion tube sites. A variety of national and local bias-adjustment factors have been applied to Newport's monitoring results over time, as summarised in Table C.1 below. Co-location sites (NCC37, NCC38 and NCC39) are present at the St. Julian's School monitor in Newport, however the results of this survey have a poor overall precision due to a significant variation in recorded concentrations; as such, in 2021 the local bias-adjustment factor has been disregarded and the national factor applied. The results of local bias-adjustment (not used) is presented in Table C.2. The national bias adjustment spreadsheet (version 06/22) included as a screen shot below.

Table C.1 – Summary of Bias-adjustment factors applied in Newport

Year	Factor	National or Local
2017	0.77	National
2018	0.76	National
2019	0.80	National
2020	0.81	Local
2021	0.78	National

Table C.2 – Triplicate Tube Precision and Accuracy Table (Local Bias Adjustment – not used)

Checking Precision and Accuracy of Triplicate Tubes

AEA Energy & Environment
From the AEA group

Diffusion Tubes Measurements										Automatic Method		Data Quality Check	
Period	Start Date dd/mm/yyyy	End Date dd/mm/yyyy	Tube 1 μgm^{-3}	Tube 2 μgm^{-3}	Tube 3 μgm^{-3}	Triplicate Mean	Standard Deviation	Coefficient of Variation (CV)	95% CI of mean	Period Mean	Data Capture (% DC)	Tubes Precision Check	Automatic Monitor Data
1	06/01/2021	03/02/2021	26.1	24.7	26.0	26	0.8	3	1.9	21.5	99.00	Good	Good
2	03/02/2021	03/03/2021	21.1	21.0	21.3	21	0.2	1	0.4	16.6	99.00	Good	Good
3	03/03/2021	31/03/2021	16.3	16.4	15.1	16	0.7	5	1.8	15.5	100.00	Good	Good
4	31/03/2021	05/05/2021	15.2	15.1	15.5	15	0.2	1	0.5	15.3	99.00	Good	Good
5	05/05/2021	02/06/2021	14.1	14.0	12.6	14	0.8	6	2.1	12	99.00	Good	Good
6	02/06/2021	30/06/2021	12.0	13.7	12.7	13	0.9	7	2.1	11	99.00	Good	Good
7	30/06/2021	04/08/2021	12.0	8.6	13.0	11	2.3	21	5.7	11	99.00	Poor Precision	Good
8	04/08/2021	01/09/2021	11.2	14.2	19.6	15	4.3	28	10.6	10	100.00	Poor Precision	Good
9	01/09/2021	29/09/2021	28.1	18.4	17.8	21	5.8	27	14.4	15	96.00	Poor Precision	Good
10	29/09/2021	03/11/2021	21.1	20.8	20.7	21	0.2	1	0.5	15	100.00	Good	Good
11	03/11/2021	01/12/2021								20.4	100.00		Good
12	01/12/2021	05/01/2022								19.1	58.00		or Data Capture
13													
										Overall survey -->		Poor precision	Good Overall DC

It is necessary to have results for at least two tubes in order to calculate the precision of the measurements

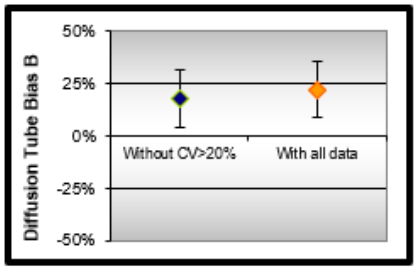
(Check average CV & DC from Accuracy calculations)

Site Name/ ID:

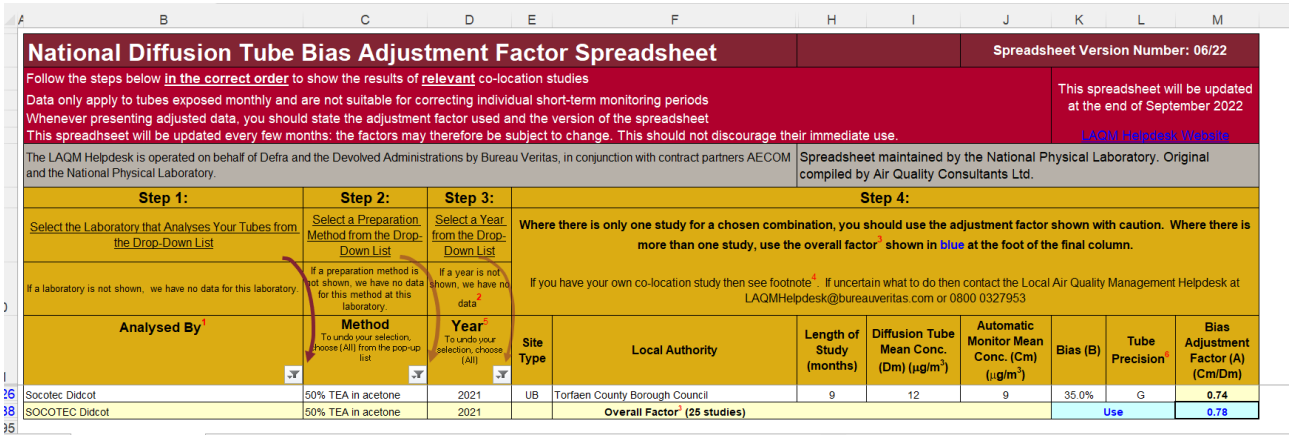
Precision 7 out of 10 periods have a CV smaller than 20%

Accuracy (with 95% confidence interval) without periods with CV larger than 20%	
Bias calculated using 7 periods of data	
Bias factor A	0.85 (0.76 - 0.96)
Bias B	18% (4% - 32%)
Diffusion Tubes Mean:	18 μgm^{-3}
Mean CV (Precision):	3
Automatic Mean:	15 μgm^{-3}
Data Capture for periods used:	99%
Adjusted Tubes Mean:	15 (14 - 17) μgm^{-3}

Accuracy (with 95% confidence interval) WITH ALL DATA	
Bias calculated using 10 periods of data	
Bias factor A	0.82 (0.74 - 0.93)
Bias B	22% (8% - 35%)
Diffusion Tubes Mean:	17 μgm^{-3}
Mean CV (Precision):	10
Automatic Mean:	14 μgm^{-3}
Data Capture for periods used:	99%
Adjusted Tubes Mean:	14 (13 - 16) μgm^{-3}



Jaume Targa, for AEA
Version 04 - February 2011



National Diffusion Tube Bias Adjustment Factor Spreadsheet — Spreadsheet Version Number: 06/22

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

This spreadsheet will be updated at the end of September 2022

LAQM Helpdesk Website

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

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

Step 1:	Step 2:	Step 3:	Step 4:
Select the Laboratory that Analyses Your Tubes from the Drop-Down List	Select a Preparation Method from the Drop-Down List	Select a Year from the Drop-Down List	Where there is only one study for a chosen combination, you should use the adjustment factor shown with caution. Where there is more than one study, use the overall factor[3] shown in blue at the foot of the final column.
If a laboratory is not shown, we have no data for this laboratory.	If a preparation method is not shown, we have no data for this method at this laboratory.	If a year is not shown, we have no data[2]	If you have your own co-location study then see footnote[4]. If uncertain what to do then contact the Local Air Quality Management Helpdesk at LAQMHelpdesk@bureauveritas.com or 0800 0327953

Analysed By[1]	Method (To undo your selection, choose (All) from the pop-up list)	Year[5] (To undo your selection, choose (All))	Site Type	Local Authority	Length of Study (months)	Diffusion Tube Mean Conc. (Dm) (µg/m³)	Automatic Monitor Mean Conc. (Cm) (µg/m³)	Bias (B)	Tube Precision[6]	Bias Adjustment Factor (A) (Cm/Dm)
Socotec Didcot	50% TEA in acetone	2021	UB	Torfaen County Borough Council	9	12	9	35.0%	G	0.74
SOCOTEC Didcot	50% TEA in acetone	2021		**Overall Factor[3] (25 studies)**				**Use**		0.78

QA/QC of Automatic Monitoring

Data from the automatic monitors presented within this APR have been ratified by Bureau Veritas and Ricardo Energy & Environment. Live and historic data are available from https://airquality.gov.wales/. The NCC Air Quality Officer undertakes Local Site Operator duties.

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

The type of PM_{10}/$PM_{2.5}$ monitors used within NCC do not require the application of a correction factor.

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

Diffusion Tube ID	Annualisation Factor Cardiff Centre	Annualisation Factor Cwmbran Crownbridge	Annualisation Factor Newport	Annualisation Factor Bristol St. Pauls 's	Average Annualisation Factor	Raw Data Annual Mean (µg/m^3)	Annualised Data Annual Mean (µg/m^3)
NCC27B	1.1040	1.0530	1.0680	1.0866	1.0779	36.1	38.9
1S1	0.9455	0.9725	0.9461	0.8601	0.9311	28.4	26.4
1S2	0.8700	0.9441	0.8893	0.8285	0.8830	27.5	24.3
1S3	0.8700	0.9441	0.8893	0.8285	0.8830	29.9	26.4
1S4	0.8700	0.9441	0.8893	0.8285	0.8830	24.8	21.9

Appendix D AQMA Boundary Maps

Figure D.1 – Glasllwch AQMA

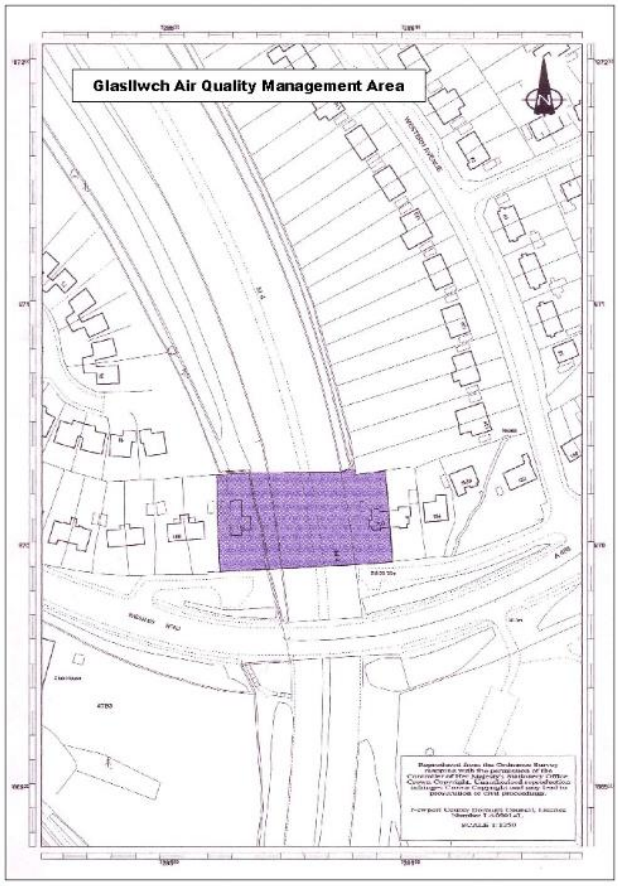


Figure D.2 – Shaftesbury AQMA

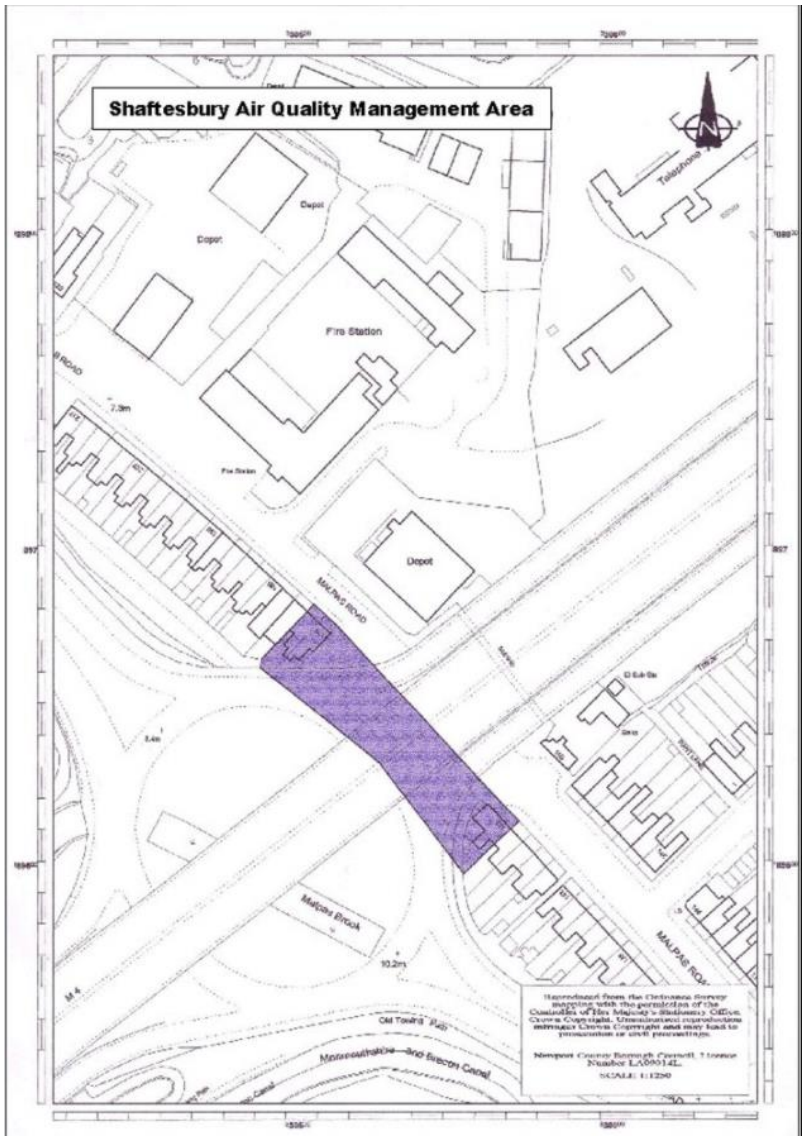


Figure D.3 – St Julian's AQMA

Figure D.4 – Malpas Road AQMA

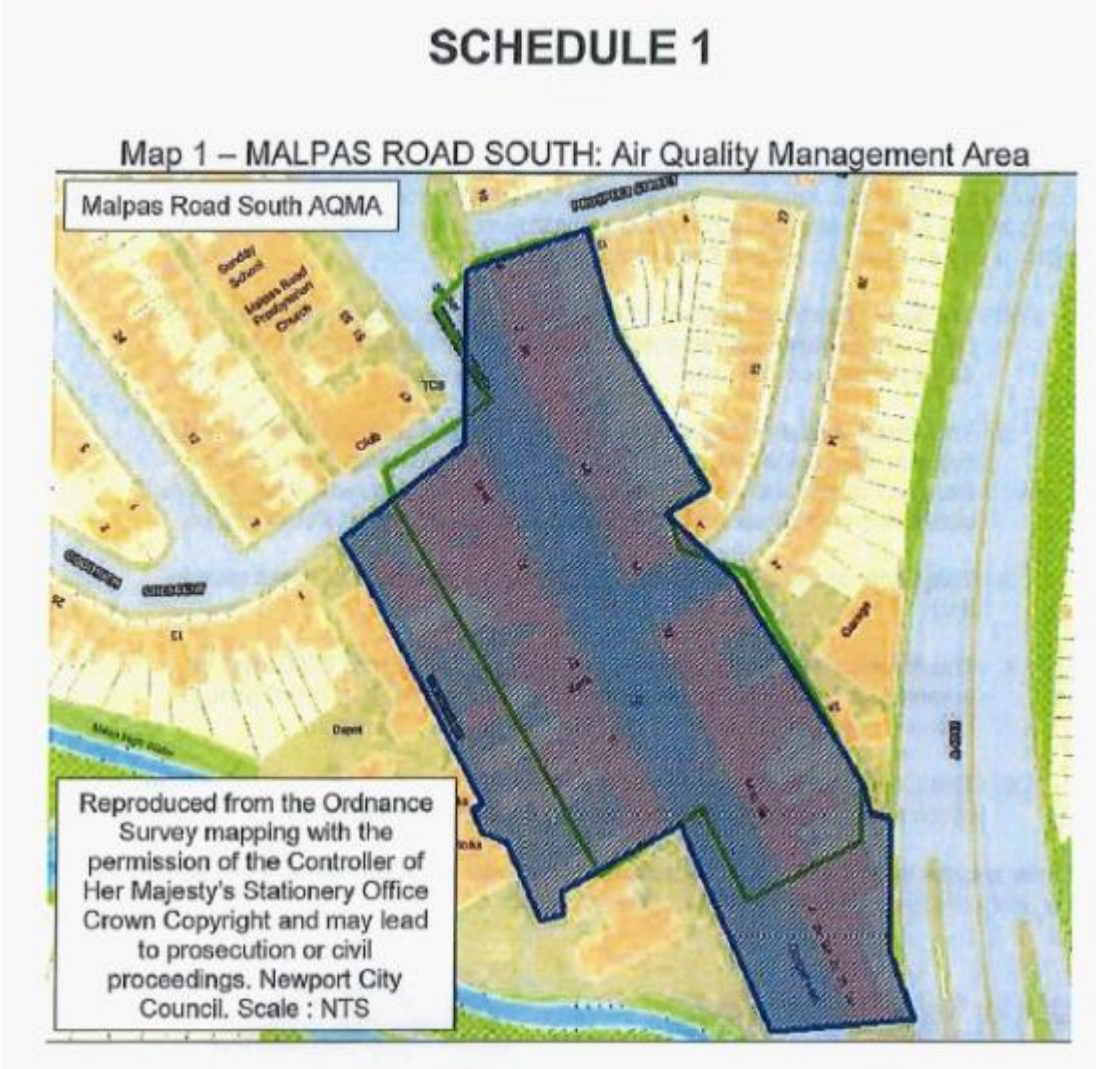


Figure D.5 – Chepstow Road/Caerleon Road (Chepstow) AQMA

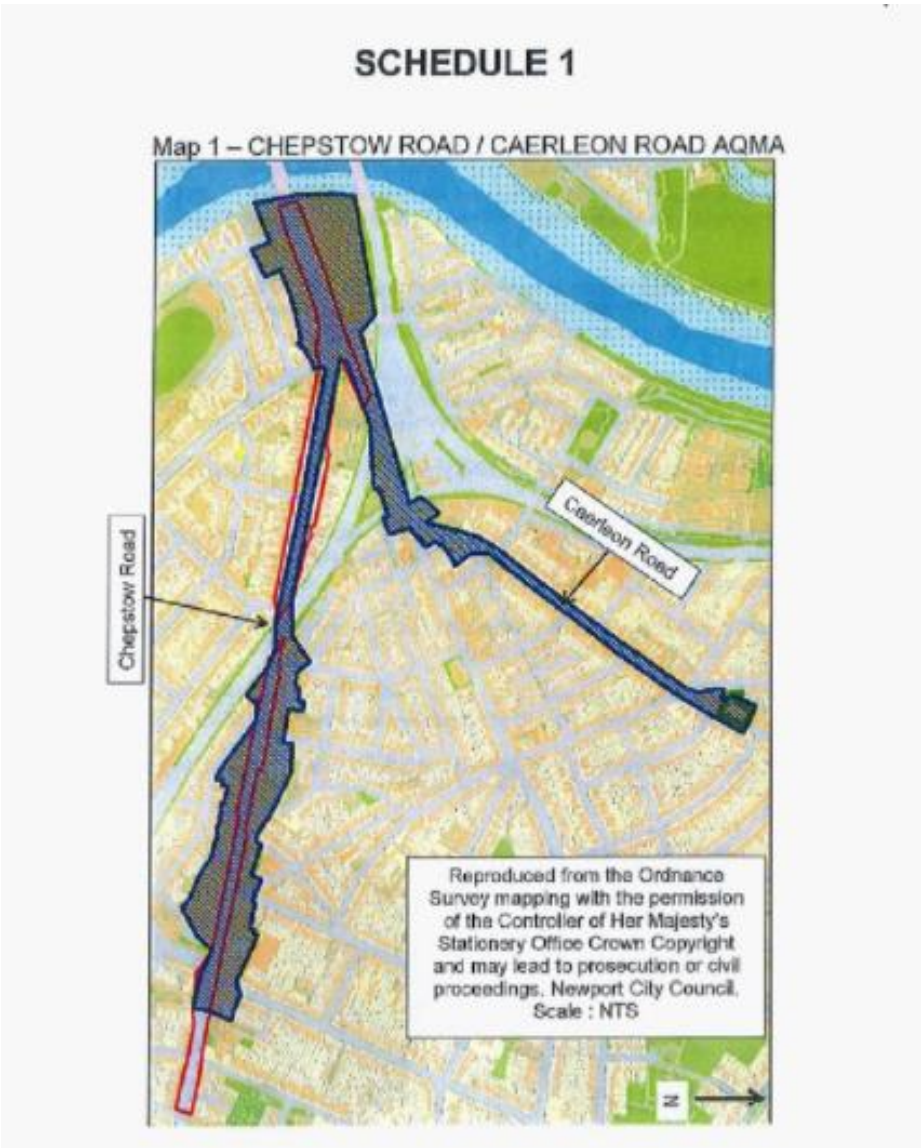


Figure D.6 – Royal Oak Hill AQMA

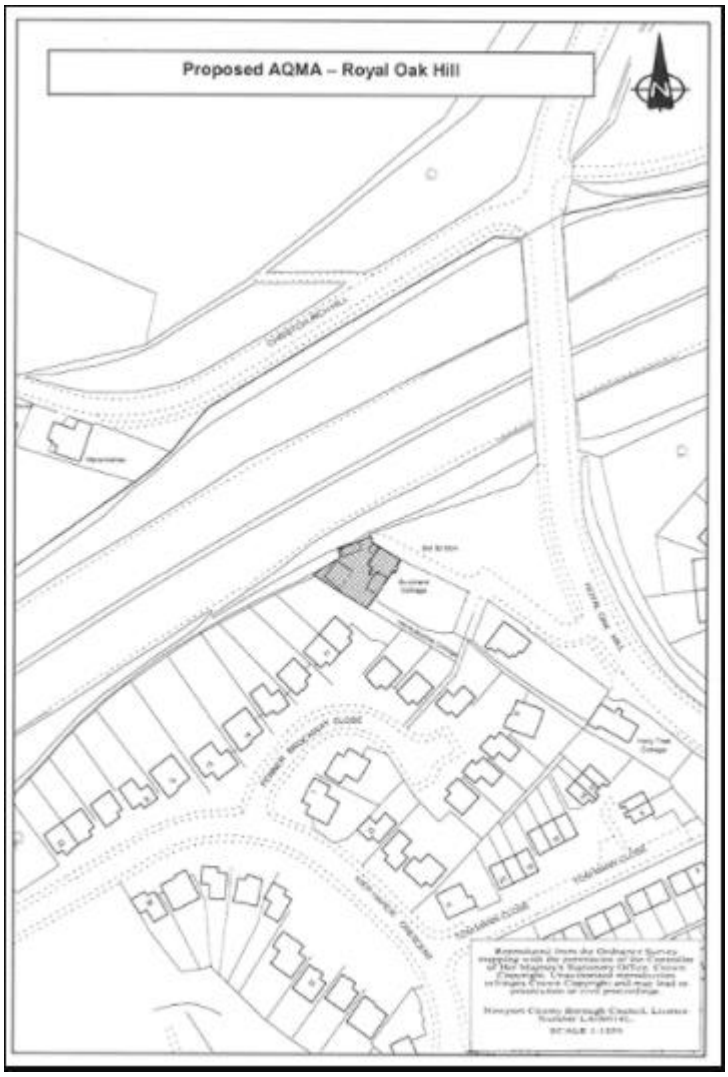


Figure D.7 – Caerleon High Street AQMA

Figure D.8 – George Street AQMA

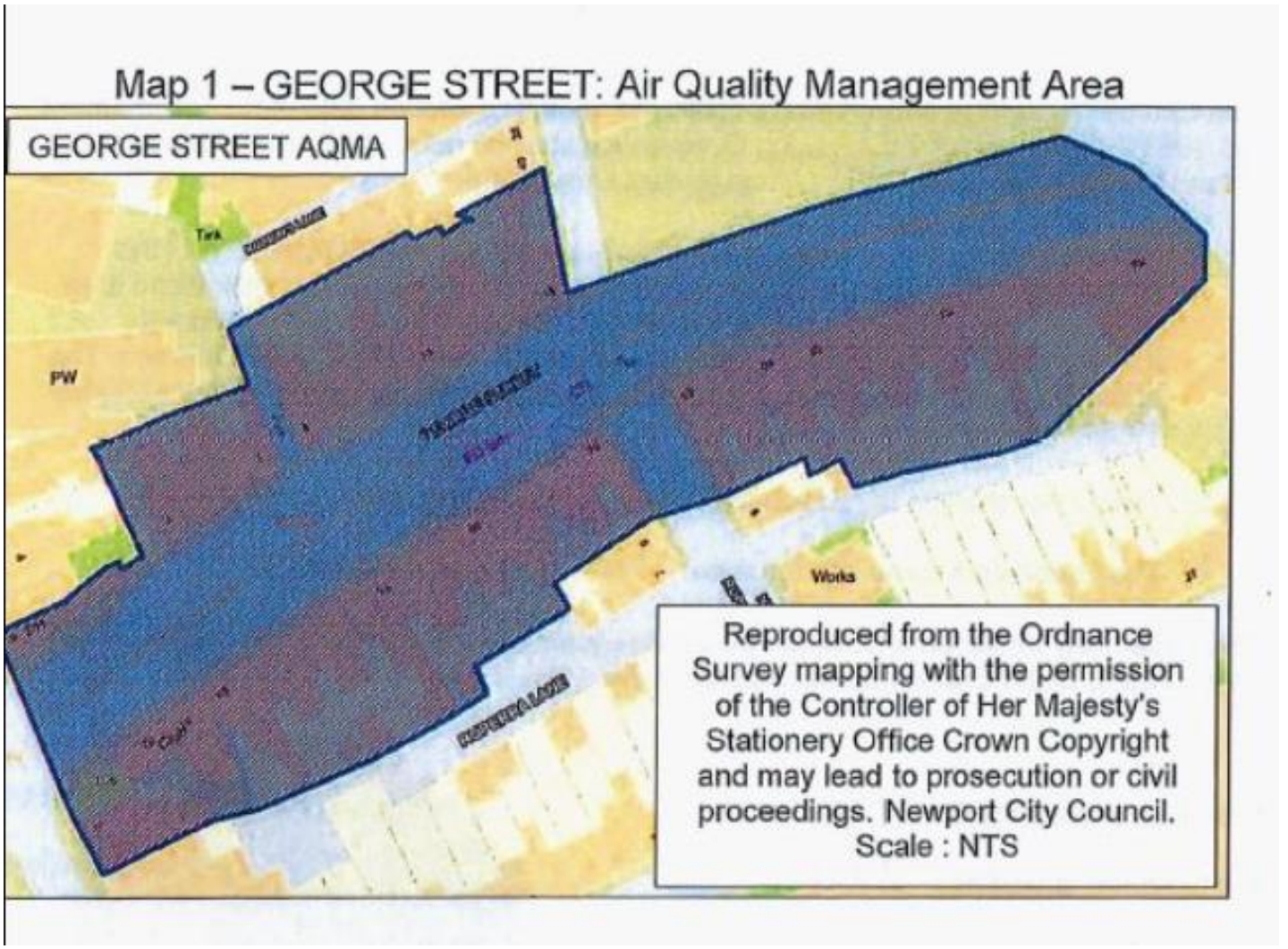


Figure D.9 – High Cross AQMA

Figure D.10 – Cefn Road AQMA

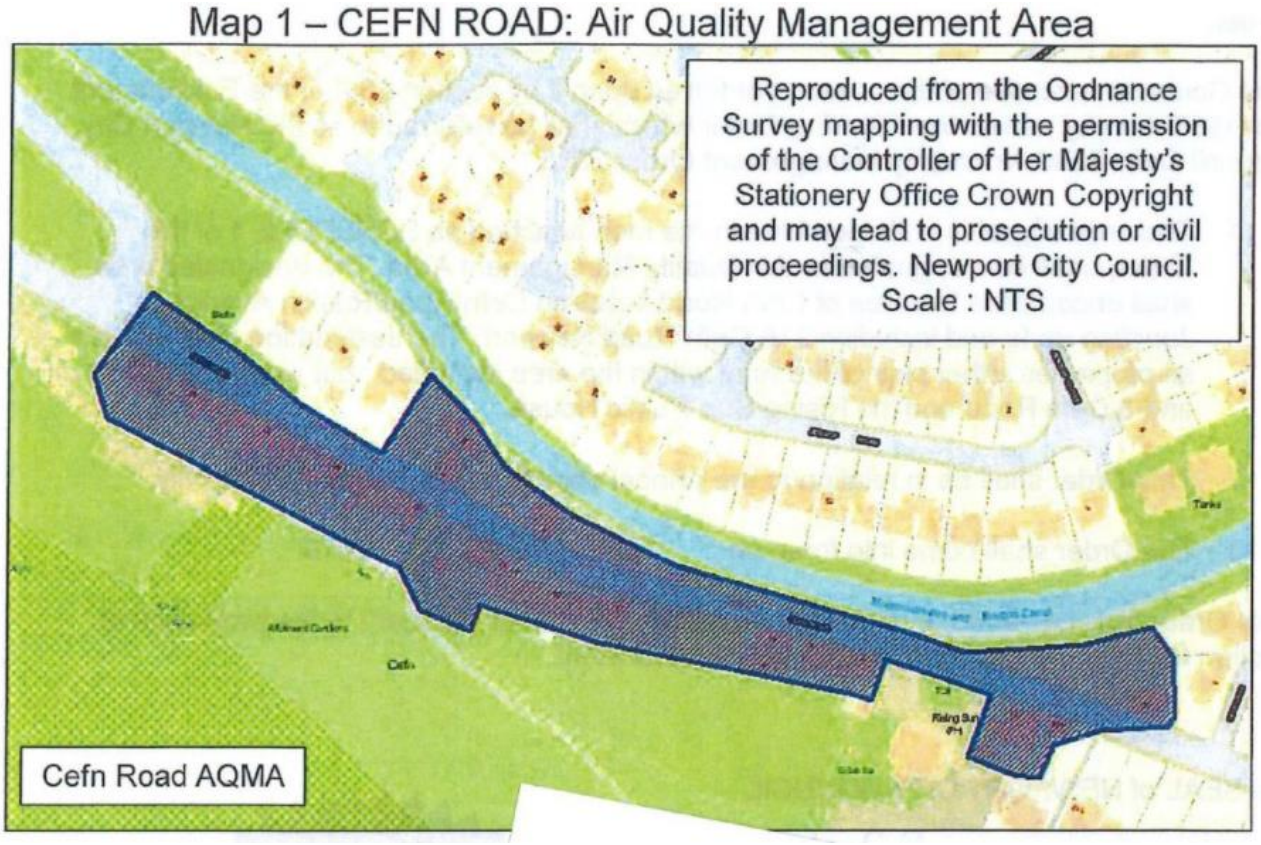


Figure D.11 – Caerphilly Road AQMA

Appendix E Sustainable Travel Action Plan @2019

Much of this plan which was adopted in 2019 by Council has been superseded by the Councils Climate Change Plan and pending Air Quality Action Plan. Elements of the Sustainable Travel strategy which are not replicated in these two plans will be merged with the aims of the AQAP in bespoke local actions for AQMA communities and NCC to be guided by once the refreshed AQAP has been published.

1. **Our Organisation**
    - Business (Grey) mileage & staff commuting
    - Fleet
    - Procurement
2. **Collaboration**
    - Influencing partners
3. **City Wide**
    - Planning policy
    - Highways
    - Active travel
    - Air quality management areas
    - Schools
    - Charging point infrastructure
    - HGVs/LGVs
    - Taxis
    - Public transport
    - Recommendations of the South East Wales Transport Commission (SEWTC)

Theme & Objective	**Actions**	**Lead**	**Timescales** (TBA)	**Measurable**	**Progress**
Council					
1) Business (Grey) Mileage & Staff Commuting: Reduce petrol and diesel car grey mileage and employee commuting by increasing agile working, active travel and usage of public	a) Review and update HR and travel expense policies	PBC		*i) % journeys commuting to and from work made by car* *ii) % journeys to and from work made by public transport* *iii) % staff who work from*	
	b) Ensure IT capabilities in place for agile working	PBC / SRS			*Already underway*
	c) Promoting and encouraging active travel for short journeys	PBC			

Theme & Objective	Actions	Lead	Timescales (TBA)	Measurable	Progress
transport and ultra-low emissions vehicles (ULEVs).	d) Promoting and encouraging use of public transport where possible	PBC		*home 1 or more days per week* *iv) % vehicles used during the day which are ultra-low emission (Travel Charter Data)*	
	e) Review hire car contract to consider emissions and ULEVs	CS / PBC			
	f) Develop sustainable travel plans for all council sites.	RIH / PBC			
	g) Consider sustainable travel when building new council sites	RIH			
	h) Implement the Gwent Travel Charter across the council	PBC			*See below*
2) Fleet: Reduce council carbon emissions by moving to a ULEV fleet.	a) Consider the whole life cost of a vehicle when purchasing vehicles.	CS		*i) % fleet that are ultra-low emission* *ii) % of carbon emission from fleet*	
	b) As fleet vehicles come up for renewal replace with ULEVs	CS			*Already underway*
	c) Move towards heavy good fleet to ULEV where practicably possible	CS			*First refuse vehicle in Wales*
	d) Increase charging capability at council sites	CS / RIH			*Already underway*
	e) Link to charging capability to solar source once in place.	RIH			
3) Procurement: Reduce transportation of procured goods	a) Review procurement policies and contracts to source locally where practically possible	FS		*i) % contracts where sourcing locally is considered.*	
Collaboration					
4) Partnership: Work with our	a) Work with the PSB to implement	PSB		*PSB Intervention*	*Work underway*

Theme & Objective	Actions	Lead	Timescales (TBA)	Measurable	Progress
partners to reduce carbon emissions relating to travel	to Sustainable Travel Intervention of the Well-being Plan			*group currently agreeing measurables*	
	b) Work with partners across Gwent to launch and implement the Gwent Travel Charter	PSB		*See charter measures above – same measures of the whole of Gwent*	*Launch 6th Nov*
	c) Link in to the city region and Transport for Wales	All			
City Wide					
5) Planning Policy: Introduce and update planning policy to enable sustainable travel.	a) Review parking SPG	RIH / CS		*i) Number of new developments where sustainable travel links are designed in.*	
	b) Develop a sustainable travel SPG	RIH /PBC			*Complete*
6) Highways: Prioritise active travel and public transport links	a) Prioritise active travel and links to public transport in highway design and changes across the city. E.g. appropriate crossings etc	CS		*i) Journeys on active travel routes (Active travel counter data)*	
	b) Tackle illegal parking throughout the city to prioritise walking, cycling and public transport.	CS			*Already underway*
7) Active Travel: Reduce carbon emission by increasing active travel across the city	a) Engage with public and partners to review and update the Active Travel Network Map	CS			*Currently underway*
	b) Using the Active Travel Network Map continue to develop, upgrade and maintain the network.	CS			

Theme & Objective	Actions	Lead	Timescales (TBA)	Measurable	Progress
	c) Promote the benefits and options for active travel.	CS			*Currently underway*
	d) Introduce city wide on street bike hire scheme (including E bikes)	CS			*Feasibility study complete. Funding required*
	e) Work towards all active travel and public transport options link together in an integrated way for the user.	CS			
8) Air Quality Management Areas (AQMAs): Reduce traffic emissions in identified areas of poor air quality.	a) Develop and implement local air quality management plans for the AQMAs across the city.	L&R		*To be agreed once specific actions are agreed.*	*AQAP started and completion due 2022/3.*
9) Schools: Promote active travel for the school run.	a) Roll out active travel programmes in schools as funding becomes available.	CS/ES		*i) Active travel journeys to school*	*Programme running at St David's currently*
	b) Consider introducing traffic free streets around schools.	CS/ES			*Learn from schools in Cardiff that already have this in place*
	c) Schools to develop sustainable travel plans.	ES			
	d) Consider sustainable travel when building new schools.	CS/ RIH/E S			
	e) Review school transport to reduce carbon emissions.	CS/ES			
10) Charging Point Infrastructure: Increase charging capacity across the city.	a) Increase number of charging points the city as funding becomes available	RIH		*i) Number of public charging points across the city*	*currently being installed in council car parks*
	b) Ensure policies in place to enable individuals to	RIH		*ii) Number of privately*	*Air Quality SPG leading to increasing number of planning application requirements for EV*

Theme & Objective	Actions	Lead	Timescales (TBA)	Measurable	Progress
	install charging points			*owned charging points*	*charging and construction vehicle routing away AQMAs*
11) HGV/LGVs: Reduce emissions from HGVs/LGVs.	a) Consider the benefits of the fuel economy scheme and decide whether to source funding for future years. E.g. Ecostars			*i) Reduction in carbon emission of those organisations taking part in the scheme*	*Recruitment phase now completed; To consider 2021 Ecostars work in terms of capturing metrics on emissions/savings. To be used as evidence base for any future scheme roll out 2022.*
12) Taxis: Encourage a low emission taxi fleet.	a) Develop a ULEV taxi pilot.	L&R		*i) Increase in ULEV taxis*	*Funding recently offered*
	b) Source funding to implement a city wide fuel economy taxi scheme e.g. Ecostars	L&R			
	c) Install charging points at Taxi Ranks.	RIH/ L&R /CS			
13) Public Transport: Encourage the use of public transport instead of car usage.	a) Work with local providers to increase the uptake of ULEV buses	CS		*i) % of ULEV buses* *ii) % of public transport journeys*	*Newport Bus have 15 ULEV buses*
	b) Improve travel information to encourage the use of public transport	CS			*Bus stops with real time info being installed*
14) South East Wales Transport Commission (SEWTC): Fully benefit from the work undertaken by the SEWTC.	a) Review the recommendations in the SEWTC final report and integrate in to this action plan.	PBC		*To be agreed once specific actions are agreed.*	*To be published Nov 2020*

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
eRCV	Electric Refuse Collection Vehicle
EV	Electric Vehicle
LAQM	Local Air Quality Management
$\mu g/m^3$	Micrograms of the pollutant in the air
NCC	Newport City Council
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
SCR	Selective Catalytic Reduction
SEWTR	South East Wales Transport Report
SO_2	Sulphur Dioxide

STS	Sustainable Transport Strategy
WG	Welsh Government