Newport City Council

2023 Air Quality Progress Report (2022 data year)

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2023 Air Quality Progress Report

In fulfilment of Part IV of the Environment Act 1995

Local Air Quality Management

Date: June 2023

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Report Reference Number	APR_060923
Date	September 2023

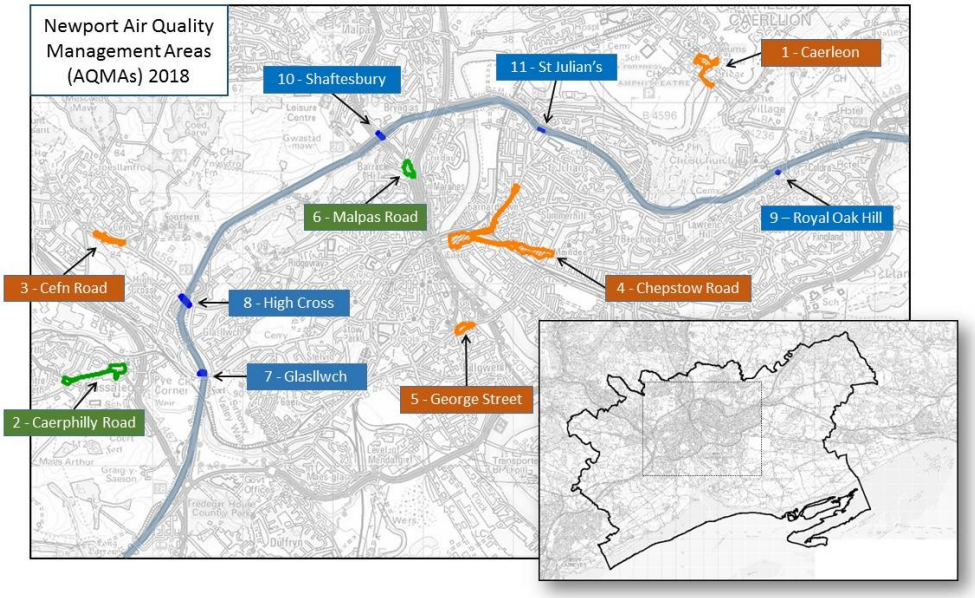
Executive Summary: Air Quality in Our Area

Air Quality in Newport City Council

In 2022, 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 decrease in Newport since 2021. Measured 2022 concentrations were on average below 2019 concentrations both within and outside of the AQMAs.

Prior to 2021, most of the monitoring locations within the AQMAs were at or just above the objective level. Given that the years 2020-2021 were not representative due to travel restrictions put in place because of the Covid-19 Pandemic, the St Julian's AQMA, which measured lower concentrations was not revoked pending a review of a more representative year of completed monitoring (2022). Concentrations within the St Julian's, Royal Oak Hill, High Cross, Glasllwch and Shaftsbury AQMAs have remained below the objective for the past five years, so it is recommended that these AQMAs are revoked.

Current AQMAs



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

The majority of emissions resulting in exceedances of the objectives in the NCC area is as a result of road traffic, with other sources including domestic burning and commercial sources (these typically being covered by Permitting Regimes).

Newport's Sustainable Transport Strategy (STS) includes the following actions which when implemented should reduce emissions: 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 and is expected to be put before cabinet in October 2023. A vital part of this has been 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 of other air quality groups to serve the other five non M4 based AQMAs.

Actions to Improve Air Quality & Understanding

The Sustainable Travel Strategy (STS) was adopted in 2022 and aims to ensure that Newport reaches the air quality objectives in all areas of the city in the shortest possible time, by actively facilitating a change in travel behaviour across the district to a low/zero emission form (Newport City Council, 2019).The Strategy can be found here.

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.

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.

Collaboration on planning applications provides opportunities for a range of measures to be sought in relation to new development. This currently includes but is not limited to:

- Anti-idling measures during construction phases which are retained during operational phases of development.
- Electric Vehicle and bike 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 backup generators 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 2023. 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 https://www.cleanairday.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 October 2023.

Recommendations by Welsh Government (WG) further to the 2019 Annual Progress Report (APR) (Newport City Council, 2020) were that the St. Julian's Air Quality Management Area (AQMA) can be revoked given its ongoing compliance. However, due to the uncertainties over ongoing trends as a result of pandemic lockdowns during 2020 and 2021 and the resultant changed working and traffic patterns, it was considered that at least a further year of monitoring should be undertaken. As part of this work additional diffusion tubes were deployed to provide a detailed assessment in St Julians AQMA in support of the revocation process. As shown below, diffusion tubes located within the St Julians AQMA have continued to measure concentrations below the objective in 2022. In addition to this, the Shaftsbury AQMA has also shown ongoing compliance at its diffusion tubes. It is therefore reasonable to consider that both the St Julian's and Shaftsbury AQMA be revoked due to their ongoing compliance.

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 18 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

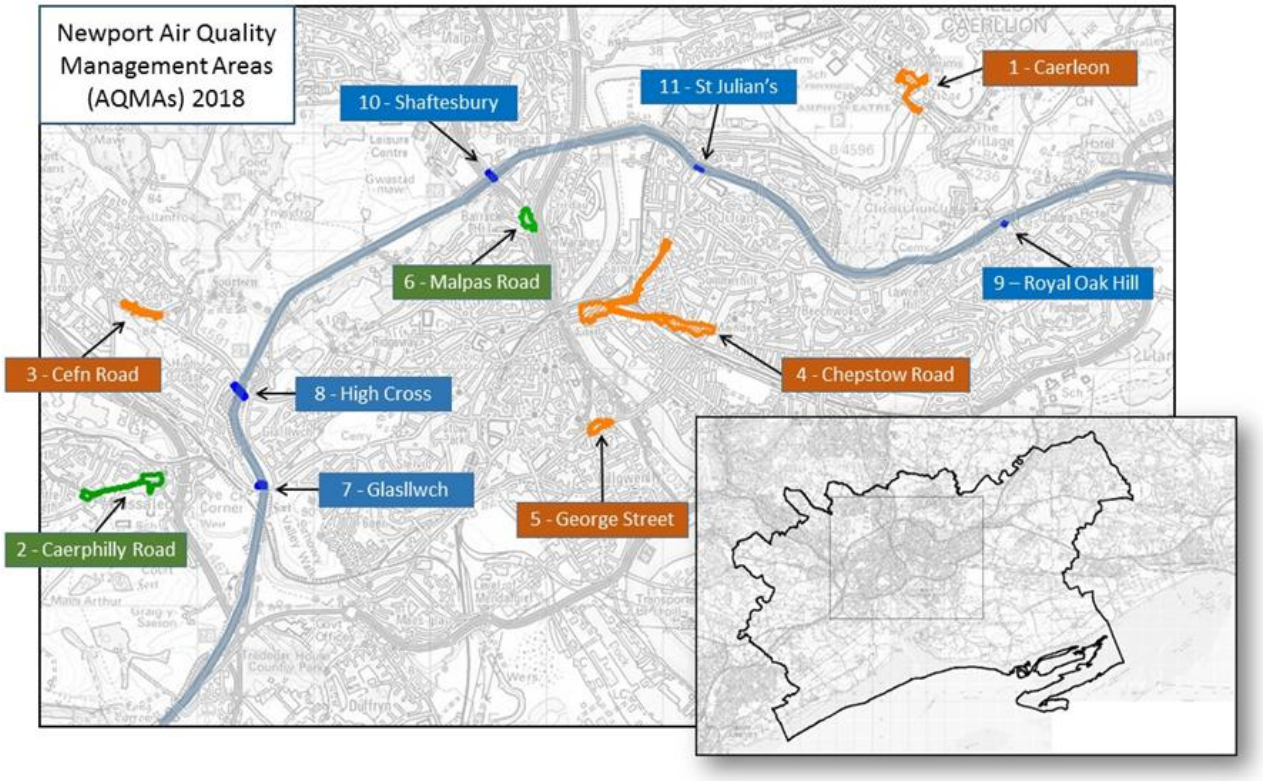

Table 1.1 – Declared Air Quality Management Areas (in date order)

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 a mixed picture of potential improvement. 2020 and 2021 data are anomalous, but 2022 data shows compliance has been achieved.	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 and 2021 data are anomalous. 2022 concentrations were all below the AQO and have decreased when compared with pre-pandemic concentrations in 2019.	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 and 2021 data are anomalous. 2022 concentrations were all below the AQO and have decreased when compared with pre-pandemic concentrations in 2019.	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. 2020 and 2021 data are anomalous,	Mixed residential and commercial street canyon bounding A4051 Malpas Road	2008 AQAP being updated currently

		but 2022 data shows compliance has been achieved at both diffusion tubes, with a significant decrease from 2019 concentrations (average 26% decrease).		
Caerleon/ Chepstow Road 05/2005	NO_2 annual mean	Compliance has been achieved at all sites between 2018 and 2022, with the exception of tubes three tubes which exceeded in both 2018 and 2019. 2022 concentrations were all below the AQO and have decreased when compared with pre-pandemic concentrations in 2019.	Two main roads into Newport (B4596 Caerleon Road & B4591 Chepstow Road) which are bounded by street canyons comprising mixed residential and commercial terraces.	2008 AQAP being updated currently
Royal Oak Hill 05/2005	NO_2 annual mean	5-year trend suggests move towards sustained compliance. 2020 and 2021 data are anomalous and excluded.2022 concentrations have decreased by 26% from pre-pandemic 2019 levels.	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	There have been no exceedances of the objective at any site in the last 5 years. In 2022, all sites measured concentrations below their	A number of properties along either side of the High Street one-way system in Caerleon.	2008 AQAP being updated currently

		respective pre-pandemic 2019 concentrations.		
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 and 2021 data are anomalous and excluded. 2022 concentrations were all below the AQO and have decreased when compared with pre-pandemic concentrations in 2019.	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 and 2021 data are anomalous and excluded. 2022 concentrations were all below the AQO and have decreased when compared with pre-pandemic concentrations in 2019.	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 and 2021 data are anomalous and excluded. Two out of three of the diffusion tubes measured concentrations below the objective in 2022,	Cefn Road between Cefn Road/Ruskin Avenue junction up to and including 116 Cefn Road.	2008 AQAP being updated currently

		however, increases were seen at two out of three of the sites when compared with 2019 pre-pandemic levels.		
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 and 2021 data are anomalous and excluded. 2022 concentrations were all below the AQO and have decreased when compared with pre-pandemic concentrations in 2019.	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 2022 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 will go to scrutiny committee in October 2023.

Key measures completed in 2022 are:

- Setting up of two further Air Quality Stakeholder groups serving AQMAs at Caerphilly Road, Cefn Road, Chepstow Road, George Street and Malpas Road with a view to informing the AQAP process and engaging communities in helping identify interventions for their AQMAs. The groups are currently meeting three times per year.
- Ongoing exploration of engineered solutions to air quality impacts in street canyons and the recruitment of academia and Welsh Government in considering this. Active discussions were started in late 2022 with Pollution Solution, a company that produces a RoadVent system which may have the capacity to sufficiently reduce levels to achieve AQO compliance within the Caerleon AQMA street canyon. Enquiries with Welsh Government took place in early 2023 regarding the feasibility of funding research into this aspect pf air quality and they weren't able to take this forward as a standalone research project at this time, largely due to capacity and resources, however the research piece in relation to street canyons is one that will continue to be raised.
- A 2022 Clean Air Day Event was well attended and welcomed by school communities: it involved a guided environmental walk for school children.
- Obtaining LAQM funding for air quality dispersion modelling of candidate measures for the AQMAs which are the subject of the updated AQAP.

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 to quantify, but move in the right direction	Provision of 16 full electric buses in place of former ICE based buses since October 2020. Fleet funding has since been obtained for further extension of electric services.	Aspirations now extend to achieving full electric fleet of buses. Currently 44 out of 57 buses are electric i.e. 77%	2028 WG target for all buses to be zero tailpipe emissions	Aim to have whole bus fleet on zero emission vehicles
2	Introduction of eRefuse Collection Vehicles (RCVs)	Reduce emissions across AQMAs	NCC	Complete	Ongoing	Quantity of emissions eliminated using NO_2 as surrogate	Extremely difficult to quantify, but move in the right direction	Provision of 6 eRCVs in place of former ICE based RCVs	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. eRCV at Clean Air Day 2023
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 difficult to quantify, but move in the right direction	Scheme recruitment phase completed. Metrics phase ongoing. WG funding to be	X30 new members of scheme bringing total to 47	Scheme membership static at 2021	Survey of existing scheme members re. fuel savings

								sought for refresh of scheme during 2023/24 + opportunity to promote AQMA routing awareness			
4	Anti-Idling Schemes	Development control consultations	NCC	Complete	Complete	Uptake of anti-idling schemes through planning	Extremely difficult to quantify, but may improve locally to the scheme	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 difficult to quantify, aim to encourage a switch to electric	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	x7 units now in use across AQMAs and Bryn Glas locality	Units installed during spring 2022	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 difficult to quantify, aim for modal shift	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 difficult to quantify	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.
9	School Travel Plans	Plans for all schools in AQMAs	NCC	Ongoing	Subject to WG grant application in new year 2023	Uptake of travel plans by schools	Not possible to quantify in terms of concentration reduction, but could quantify modal shift at school	Discussions with education transformation team	Discussions with education transformation team ongoing	2023/24	Uptake of travel plans and active travel contribute to reducing emissions, health and well being
10	Clean Air Day Event	Annual Air Quality Awareness Event	NCC	2023 event in planning phase	March to June 2023	Publicity and awareness	Not possible to quantify	2023 event in planning phase	Clean Air Day Event delivered year on year	n/a	Awareness is an important part of air quality work and at the route of behaviour change
11	LAQM support grant funding bids	Welsh Government annual round of funding for LAQM projects	WG/NCC	Readiness for bid in early 2023	Financial year 2023/24	Awareness, Active travel and Green Infrastructure	Not possible to quantify	Early project ideas from officer and air quality group contacts	LAQM support grant funding delivered in respect of AQAP modelling input	Complete	Not easy to quantify reductions in emissions from GI however ability intercept pollutants demonstrated

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.

2 Air Quality Monitoring Data and Comparison with Air Quality Objectives

Summary of Monitoring Undertaken in 2022

2.1.1 Automatic Monitoring Sites

This section sets out monitoring undertaken in 2022 and how results compare with the objectives.

Newport City Council undertook automatic (continuous) monitoring at two sites during 2022. 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 2022. 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.

The following sites were given a new site ID from previous years in 2021:

- NCC84 became NCC63
- NCC85 became NCC77

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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)	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

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	332943	186748	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	332951	186790	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	332946	186769	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	334944	189240	1.83	N	0.0	9.3	9.3
NCC32E	21 Bridge Street	Façade	N	330862	188110	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**	332418	189603	**2.59**	**Y**	**0.0**	**55**	**55.0**
NCC38	**St. Julians School 2**	**Background**	**N**	332418	189603	**2.59**	**Y**	**0.0**	**55**	**55.0**
NCC39	**St. Julians School 3**	**Background**	**N**	332418	189603	**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
NCC48 D	85 Caerphilly Road	Roadside	Caerphilly Road	327053	186943	1.6	N	0.0	1.2	1.2

NCC49 C	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	187480	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	333959	190556	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	330951	187597	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	331454	187540	2.5	N	5.7	7	1.3
NCC63	41 Pant Road	Façade	Malpas Road	330743	189444		N			

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	332370	188335	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	327521	188486	1.8	N	0.0	3.1	3.1
NCC72A	6 George Street	Façade	George Street	331409	187513	2.06	N	0.0	3.9	3.9
NCC74	Carlton House, Carlton Terr– High Street, Caerleon	Roadside	Caerleon	334140	190392	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
NCC77	34 Queens Hill	Façade	Caerleon	330823	188560		N			

NCC78	Gwent Cottage	Façade	N	334208	190186	1.75	N	0.0	0.8	0.8
NCC79	708 Corporation Road	Roadside	Caerleon	332943	186748	1.6	N	2.8	5	2.2
NCC80	24 Bridge Street	Façade	N	330829	188103	1.7	N	0.1	2.2	2.1
NCC81	1 Livingstone Place	Roadside	N	332009	188397	2.54	N	0.4	2.0	2.0
NCC82	14 Queens Hill	Façade	N	330834	188509	2	N	0.0	4.6	4.6
NCC83	Charles Williams Primary School	Roadside	N	333819	190648	2.1	N	0.1	1.1	1.2
NCC84	41 Pant Road	Roadside	N	330825	188553	2	N	0.0	4.7	4.7
NCC85	34 Queens Hill	Facade	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 assessment for revocation	332312	189702	2.2	N	5.94	5.94	0.0
1S3	Denbigh Road Rail	Roadside	St Julians detailed assessment	332306	189709	1.5	N	5.33	5.33	0.0

			for revocation							
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).

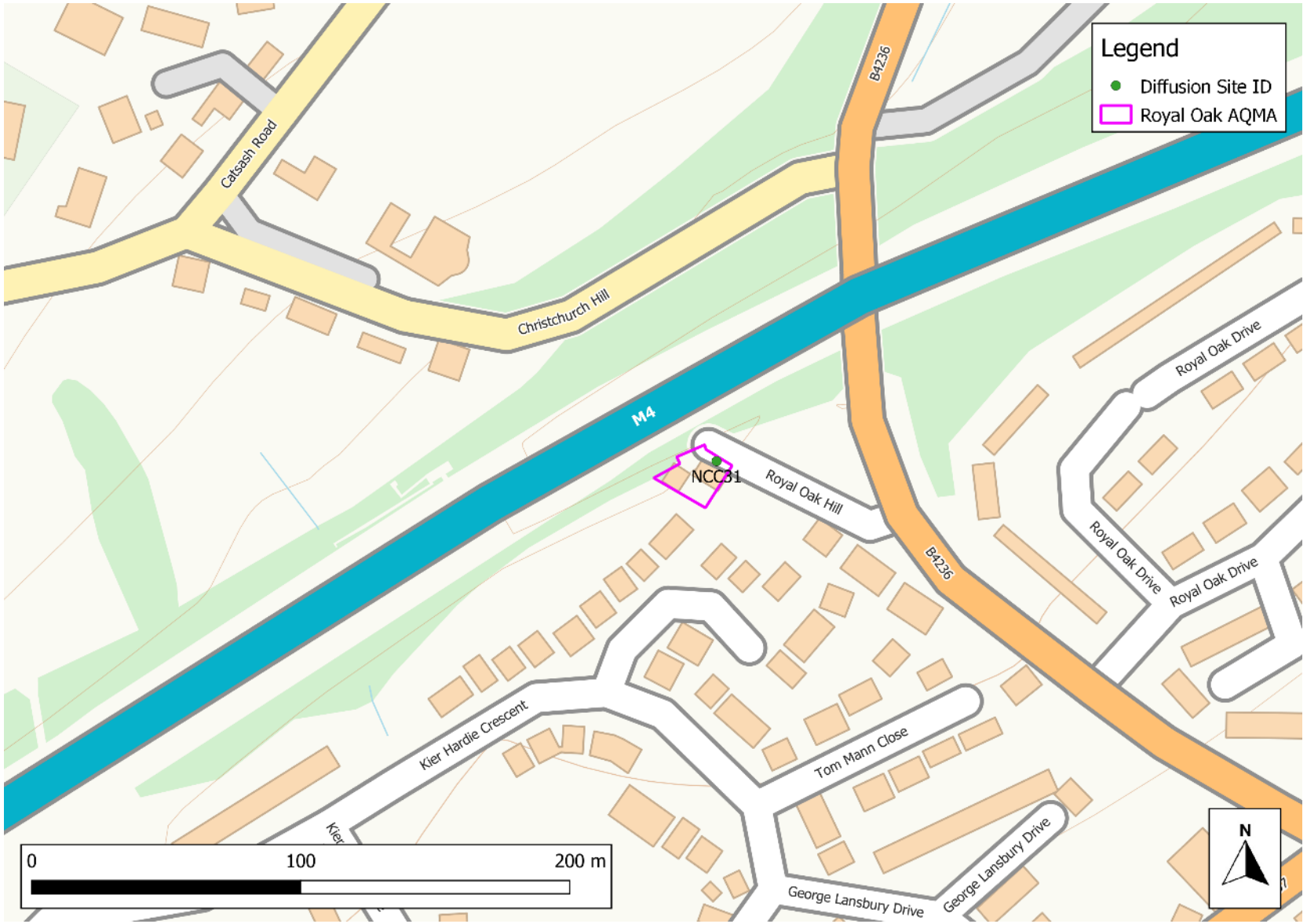


Figure 2.2 – Diffusion Tube Monitoring Locations (AQMAs indicated by pink polygon).

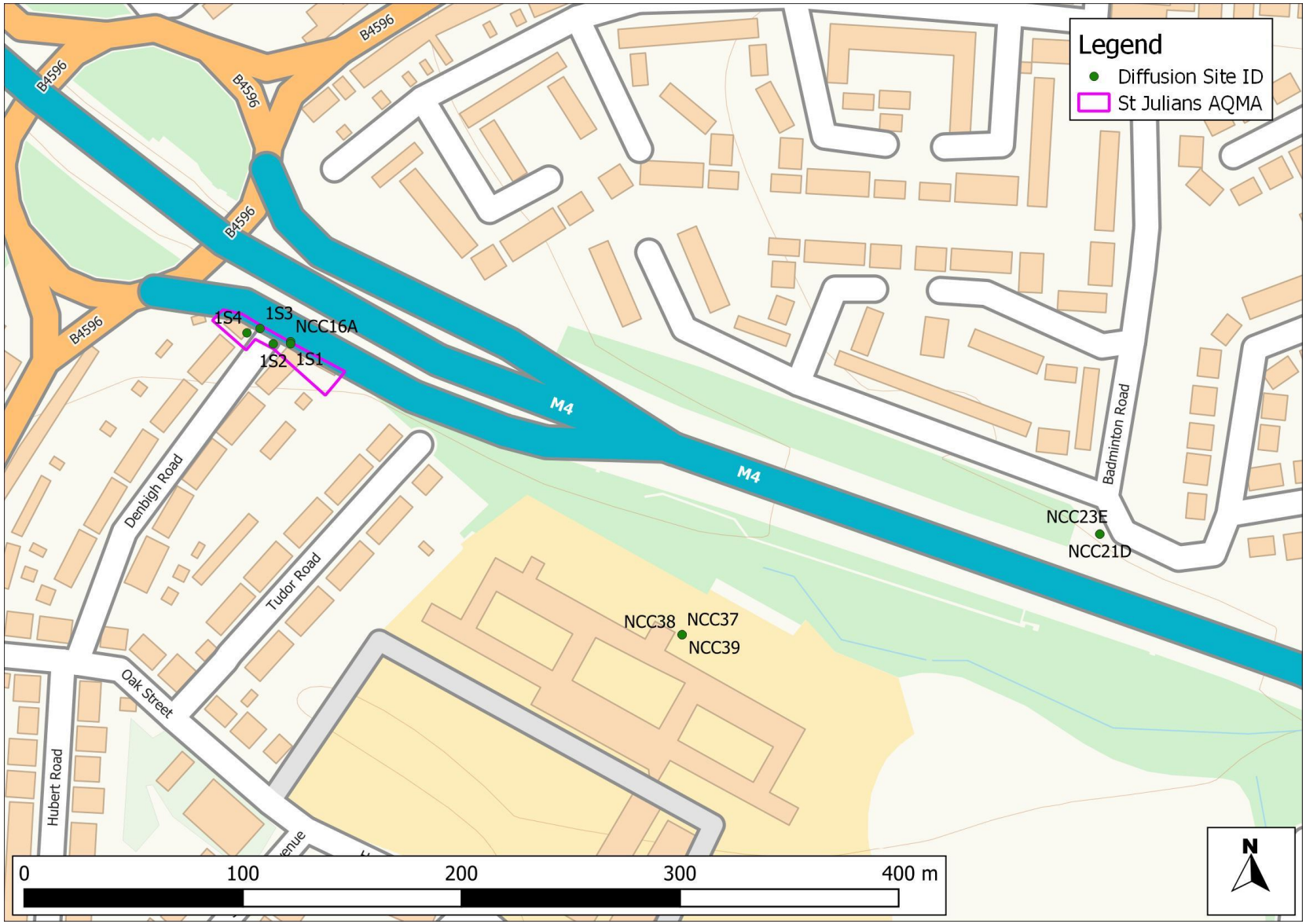


Figure 2.2 – Diffusion Tube Monitoring Locations (AQMAs indicated by pink and yellow polygons).

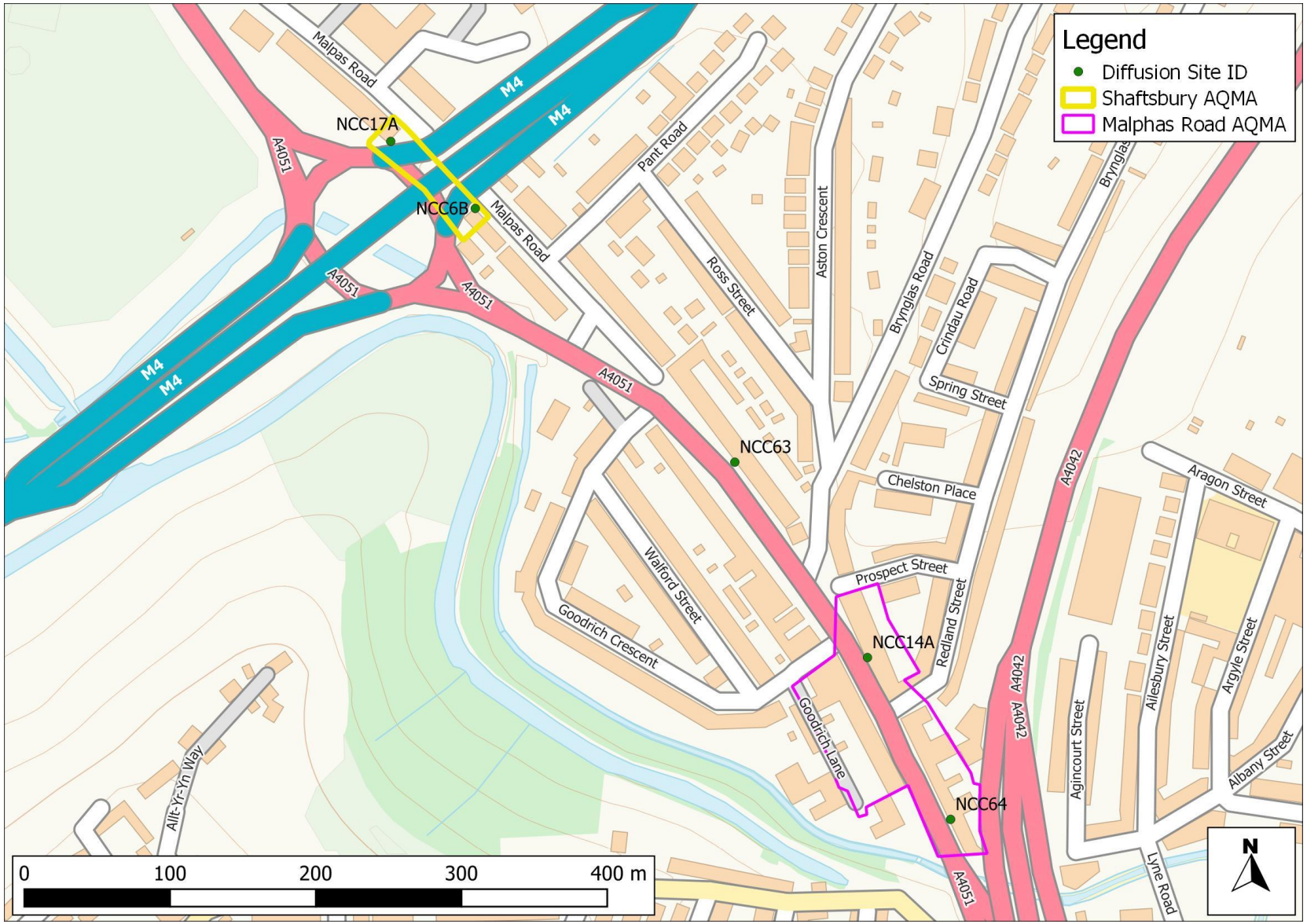


Figure 2.2 – Diffusion Tube Monitoring Locations (AQMAs indicated by pink polygon).

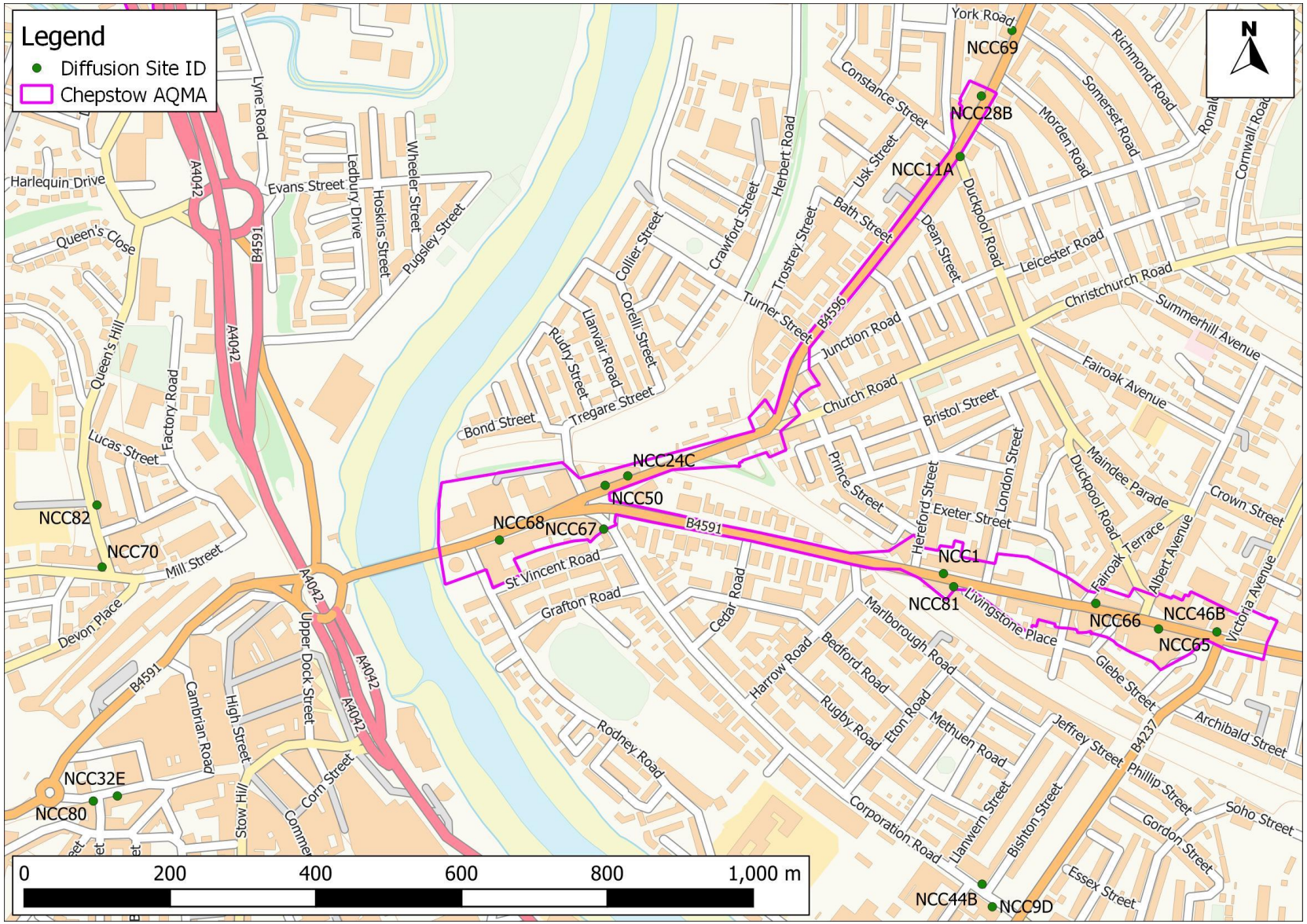


Figure 2.2 – Diffusion Tube Monitoring Locations (AQMAs indicated by pink polygon).

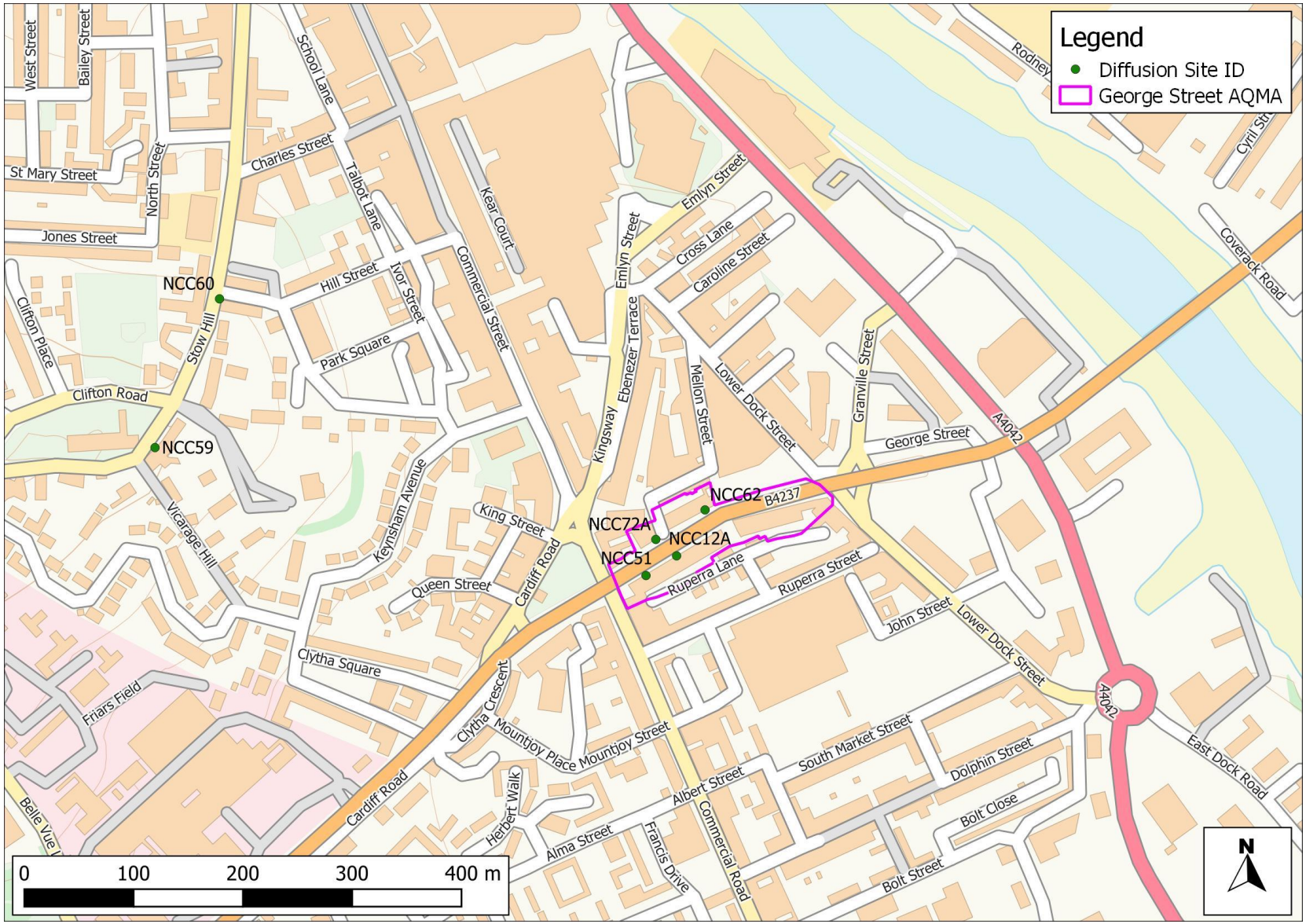


Figure 2.2 – Diffusion Tube Monitoring Locations (AQMAs indicated by pink polygon).

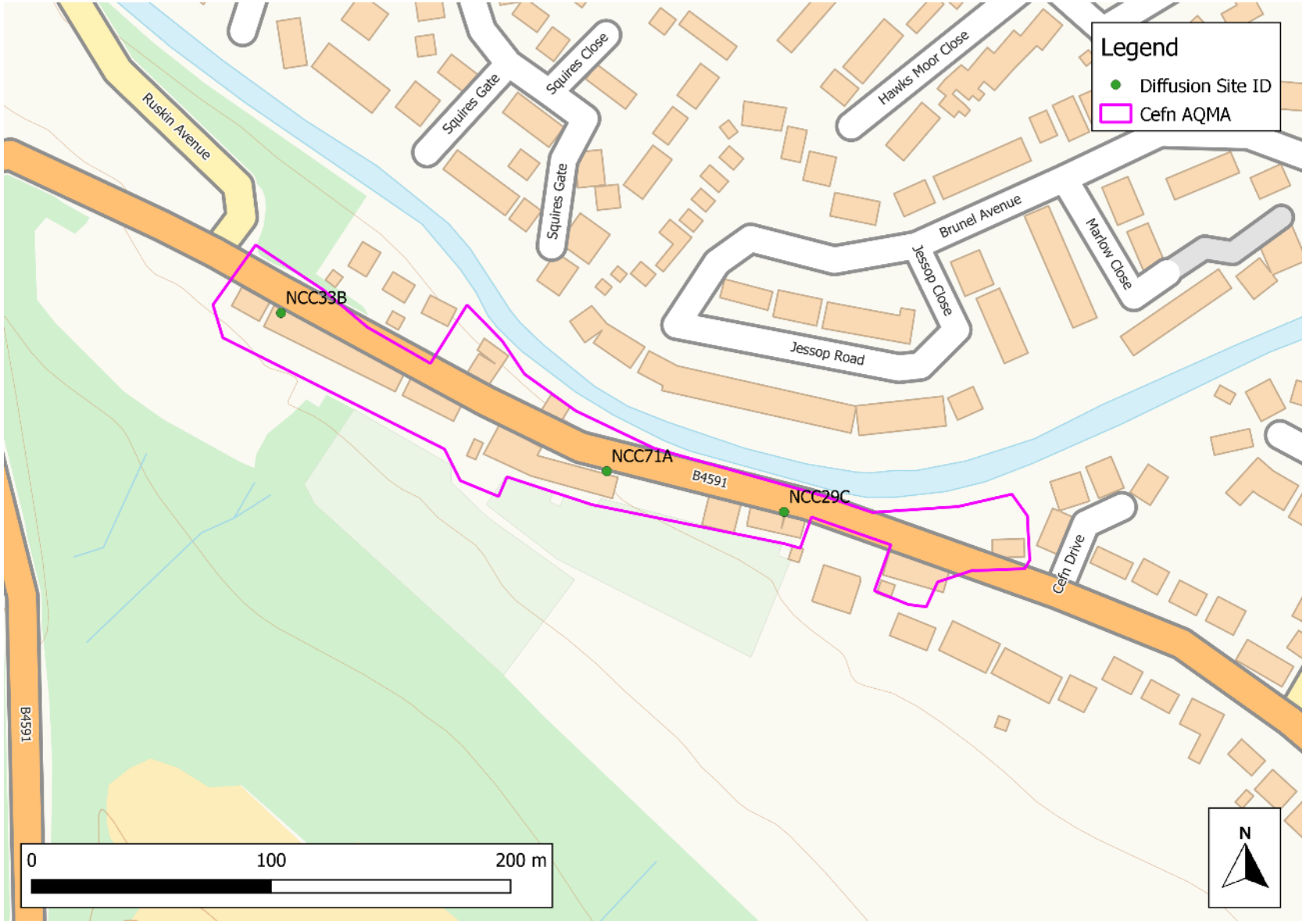


Figure 2.2 – Diffusion Tube Monitoring Locations (AQMAs indicated by pink polygon).

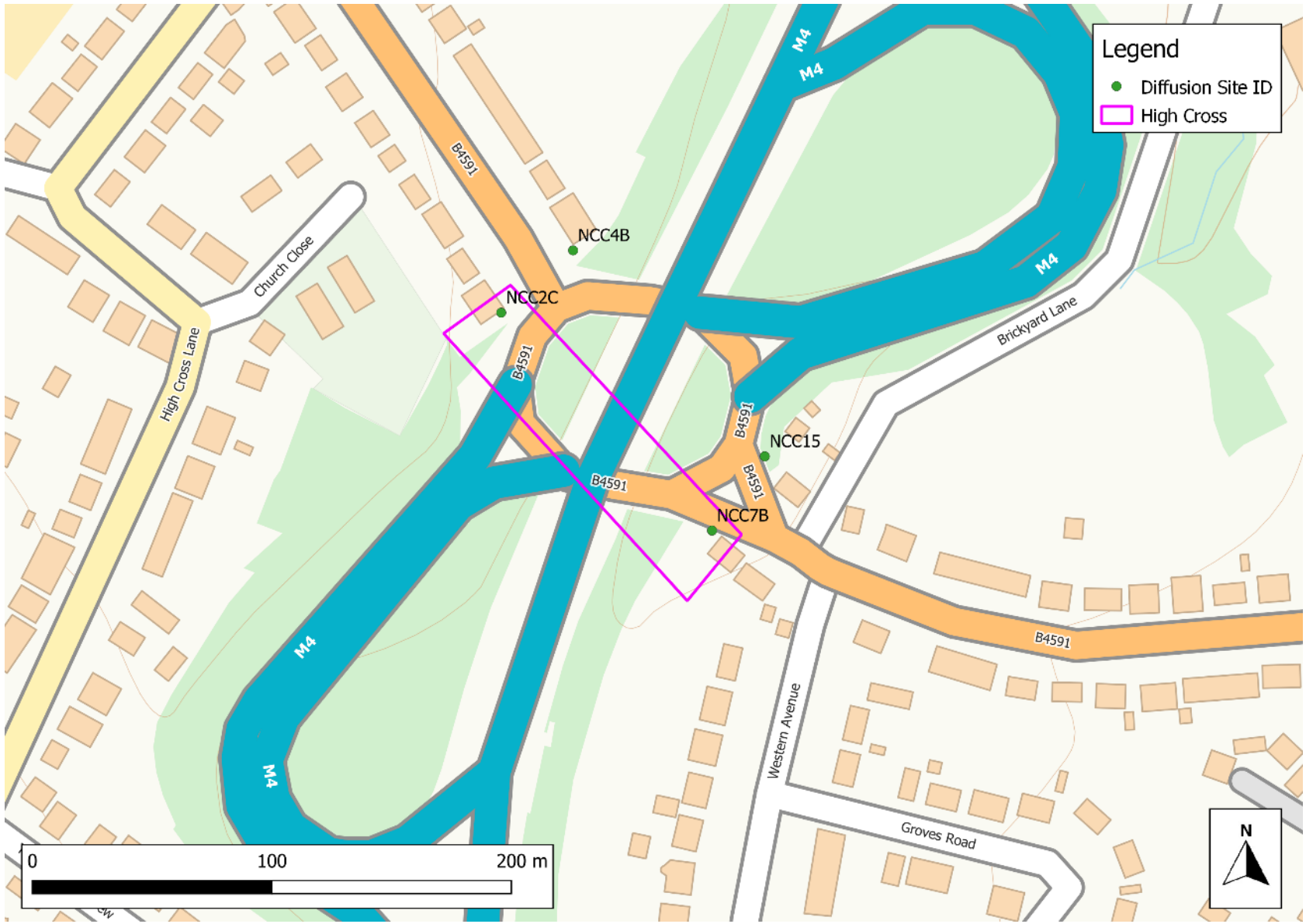


Figure 2.2 – Diffusion Tube Monitoring Locations (AQMAs indicated by pink polygon).

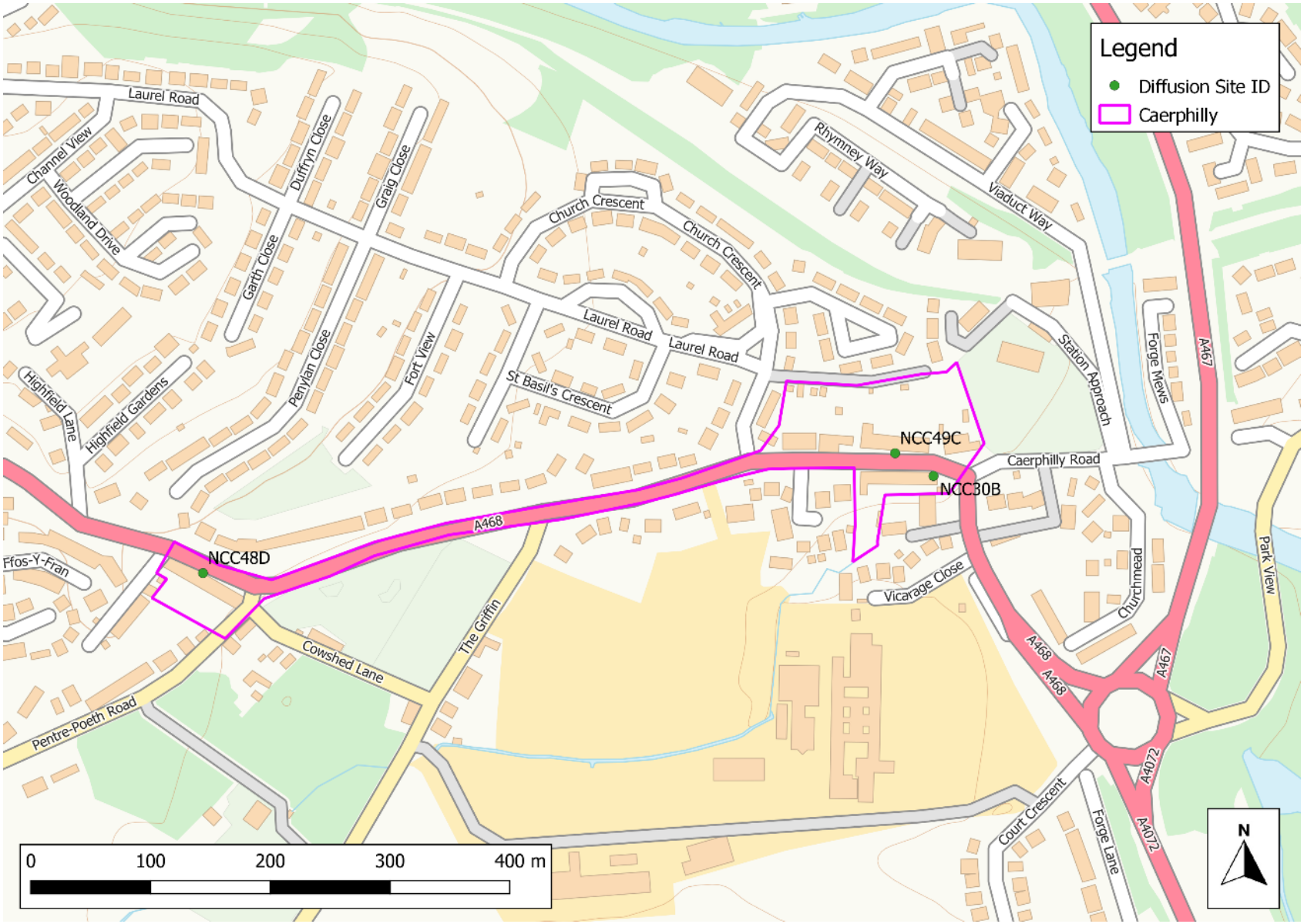


Figure 2.2 – Diffusion Tube Monitoring Locations (AQMAs indicated by pink polygon).

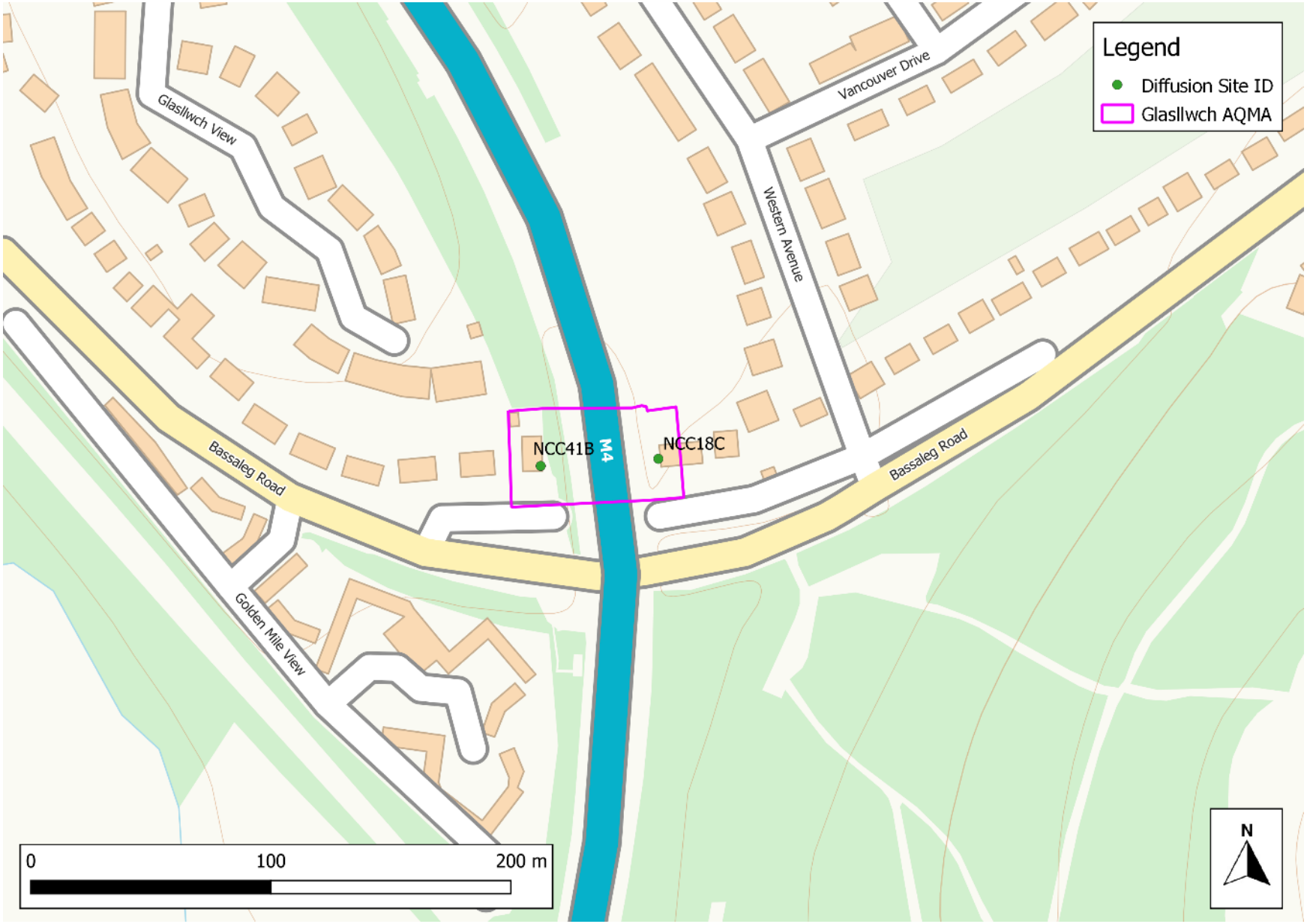


Table 2.3 – Annual Mean NO_2 Monitoring Results ($\mu g/m^3$)

Diffusion Tube ID	Site Type	Valid Data Capture for Monitoring Period (%)	Valid Data Capture 2022 (%)	NO_2 Annual Mean Concentration ($\mu g/m^3$)				
				2018	2019	2020	2021	2022
AN1	Urban Background	61.9	61.9	19.0*	20.0	15.0	15.1	15.0**
AN2	Roadside	70.2	70.2	**41.0**	36.5	28.3	32.4	29.2**
NCC1	Roadside	100.0	100.0	29.7	30.2	24.1	24.1	23.4
NCC2C	Façade	91.7	91.7	36.2	35.8	26.3	28.3	27.8
NCC3A	Façade	91.7	91.7	17.6	18	12.6	15.0	13.6
NCC4B	Façade	100.0	100.0	34.8	33.5	25.4	25.3	25.9
NCC5	Roadside	100.0	100.0	27.3	28.3	27	28.0	26.6
NCC6B	Roadside	100.0	100.0	34.6	31.2	25.7	24.4	22.6
NCC7B	Façade	100.0	100.0	27.6	29.2	21.1	23.4	22.1
NCC8	Roadside	100.0	100.0	38.3	34.6	27.9	28.9	27.1
NCC9D	Roadside	91.7	91.7	27.5	29.3	26.8	26.1	26.5
NCC11A	Roadside	100.0	100.0	31	32.3	25.2	26.4	25.3
NCC12A	Façade	100.0	100.0	35.1	36.4	28.1	29.1	30.2
NCC13A	Roadside	100.0	100.0	-	-	26.9	29.2	26.7
NCC14A	Roadside	100.0	100.0	37.6	40	25.9	28.6	28.8
NCC15	Roadside	100.0	100.0	22.5	23.4	24.3	22.5	20.8
NCC16A	Roadside	100.0	100.0	28.2	27.5	22.6	21.8	22.1
NCC17A	Façade	100.0	100.0	25.4	25.6	20.3	21.0	20.3
NCC18C	Façade	100.0	100.0	39.5	27.8	22.4	20.9	19.8
NCC19A	Roadside	100.0	100.0	-	-	30	29.8	26.9
NCC20C	Roadside	100.0	100.0	32.5	35.3	28.8	30.8	30.8
NCC21D, NCC23E	N/A	100.0	100.0	**54.6**	**48.5**	**46.7**	34.7	33.8

NCC24C	Façade	100.0	100.0	31.1	35.8	26.3	27.5	28.9
NCC25C	Façade	100.0	100.0	**41.6**	**43.8**	26.9	29.2	28.0
NCC26B	Façade	91.7	91.7	**50.9**	**48.6**	35	35.4	33.4
NCC27B	Roadside	100.0	100.0	**41.6**	**40.5**	28.5	30.4	30.2
NCC28B	Roadside	83.3	83.3	33.7	34.2	28.4	29.6	26.4
NCC29C	Façade	83.3	83.3	**41**	**42.7**	31	32.4	37.5
NCC30B	Roadside	83.3	83.3	28.9	30.5	22.7	23.7	22.1
NCC31	Façade	100.0	100.0	36.7	35.6	29.9	26.6	25.7
NCC32E	Façade	91.7	91.7	28.2	28.6	21.2	22.6	22.2
NCC33B	Façade	100.0	100.0	32.4	32.8	23.5	27.5	33.0
NCC34A	Façade	100.0	100.0	26.7	27.1	19.9	20.5	19.4
NCC35A	Roadside	91.7	91.7	25.6	25.9	22.7	23.2	22.3
NCC36A	Roadside	91.7	91.7	23.6	23	19.6	19.7	20.0
NCC37, NCC38, NCC39	Background	91.7	91.7	18.6	18.5	14.4	13.5	13.3
NCC40B	Roadside	100.0	100.0	29.6	33.6	23.1	26.3	26.4
NCC41B	Façade	91.7	91.7	25.4	22.4	17.8	22.8	22.1
NCC42	Roadside	91.7	91.7	25.4	24	18.1	24.7	25.4
NCC43A	Roadside	91.7	91.7	29.7	30.3	22.9	22.9	23.3
NCC44B	Roadside	100.0	100.0	27.2	29.5	22.2	23.0	22.5
NCC45B	Roadside	91.7	91.7	29.2	31.2	24	24.7	24.9
NCC46B	Roadside	100.0	100.0	**44.4**	**48.1**	35	37.3	35.3
NCC47A	Roadside	100.0	100.0	34.3	36.7	25.1	25.9	26.4
NCC48D	Roadside	100.0	100.0	**44.9**	**42.5**	34.9	35.0	33.8
NCC49C	Roadside	100.0	100.0	29.7	28.3	23.9	24.7	23.3
NCC50	Roadside	100.0	100.0	38.1	**41.4**	30.2	32.3	28.5
NCC51	Façade	100.0	100.0	37.5	**41.1**	32.8	31.9	32.9

NCC52	Roadside	91.7	91.7	21	21	18.5	18.6	18.4
NCC53	Roadside	100.0	100.0	19.9	22	15.6	16.0	15.2
NCC54	Façade	100.0	100.0	**-**	-	**-**	8.9	7.7
NCC55	Façade	91.7	91.7	-	-	-	9.7	9.7
NCC57	Roadside	91.7	91.7	29.6	28.3	22.1	25.8	25.8
NCC58	Roadside	91.7	91.7	37.6	38.4	29.4	30.4	30.4
NCC59	Roadside	91.7	91.7	28.2	28.4	20.4	19.8	21.6
NCC60	Roadside	100.0	100.0	34	31	22.2	23.6	24.1
NCC62	Façade	91.7	91.7	32.3	35.4	25.5	28.0	33.6
NCC63	Old NCC84	100.0	100.0	-	-	-	-	27.0
NCC64	Roadside	83.3	83.3	39.7	**41**	28.8	31.8	19.2
NCC65	Roadside	91.7	91.7	**44**	**45**	31.9	33.6	30.1
NCC66	Roadside	91.7	91.7	34.8	34.8	25.7	28.2	29.4
NCC67	Façade	100.0	100.0	30.3	34.6	26	25.9	23.1
NCC68	Roadside	83.3	83.3	31.5	32.1	20.4	23.5	23.5
NCC69	Roadside	91.7	91.7	25.2	27	21.7	22.1	21.4
NCC70	Façade	75.0	75.0	23.6	35.4	25.8	29.9	28.1
NCC71A	Façade	100.0	100.0	39.8	37.8	28.1	34.9	29.4
NCC72A	Façade	91.7	91.7	33.5	33.6	27.5	28.3	28.8
NCC74	Roadside	100.0	100.0	23.5	24.9	17.5	19.3	18.1
NCC75	Façade	100.0	100.0	15.4	19.2	12.8	12.9	12.2
NCC77	Old NCC85	100.0	100.0	-	-	-	-	18.6
NCC78	Façade	100.0	100.0	30.6	29.2	19.6	20.3	30.1
NCC79	Roadside	100.0	100.0	18.8	21.1	31.7	31.6	19.7
NCC80	Façade	100.0	100.0	25	41.8	29.4	33.1	33.6
NCC81	Roadside	83.3	83.3	34.5	39.5	27.8	28.0	29.0
NCC82	Façade	91.7	91.7	25.9	18.5	18.6	21.0	20.5
NCC83	Roadside	83.3	83.3	14	14.9	11	12.2	12.9
NCC84	Roadside	100.0	100.0	28.9	29	19.9	18.9	-
NCC85	Façade	100.0	100.0		29.2	17.7	19.1	-
1S1		91.7	91.7	-	-	-	20.6	17.1
1S2		100.0	100.0	-	-	-	18.9	17.3

1S3		100.0	100.0	-	-	-	20.6	19.4
1S4		100.0	100.0	-	-	-	17.1	16.3

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

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%).

**N.B Air Quality unit turned off from September 2017 – April 2018 due to leak in roof*

*** An annualisation factor has been applied (see Appendix C for further details).*

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

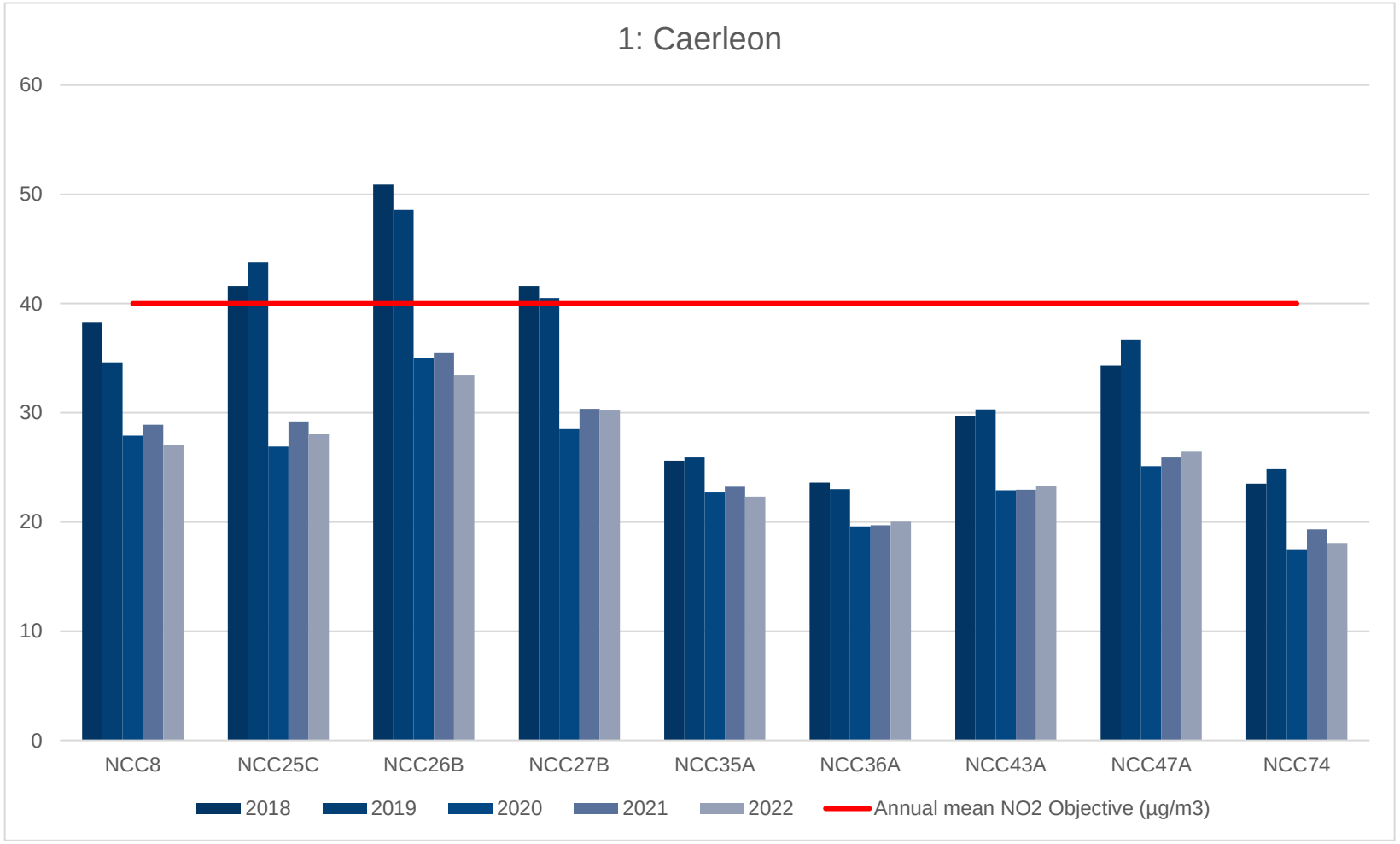


Figure 2.4 – Trends in Annual Mean NO_2 (µg/m^3) (Caerphilly AQMA)

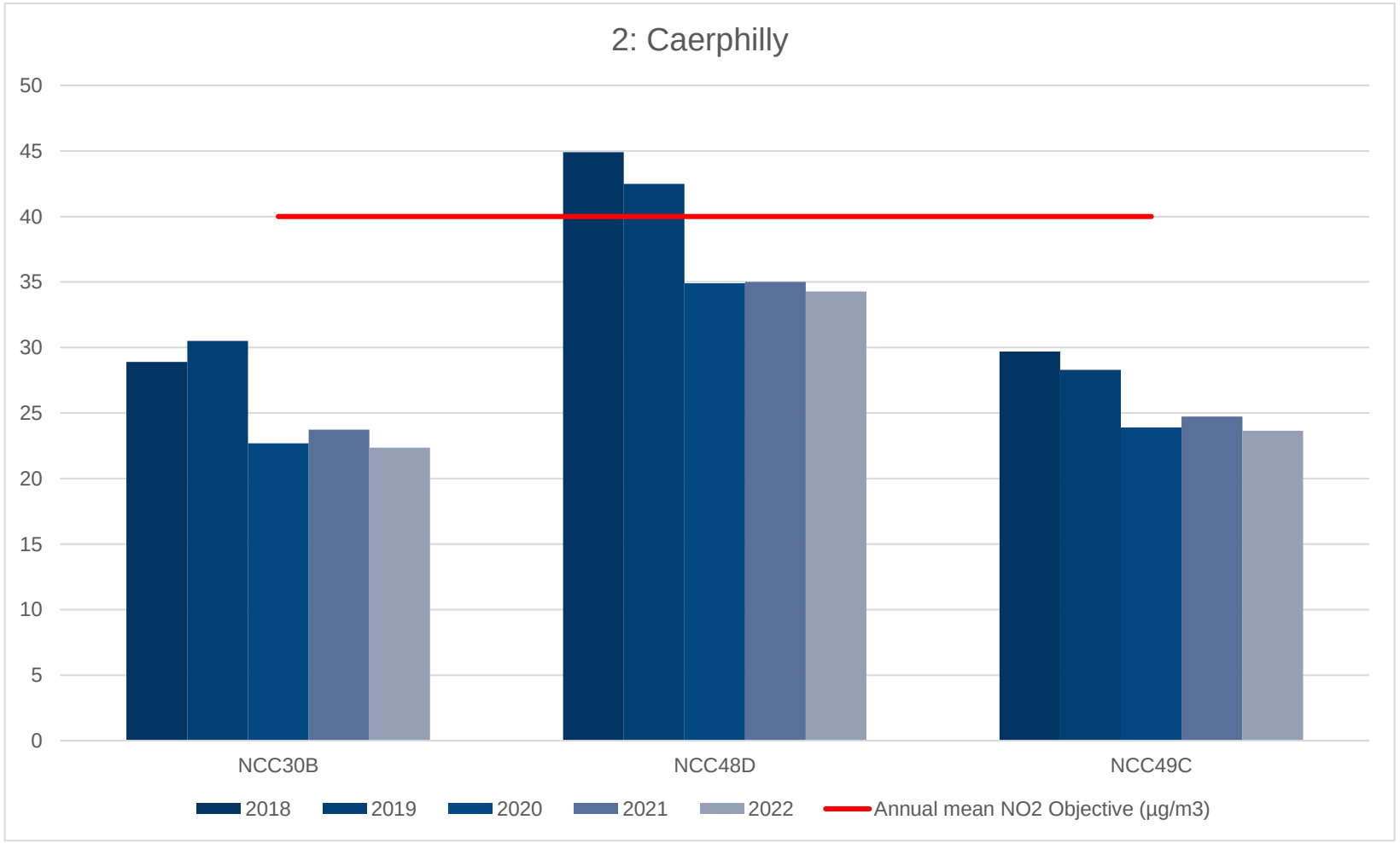


Figure 2.5 – Trends in Annual Mean NO_2 ($\mu g/m^3$) (Cefn AQMA)

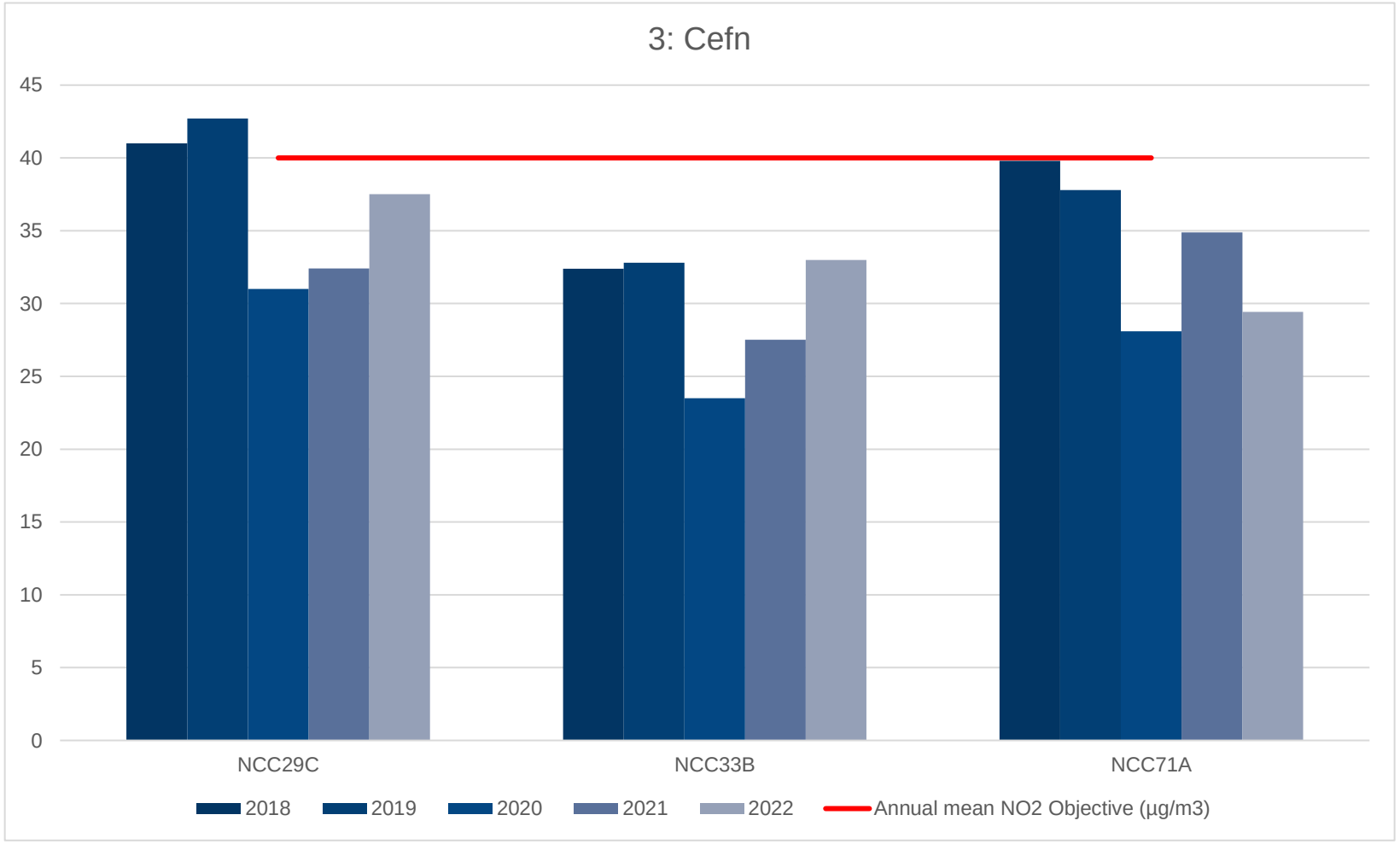


Figure 2.6 – Trends in Annual Mean NO_2 (µg/m^3) (Chepstow Road AQMA)

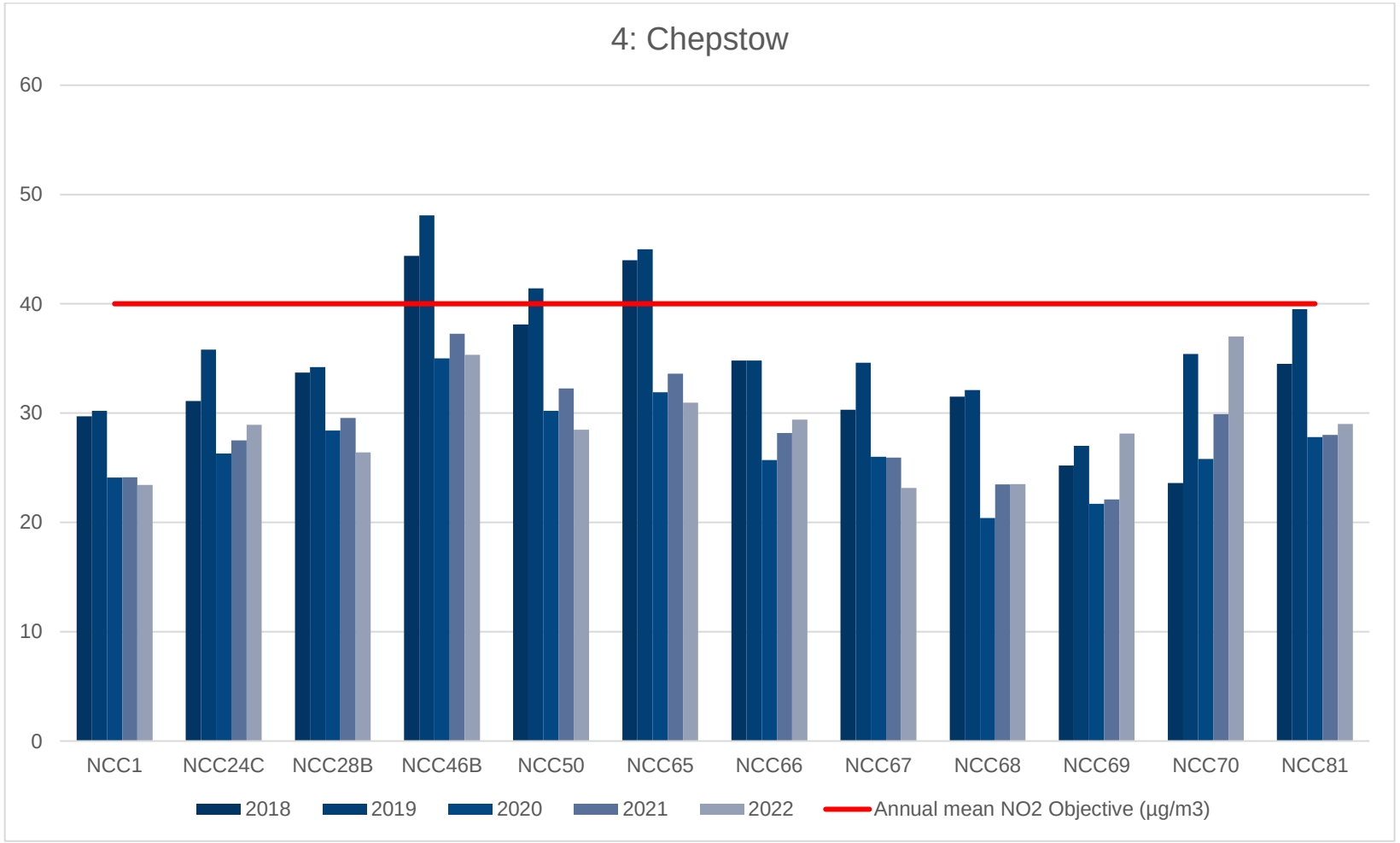


Figure 2.7 – Trends in Annual Mean NO_2 (µg/m^3) (George Street AQMA)

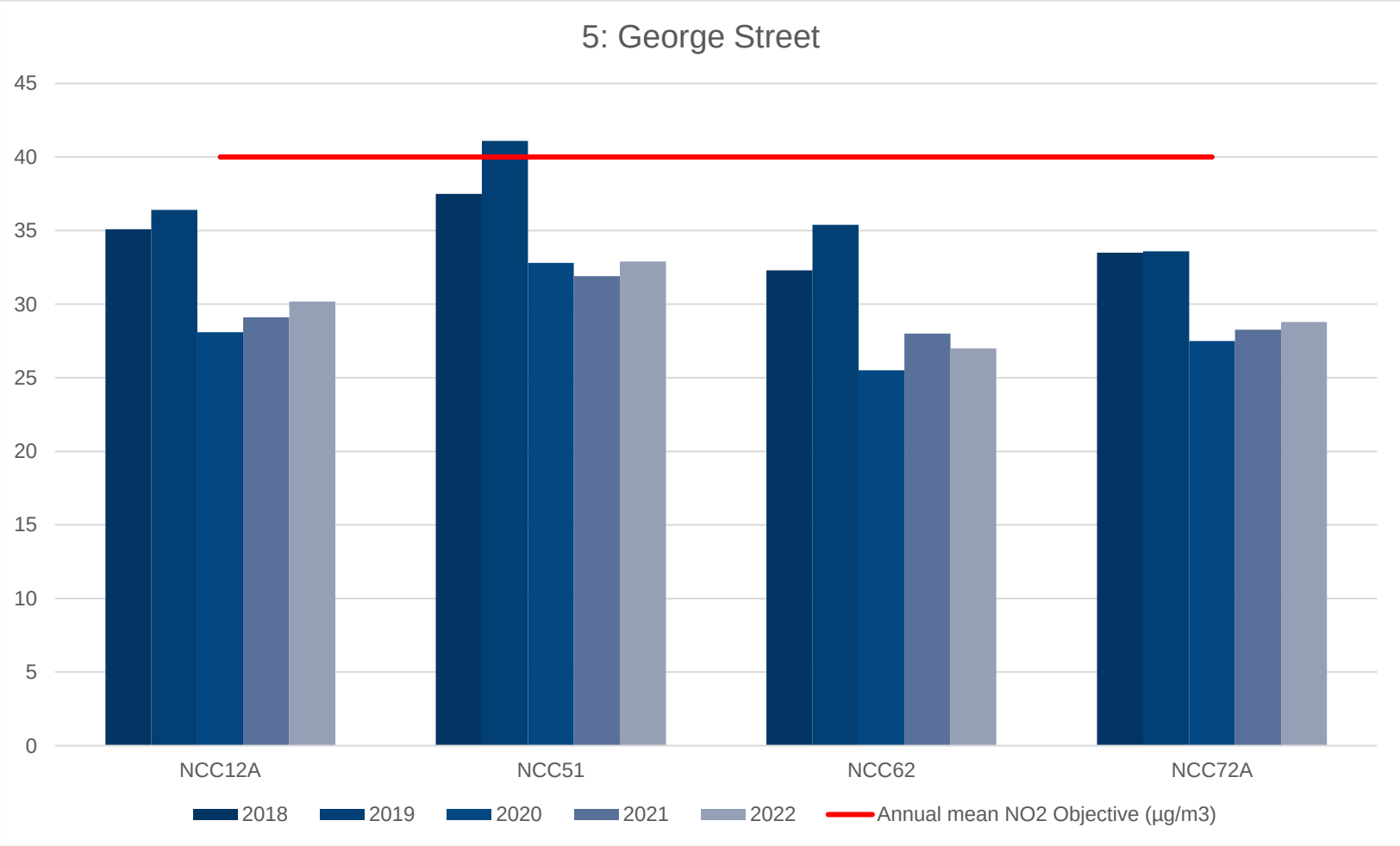


Figure 2.8 – Trends in Annual Mean NO_2 (µg/m^3) (Malpas AQMA)

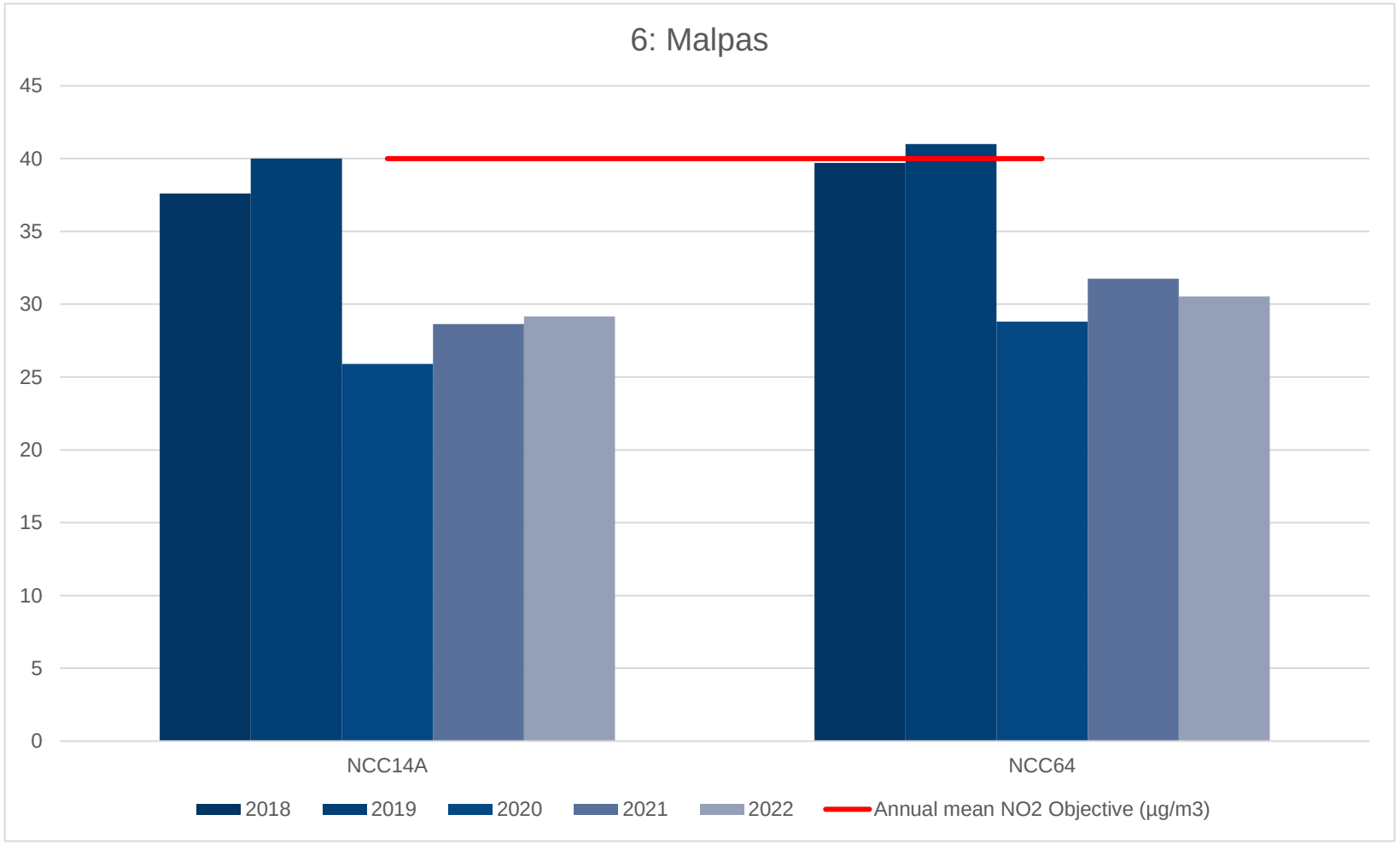


Figure 2.9 – Trends in Annual Mean NO_2 ($\mu g/m^3$) (Glasllwch AQMA)

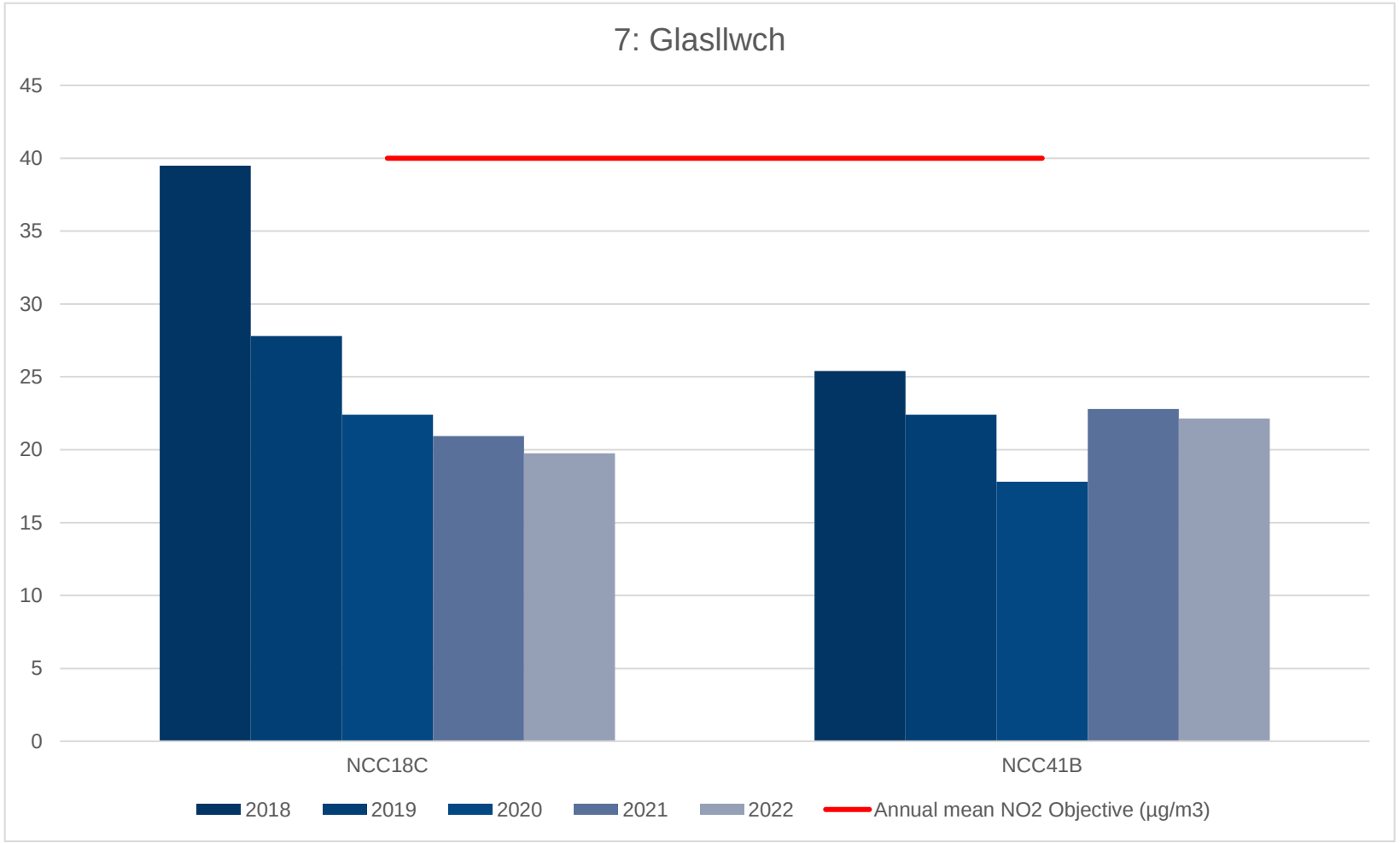


Figure 2.10 – Trends in Annual Mean NO_2 (µg/m^3) (High Cross AQMA)

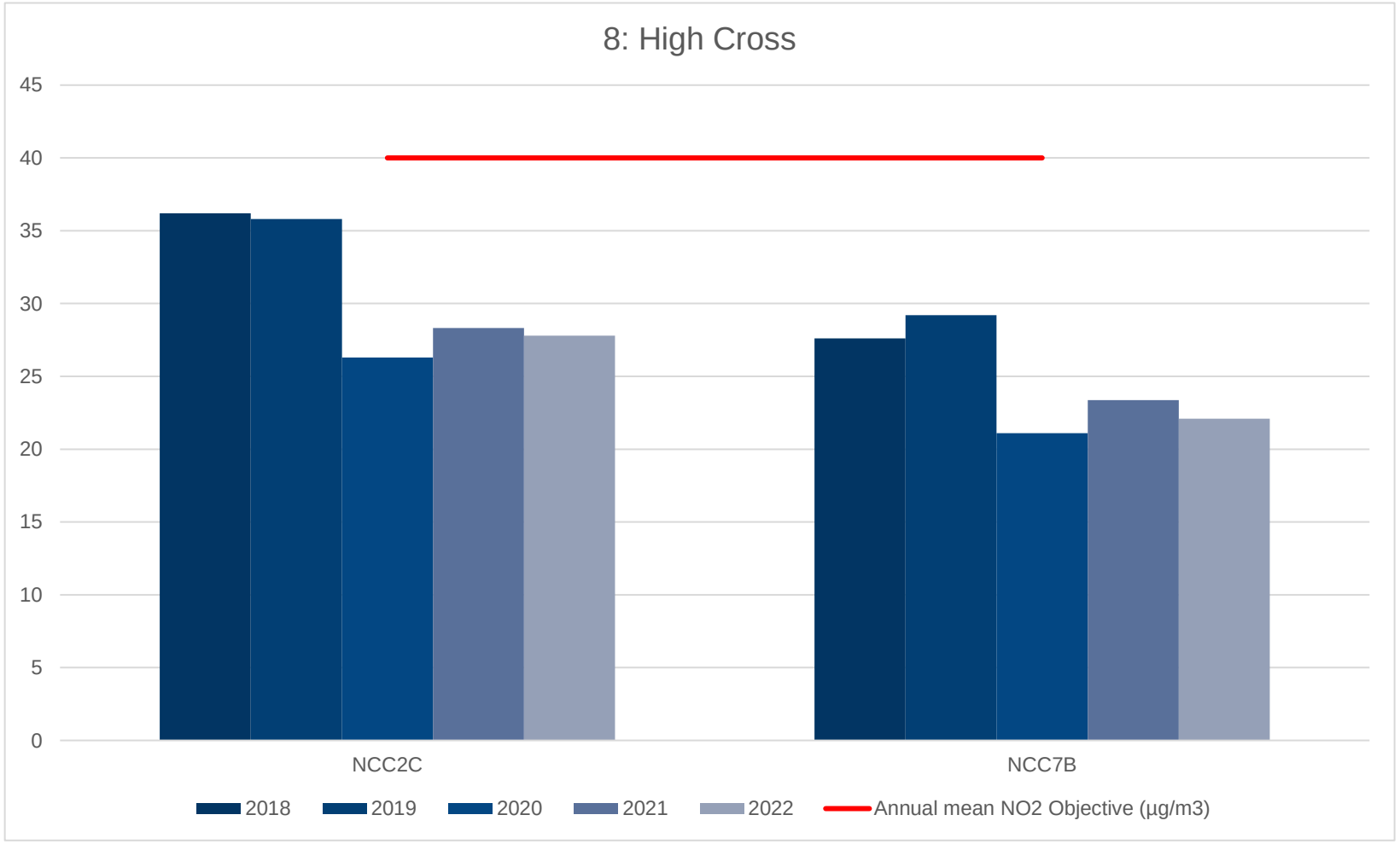


Figure 2.11 – Trends in Annual Mean NO_2 (µg/m^3) (Royal Oak Hill AQMA)

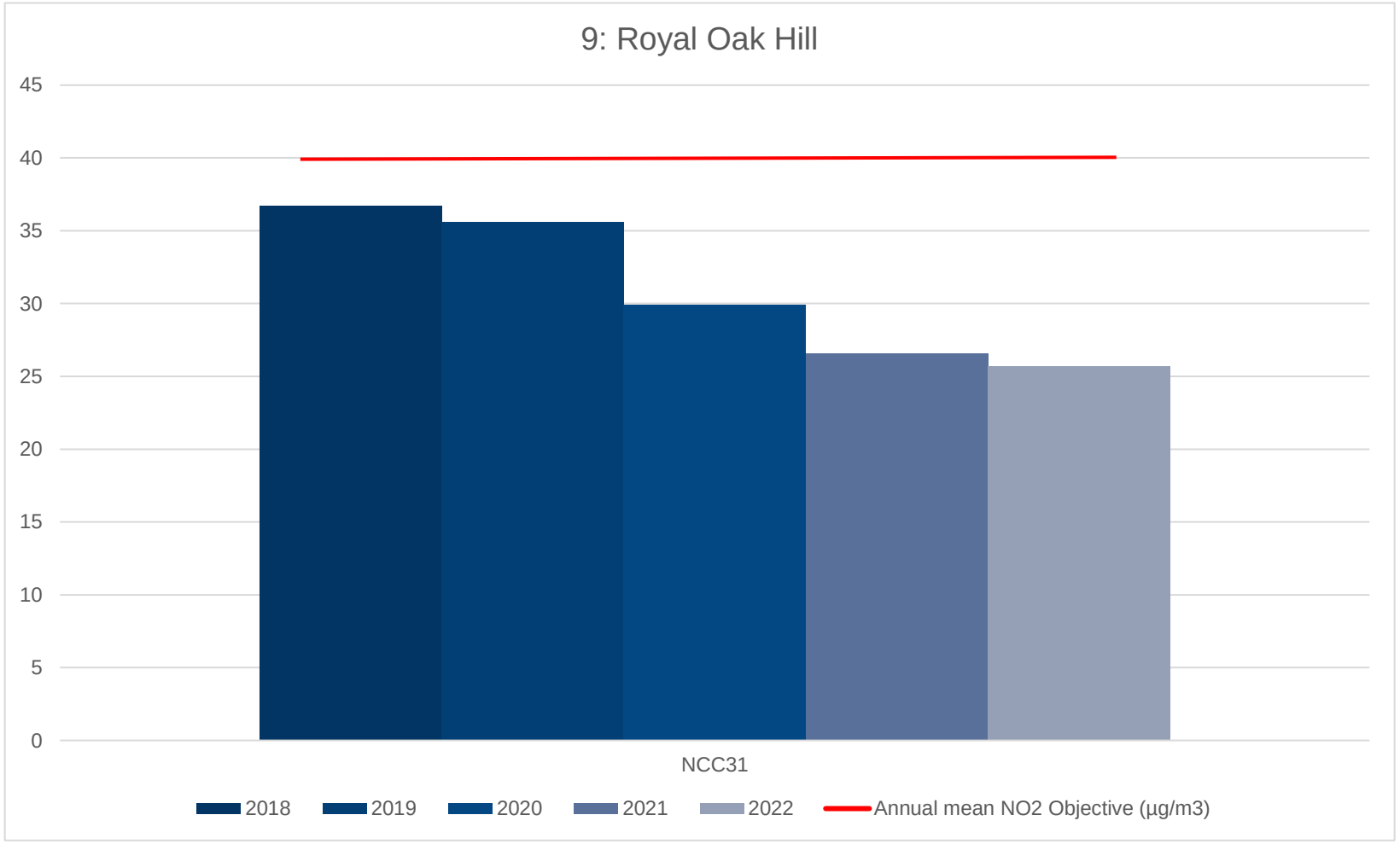


Figure 2.12 – Trends in Annual Mean NO_2 (µg/m^3) (Shaftsbury AQMA)

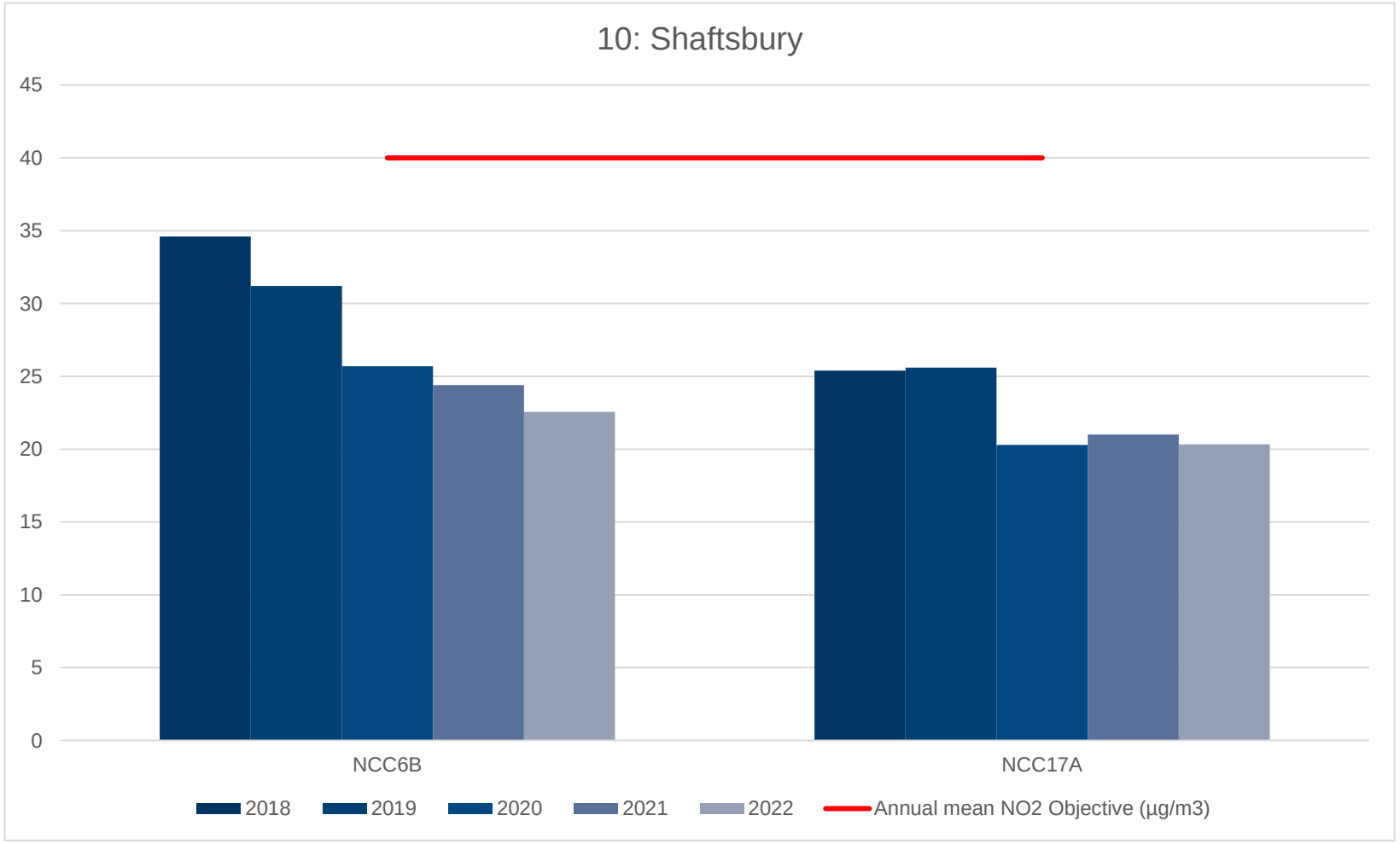


Figure 2.13 – Trends in Annual Mean NO_2 (µg/m^3) (St Julian's AQMA)

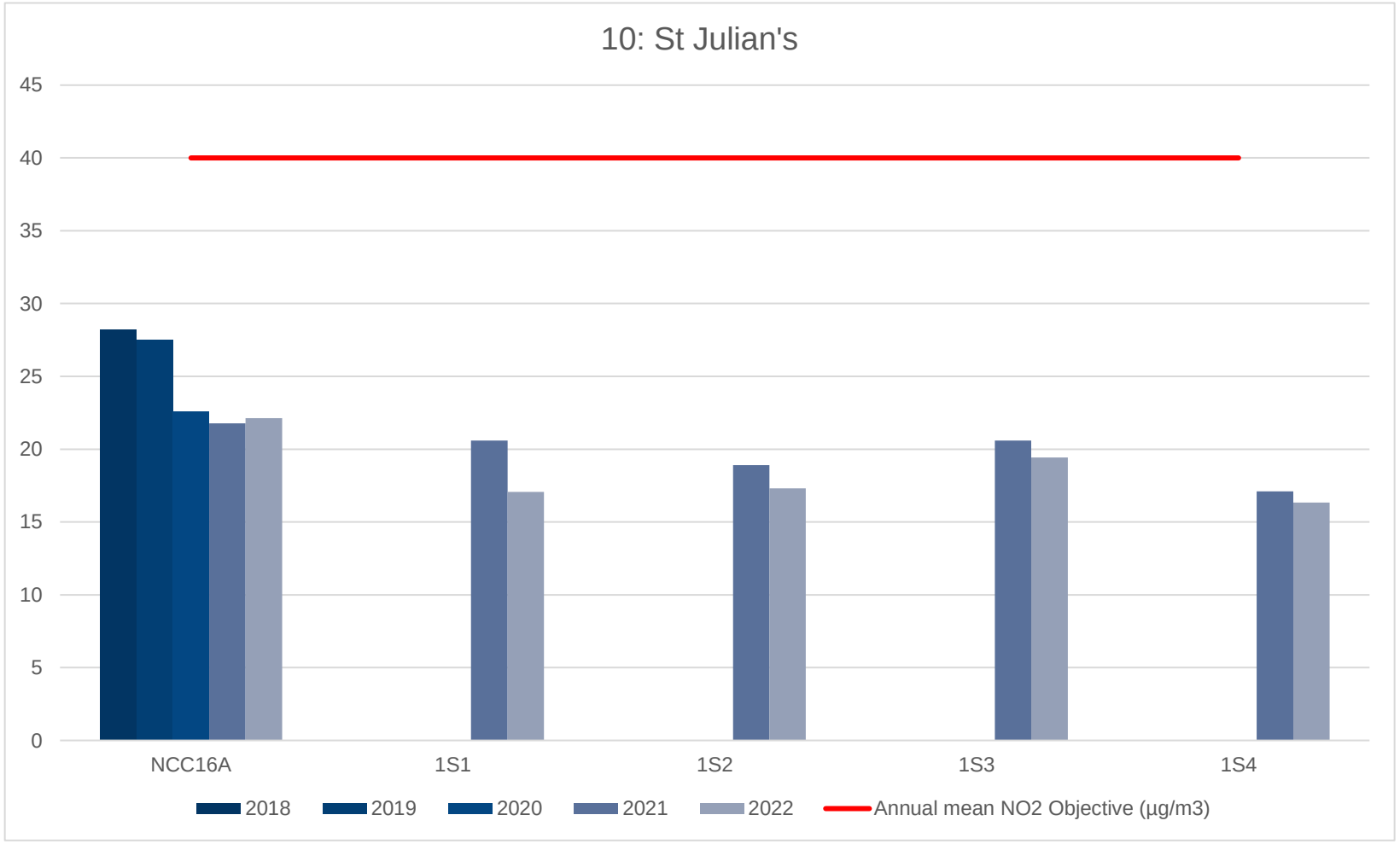


Table 2.4 – 1-Hour Mean NO_2 Monitoring Results, Number of 1-Hour Means > 200µg/m^3

Site ID	Site Type	Monitoring Type	Valid Data Capture for Monitoring Period (%) (1)	Valid Data Capture 2022 (%) (2)	2018	2019	2020	2021	2022
AN1	Urban Background	Automatic	61.9	61.9	0 (75)	0	0	0	0 (69.7)
AN2	Roadside	Automatic	70.2	70.2	1	0	0	0	0 (102)

Notes:

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 2022(%) (2)	2018	2019	2020	2021	2022
AN1	Urban Background	99.2	99.2	14	15	13	12	13

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%).

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)	2018	2019	2020	2021	2022
AN1	Urban Background	99.2	99.2	0	5	0	0	0

Notes:

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 2022 (%) (2)	2018	2019	2020	2021	2022
AN1	Urban Background	99.2	99.2	8	10	8	7	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 2022 Monitoring Results with Previous Years and the Air Quality Objectives

Throughout 2022 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 90 diffusion tube locations.

Data capture across all sites was generally high throughout 2022. However, both automatic monitors (AN1/AN2) experienced data loss (<75%). There were minimal instances of data loss at diffusion tube sites, with no sites requiring an annualisation factor to be applied. Annualisation factors were applied to both automatic monitors.

Overall, a decrease in nitrogen dioxide concentrations was recorded at Newport's diffusion tube monitors between 2021 and 2022, with an average decrease of 2.3% (2.8% at AQMA sites). However, due to the atypical nature of the years, comparisons to 2020 and 2021 data do not provide robust evidence of long-term trends. Beyond this, concentrations at all diffusion tube sites were 21% lower than the most recent 'typical' year (2019).

No exceedances of the annual mean AQS NO_2 objective of 40 µg/m^3 were measured at in 2022.

Neither automatic monitor (AN1/AN2) recorded a single exceedance of the 200 µg/m^3 hourly mean air quality objective value in 2022 (18 are permitted per year). The last measured exceedance of the annual mean 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, 2022).

2.1.4 Particulate Matter (PM_{10})

PM_{10} concentrations are measured at the AN1 automatic monitor. The monitor was active throughout 2022 and recorded 99.2% data capture.

Annual mean concentrations of PM_{10} have remained stable since 2018, ranging between 12 and 15 µg/m^3. There has been a minor increase in PM_{10} concentrations between 2021 and 2022 (8.3%), however, both 2021 and 2020 PM_{10} concentrations are expected to be lower due to the influence of the Covid-19 pandemic.

There were no recorded exceedances of the 24-hour mean objective value (50 µg/m^3) in 2022. There is no clear trend in the number of exceedances of the objective between 2016 and 2022; 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 2022. Annual mean concentrations have ranged from 7 to 10 µg/m^3 between 2018 and 2022; below 50% of the annual mean objective (25 µg/m^3). Concentrations of $PM_{2.5}$ have remained broadly consistent since 2016.

2.1.6 Summary of Compliance with AQS Objectives as of 2022

In 2022 neither automatic monitor (AN1/AN2) measured an exceedance on the annual or 1-hour mean NO_2 objectives. Additionally, no exceedances were measured at any of the diffusion tubes.

For $PM_{10,}$ the automatic monitor AN1 measured no exceedances of the annual or 24-hour mean objectives in 2022. The annual mean concentration of $PM_{2.5}$ was also below the annual mean objective in 2022.

3 New Local Developments

The following section outlines the new Local developments in Newport for 2022 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 2022.

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 2022.

Other Sources

Bonfire night

Bonfire Night (5 November) 2022 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 (5th and 6th November) were 133% greater than the annual mean for 2022. Fireworks are worthy of further inquiry during 2023 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.

Climate Change Plan

In 2021 Newport Council declared an Ecological and Climate Emergency and have since adopted the Organisational Climate Change Plan (Newport City Council, 2022). The Plan sets out the themes, priorities, actions and milestones that the Council will take over the next five years to reach net zero as an organisation by 2030, and how they will review the services they provide to ensure they support the journey to net zero and adaptation to climate change. Under Theme 4: Transport and Mobility, the Council have listed the following as priorities, which will also have a beneficial impact on air quality:

- Managing the transport network to enable people to travel in a more sustainable way;
- Ensure sustainable transport options are available from the outset in all new developments, including walking, cycling, public transport and electric charging infrastructure;
- Encourage the use of public transport instead of car usage;
- Increase charging capacity across the city; and
- Implement policies to support the move to a low emission taxi fleet.

5 Conclusion and Proposed Actions

Conclusions from New Monitoring Data

There was an overall 2.3% decrease (2.8% at AQMA sites) of NO_2 concentrations at Newport's diffusion tube sites since 2021, however, air quality data from 2021 is not considered representative reducing the effectiveness of this comparison. When compared with 2019, NO_2 concentrations were 21% lower at all sites. According to Defra's Technical Guidance (Defra, 2022), there should not be any declared AQMAs for which compliance has been achieved for a consecutive five-year period. Therefore, it would be reasonable to consider the St Julian's, Royal Oak Hill, High Cross, Glasllwch and Shaftsbury AQMAs for revocation in 2023.

PM_{10} concentrations increased marginally at Newport's AN1 monitor between 2021 and 2022 (8.3% increase), however, both 2020 and 2021 concentrations were heavily influenced by the Covid-19 pandemic, which acted to supress concentrations. When compared with the latest monitoring year not influenced by the Covid-19 pandemic (2019), 2022 PM_{10} concentrations have decreased by 13%. There were no exceedances of either the annual mean or the 24hr mean PM_{10} objective (35 permitted a year).

Proposed Actions

The St Julian's, Royal Oak Hill, High Cross, Glasllwch and Shaftsbury AQMAs should be considered for revocation based on their 2022 concentrations and ongoing compliances. (as per table 5.1 below):

Table 5.1 – AQMA Compliance history warranting revocation.

AQMA	2022	2021	2019	2018
St Julians (NCC16A)	22.1	21.8	27.5	28.2
Glasllwch (NCC18C)	19.8	20.9	27.8	39.5
High Cross (NCC2C)	27.8	28.3	35.8	36.2
Royal Oak (NCC31)	25.7	26.6	35.6	36.7
Shaftsbury (NCC6B)	22.6	24.4	31.2	34.6

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 (2022) *Review & Assessment: Technical Guidance LAQM.TG22 August 2022 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 A Quality Assurance / Quality Control (QA/QC) Data

Table A.1 – Full Monthly Diffusion Tube Results for 2022 (µg/m^3)

Site ID	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Raw Data	Bias Adjusted (0.76) and Annualised (1)	Distance Corrected to Nearest Exposure (2)
NCC1	36.6	27.6	37.5	31.6	25.5	23.2	24.4	26.4	29.3	29.4	38.9	38.3	30.8	23.4	13.5
NCC2C	43.9	missing	37.9	33.8	37.3	29.0	29.5	30.4	33.3	37.9	49.9	40.8	36.6	27.8	27.8
NCC3A	23.8	16.6	22.4	missing	13.0	11.8	13.4	13.4	14.8	17.6	24.6	24.3	17.8	13.6	13.6
NCC4B	42.7	33.2	40.6	32.4	32.2	29.0	28.7	34.3	33.9	28.2	39.5	37.0	34.1	25.9	25.0
NCC5	51.6	36.0	37.6	33.3	27.6	26.6	30.0	30.1	33.9	30.5	45.9	40.3	35.0	26.6	17.7
NCC6B	40.3	33.5	29.7	28.9	31.8	26.0	27.4	28.3	30.8	29.2	23.2	30.2	29.7	22.6	22.5
NCC7B	32.8	28.3	36.5	27.1	23.8	21.6	22.7	23.2	25.4	33.4	38.6	35.1	29.1	22.1	21.3
NCC8	42.9	29.8	43.2	37.1	32.8	32.1	34.3	39.7	34.6	33.5	26.0	38.4	35.6	27.1	26.1
NCC9D	48.2	25.0	41.0	31.3	30.9	26.0	missing	29.1	31.0	35.4	44.0	38.9	34.9	26.5	14.9
NCC11A	43.1	32.0	36.6	32.0	28.3	27.3	28.3	31.0	31.9	30.5	38.7	40.2	33.3	25.3	24.6
NCC12A	44.9	33.2	41.7	35.0	43.1	32.3	33.6	31.6	32.9	42.7	59.7	43.8	39.7	30.2	30.2

NCC13A	47.1	37.4	39.6	31.2	33.7	30.1	30.0	31.6	30.5	34.1	42.5	36.3	35.1	26.7	21.6
NCC14A	41.2	30.2	49.9	39.6	27.2	28.0	31.2	40.0	40.0	36.4	43.4	44.3	37.9	28.8	28.7
NCC15	36.0	26.8	26.3	25.7	25.8	22.1	26.6	26.7	28.1	25.3	30.5	29.5	27.3	20.8	9.7
NCC16A	34.2	25.1	41.8	26.1	21.2	19.7	20.9	28.8	29.0	28.2	38.2	35.9	29.1	22.1	18.5
NCC17A	32.5	24.9	34.1	23.5	21.3	20.0	22.7	22.9	21.5	30.4	37.2	29.9	26.8	20.3	20.3
NCC18C	24.9	28.5	25.2	20.9	23.8	21.2	21.5	19.3	25.9	32.0	39.3	31.0	26.0	19.8	19.8
NCC19A	51.1	39.5	39.7	34.0	23.7	28.5	28.9	33.7	35.4	35.4	45.1	34.2	35.4	26.9	19.8
NCC20C	48.4	41.4	37.0	33.9	37.5	32.7	36.6	32.7	42.0	46.2	56.2	44.3	40.5	30.8	22.6
NCC21D	45.9	48.7	44.1	41.1	43.8	36.8	40.7	36.5	38.6	47.8	63.5	48.3	44.4	33.7	12.3
NCC23E	53.1	47.4	45.4	42.1	37.3	38.5	40.0	32.1	39.3	51.0	60.8	47.9	44.4	33.8	12.3
NCC24C	44.6	35.0	37.2	33.9	33.3	27.7	35.4	40.0	39.5	40.4	49.2	41.4	38.1	28.9	28.9
NCC25C	40.6	30.4	44.6	39.8	32.8	30.8	37.5	40.1	36.9	30.4	39.4	38.0	36.9	28.0	28.0
NCC26B	49.3	anomalous	52.2	46.6	39.6	37.4	41.9	50.6	40.9	35.6	46.2	45.2	43.9	33.4	32.0

NCC27 B	45.2	33.9	50.6	43.1	33.6	32.1	38.0	38.3	38.9	34.8	47.2	40.4	39.7	30.2	28.8
NCC28 B	missing	missing	39.4	32.1	33.5	29.8	30.1	32.6	31.6	33.9	43.8	41.2	34.8	26.4	24.4
NCC29 C	55.3	missing	40.2	39.1	*	64.0*	39.5	38.9	38.5	38.6	54.7	52.0	47.8	37.5	37.5
NCC30 B	38.9	30.5	33.4	28.2	28.1	23.9	26.1	25.6	26.9	30.6	missing	missing	29.0	22.1	18.0
NCC31	41.1	31.6	37.4	36.9	30.5	28.9	27.9	40.0	30.4	28.1	34.6	37.4	33.8	25.7	25.7
NCC32 E	35.3	27.8	34.5	29.5	25.2	22.2	23.1	24.5	26.7	30.3	missing	40.2	29.2	22.2	21.9
NCC33 B	45.6	34.7	44.2	39.9	39.0	33.8	38.4	40.7	43.8	46.1	59.7	51.4	43.4	33.0	33.0
NCC34 A	28.7	26.0	24.7	18.0	26.4	22.7	25.4	20.2	22.4	27.1	36.2	29.8	25.5	19.4	19.4
NCC35 A	39.5	33.3	28.3	26.0	29.6	26.9	28.9	23.7	25.6	31.0	33.5	missing	29.4	22.3	18.4
NCC36 A	35.4	30.3	24.7	21.9	26.6	anomalous	23.4	19.8	20.3	26.8	33.5	29.3	26.3	20.0	14.8
NCC37	20.1	15.5	24.2	17.1	12.4	13.5	13.4	17.2	17.6	17.0	23.2	No access	17.4	13.2	13.2
NCC38	21.4	15.4	26.5	17.2	13.3	12.9	13.3	16.9	17.4	17.5	24.8	No access	17.8	13.6	13.6
NCC39	20.7	14.7	24.5	18.0	13.3	13.0	13.3	16.5	15.8	17.2	23.5	No access	17.4	13.2	13.2

NCC40B	33.7	32.1	43.1	36.2	35.3	25.1	28.0	31.9	32.5	33.2	43.3	41.7	34.7	26.4	26.2
NCC41B	29.6	missing	41.3	31.9	20.5	22.8	25.1	37.1	27.5	23.5	31.0	31.3	29.1	22.1	22.1
NCC42	45.6	32.2	34.6	27.6	29.0	26.6	28.2	n/a	28.4	33.8	43.6	38.8	33.4	25.4	26.5
NCC43A	41.3	31.1	28.7	29.6	31.8	27.4	29.2	27.0	27.4	30.6	anomalous	33.3	30.6	23.3	23.4
NCC44B	40.1	20.2	36.6	25.3	25.3	22.8	24.8	25.4	30.5	29.8	36.1	35.6	29.6	22.5	22.5
NCC45B	39.8	30.9	42.6	33.9	23.8	25.8	26.0	30.2	missing	30.7	38.7	38.2	32.8	24.9	24.8
NCC46B	58.6	48.2	43.7	39.8	45.7	38.6	41.1	35.2	44.5	54.0	59.6	51.1	46.5	35.3	35.4
NCC47A	39.2	29.2	40.1	34.5	31.4	28.5	34.3	36.4	34.5	33.6	37.7	36.6	34.8	26.4	26.3
NCC48D	57.8	40.0	45.5	38.8	45.8	39.8	42.6	37.5	42.7	43.2	54.1	46.8	44.5	33.8	34.1
NCC49C	34.8	32.1	41.3	32.2	23.6	22.2	25.6	32.5	30.4	29.5	34.7	32.0	30.7	23.3	21.9
NCC50	50.6	40.1	46.8	40.7	39.2	34.5	27.3	31.0	29.4	32.7	41.1	38.4	37.5	28.5	24.7
NCC51	48.2	38.8	46.9	34.7	38.4	40.2	41.0	37.2	40.6	46.9	56.6	48.6	43.3	32.9	32.9
NCC52	31.7	missing	24.1	22.1	19.0	17.9	19.8	31.0	22.4	21.3	27.6	29.6	24.2	18.4	14.4
NCC53	25.3	17.5	26.4	19.1	15.8	14.3	16.1	17.7	18.3	17.6	25.9	25.9	20.0	15.2	15.2
NCC54	17.6	12.3	13.3	9.5	8.5	7.3	9.8	7.6	8.0	12.1	16.2	2.6	10.1	7.7	7.7

NCC55	17.4	missing	15.4	10.5	8.8	7.7	9.8	9.0	9.2	13.0	18.8	20.0	12.7	9.7	9.7
NCC57	35.9	30.6	42.2	33.1	25	24.1	51.8**	32.1	29.8	30.7	37.3	42	33.1	25.1	25.1
NCC58	41.7	35.6	52.5	42.2	32.3	30.7	63.3**	36.9	38.5	44.8	48.7	44.4	40.9	31.1	31.1
NCC59	33.9	25.5	32.2	27.0	25.4	24.6	25.0	n/a	24.4	27.6	34.4	31.5	28.4	21.6	21.6
NCC60	39.9	29.5	36.0	29.5	26.1	24.5	25.7	28.5	29.6	31.6	40.9	38.8	31.7	24.1	27.8
NCC62	47.4	missing	39.2	33.4	31.6	26.8	28.4	32.1	34.8	33.4	44.1	41.4	35.5	33.6	17.3
NCC63	35.7	25.1	28.4	24.5	22.6	18.7	21.6	24.4	23.5	21.9	29.5	29.0	25.3	27.0	19.2
NCC64	42.6	32.1	55.0	missing	30.3	30.1	missing	43.3	39.9	37.1	40.5	43.6	39.6	19.2	30.1
NCC65	48.3	37.1	46.2	41.1	missing	32.8	35.0	40.1	38.1	37.1	46.8	45.1	40.7	30.1	31.1
NCC66	40.6	31.5	43.4	35.0	28.4	25.6	60.2***	n/a	34.2	32.2	40.2	34.4	38.7	29.4	29.3
NCC67	40.8	34.4	31.5	27.5	33.9	26.7	27.9	26.3	30.2	29.3	41.2	22.1	30.5	23.1	23.1
NCC68	36.8	29.1	36.3	29.0	23.5	24.5	24.9	26.1	missing	missing	42.9	36.2	30.9	23.5	20.3
NCC69	38.1	26.1	29.8	23.0	23.9	21.6	23.6	23.3	missing	28.6	37.2	34.8	28.1	21.4	21.3
NCC70	47.4	missing	40.7	34.1	32.1	anomalous	33.8	30.9	36.6	39.5	missing	38.0	37.0	28.1	28.1
NCC71A	54.6	40.4	49.8	33.2	29.9	27.4	32.1	32.6	37.3	44.8	42.7	42.7	38.7	29.4	29.4
NCC72A	47.6	36.3	43.5	35.0	anomalous	28.8	31.8	35.4	37.4	34.0	46.2	42.7	37.9	28.8	28.8
NCC74	27.9	22.5	29.3	23.1	11.6	18.0	22.0	23.6	23.7	23.8	31.5	28.4	23.8	18.1	15.4

NCC75	23.3	13.9	21.1	13.2	11.2	10.3	12.0	11.7	14.2	15.7	23.6	22.3	16.1	12.2	12.2
NCC77	27.5	20.2	34.9	20.7	17.1	17.5	19.3	20.3	22.0	24.9	33.5	33.8	24.5	18.6	18.6
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	30.1	24.1
NCC79	23.9	21.4	29.2	29.9	23.7	23.5	24.6	28.4	26.5	21.9	29.0	27.2	25.9	19.7	19.7
NCC80	54.2	40.6	48.4	38.8	42.2	38.1	45.0	38.5	41.4	45.0	54.0	44.8	44.2	33.6	33.2
NCC81	51.3	missing	36.9	missing	38.1	31.1	29.0	27.3	33.9	40.8	52.6	41.4	38.2	29.0	29.1
NCC82	27.9	missing	37.7	27.3	18.5	17.1	21.5	24.0	25.1	26.0	32.8	34.7	26.6	20.5	20.2
NCC83	22.2	missing	20.5	missing	16.2	9.4	12.3	13.0	14.9	15.8	22.3	24.0	17.0	12.9	12.0
1S1	28.9	missing	29.9	23.0	16.1	17.1	19.4	22.4	21.0	23.3	14.8	30.1	22.5	17.1	17.1
1S2	29.9	20.8	33.4	21.1	17.6	14.9	14.7	21.6	20.2	21.1	27.7	30.1	22.8	17.3	7.6
1S3	31.3	23.1	37.5	24.6	13.2	17.5	20.0	23.6	24.1	25.2	33.3	32.8	25.6	19.4	8.8
1S4	26.1	17.8	27.1	17.8	36.4	12.8	14.0	17.8	18.1	18.6	25.7	26.4	21.5	16.3	16.3

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.

* NCC29C had a two-month exposure between May-June

** Tubes were over-exposed in July, and were received by SOCOTEC in August, July has therefore been excluded from the annual mean.

*** NCC66 had a two-month exposure between July and August

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 has 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 2022 Diffusion Tube Monitoring Calendar.

Diffusion Tube Annualisation

No annualisation was required at any of the diffusion tubes in 2022.

Diffusion Tube Bias Adjustment Factors

Newport City Council have applied a national bias adjustment factor of 0.76 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 2022 the local bias-adjustment factor has been disregarded and the national factor applied. The result of local bias-adjustment (not used) is presented in Table C.2. The national bias adjustment spreadsheet (version 03/23) is 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
2022	0.76	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									
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
1	19/01/2022	16/02/2022	20.1	21.4	20.7	21	0.7	3	1.6
2	16/02/2022	02/03/2022	15.5	15.4	14.7	15	0.4	3	1.1
3	02/03/2022	30/03/2022	24.2	26.5	24.5	25	1.3	5	3.1
4	30/03/2022	04/05/2022	17.1	17.2	18.0	17	0.5	3	1.2
5	04/05/2022	01/06/2022	12.4	13.3	13.3	13	0.5	4	1.3
6	01/06/2022	06/07/2022	13.5	12.9	13.0	13	0.3	2	0.8
7	06/07/2022	03/08/2022	13.4	13.3	13.3	13	0.1	0	0.1
8	03/08/2022	02/09/2022	17.2	16.9	16.5	17	0.4	2	0.9
9	02/09/2022	28/09/2022	17.6	17.4	15.8	17	1.0	6	2.5
10	28/09/2022	02/11/2022	17.0	17.5	17.2	17	0.3	1	0.6
11	02/11/2022	30/11/2022	23.2	24.8	23.5	24	0.9	4	2.1
12	30/11/2022	04/01/2023							
13									

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

Automatic Method		Data Quality Check	
Period Mean	Data Capture (% DC)	Tubes Precision Check	Automatic Monitor Data
36.2637	17.6820208	Good	or Data Capture
	0	Good	or Data Capture
	0	Good	or Data Capture
	0	Good	or Data Capture
10	81.547619	Good	Good
10	99.8809524	Good	Good
10	99.4047619	Good	Good
12	99.7222222	Good	Good
13	99.6794872	Good	Good
12	100	Good	Good
17.7195	100	Good	Good
21.4103	92.8571429		Good
Overall survey -->		Good precision	Poor Overall DC

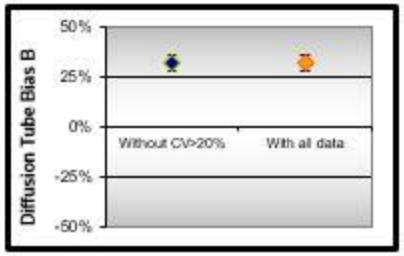
(Check average CV & DC from Accuracy calculations)

Site Name/ ID:

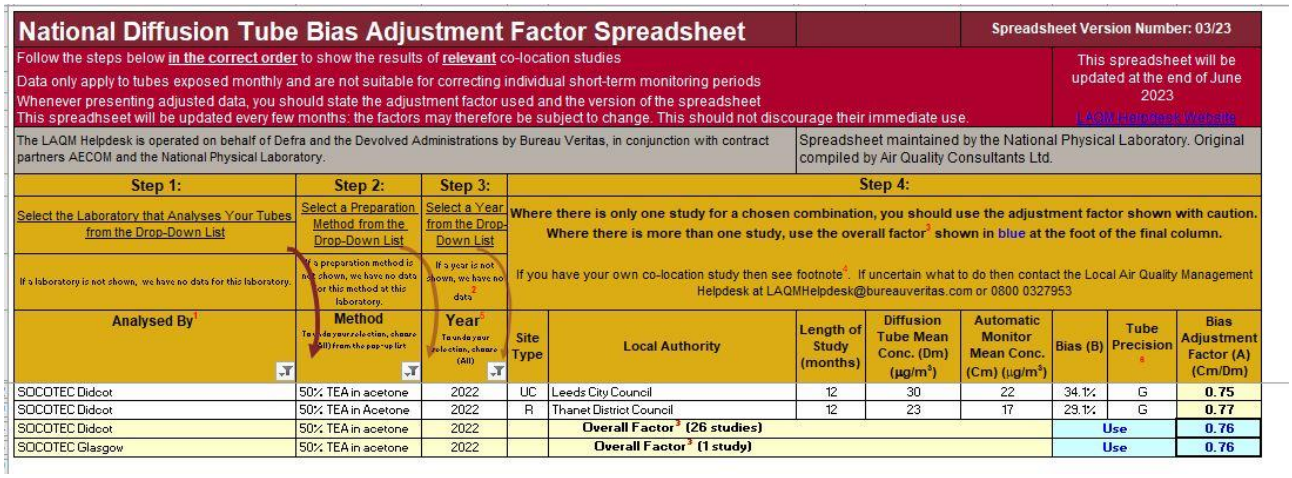
Precision: 11 out of 11 periods have a CV smaller than 20%

Accuracy (with 95% confidence interval) without periods with CV larger than 20%	
Bias calculated using 7 periods of data	
Bias factor A	0.75 (0.73 - 0.78)
Bias B	32% (28% - 37%)
Diffusion Tubes Mean:	16 μgm^{-3}
Mean CV (Precision):	3
Automatic Mean:	12 μgm^{-3}
Data Capture for periods used:	97%
Adjusted Tubes Mean:	12 (12 - 13) μgm^{-3}

Accuracy (with 95% confidence interval) WITH ALL DATA	
Bias calculated using 7 periods of data	
Bias factor A	0.75 (0.73 - 0.78)
Bias B	32% (28% - 37%)
Diffusion Tubes Mean:	16 μgm^{-3}
Mean CV (Precision):	3
Automatic Mean:	12 μgm^{-3}
Data Capture for periods used:	97%
Adjusted Tubes Mean:	12 (12 - 13) μgm^{-3}



Jaume Targa, for AEA
Version 04 - February 2011



National Diffusion Tube Bias Adjustment Factor Spreadsheet — Spreadsheet Version Number: 03/23

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 June 2023

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 view your selection, choose (All) from the pop-up list)	Year[2] (To view 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[5]	Bias Adjustment Factor (A) (Cm/Dm)
SOCOTEC Didcot	50% TEA in acetone	2022	UC	Leeds City Council	12	30	22	34.1%	G	0.75
SOCOTEC Didcot	50% TEA in Acetone	2022	R	Thanet District Council	12	23	17	29.1%	G	0.77
SOCOTEC Didcot	50% TEA in acetone	2022		Overall Factor[3] (26 studies)				Use		0.76
SOCOTEC Glasgow	50% TEA in acetone	2022		Overall Factor[3] (1 study)				Use		0.76

QA/QC of Automatic Monitoring

Data from the automatic monitors presented within this APR have been ratified. Ratification involves a detailed manual check of the data, which is carried out on a quarterly basis for the AURN, and a six-monthly basis for non-AURN stations in Wales. Live and historic data are available from https://airquality.gov.wales/. The NCC Air Quality Officer undertakes Local Site Operator duties which includes monthly calibration of the AURN analyser; changing of monitoring media for benzene and PAH every two weeks.

NO_2 Monitoring Adjustment

Automatic monitoring took place across the whole year, however, significant data loss was experienced for both monitors. The automatic monitor AN1 experienced a period of complete data loss between 24/01/22-16/05/22. The automatic monitor AN2 experienced a period of complete data loss between 03/06/22-17/10/22.

The NO_2 automatic monitoring data from both AN1 and AN2 have therefore been annualised following the process set out in Box 7-9 of LAQM.TG22, using annualisation factors calculated from three nearby automatic monitor background sites with good data capture: Cardiff Centre, Cwmbran Crownbridge and Bristol St Paul's. The annualisation factors for AN1 and AN2 are 1.016 and 0.839 respectively.

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.

Appendix D AQMA Boundary Maps

Figure D.1 – Glasllwch AQMA

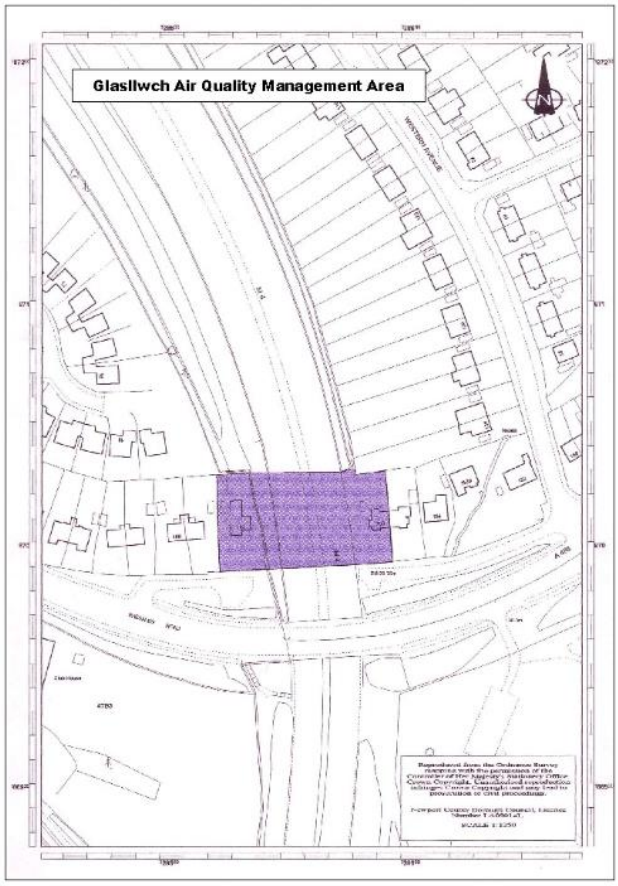


Figure D.2 – Shaftesbury AQMA

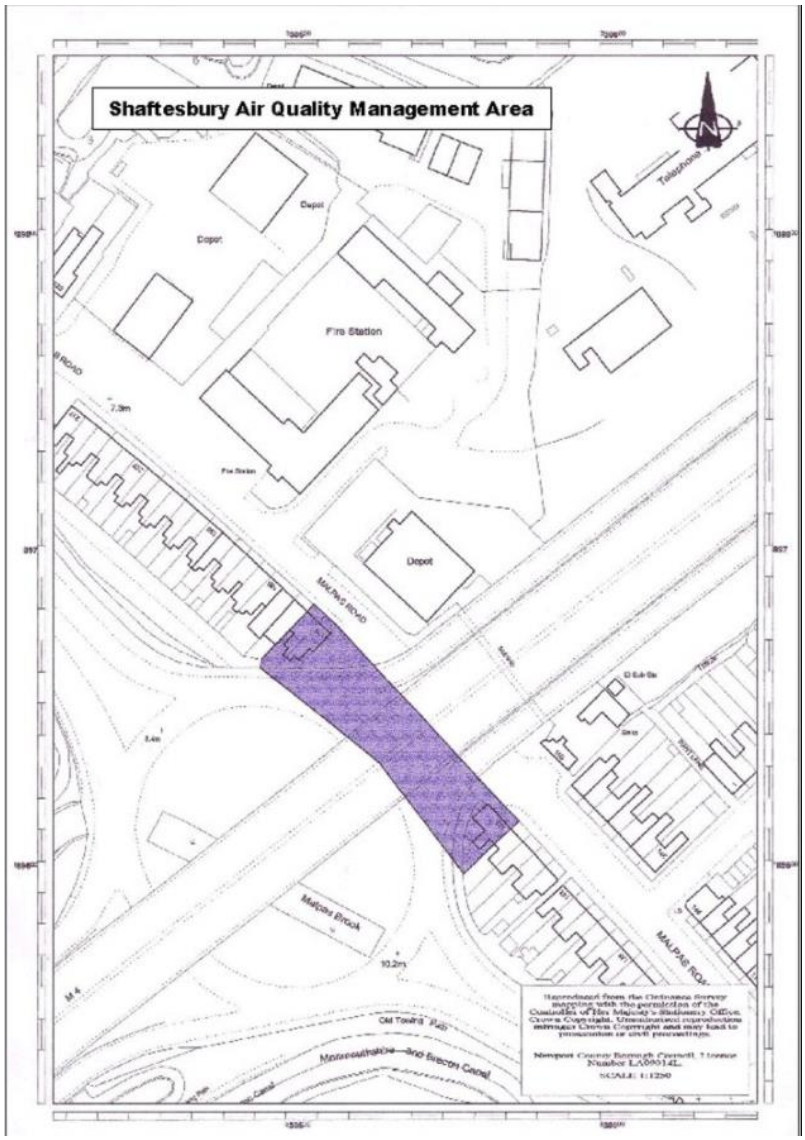


Figure D.3 – St Julian's AQMA

Figure D.4 – Malpas Road AQMA

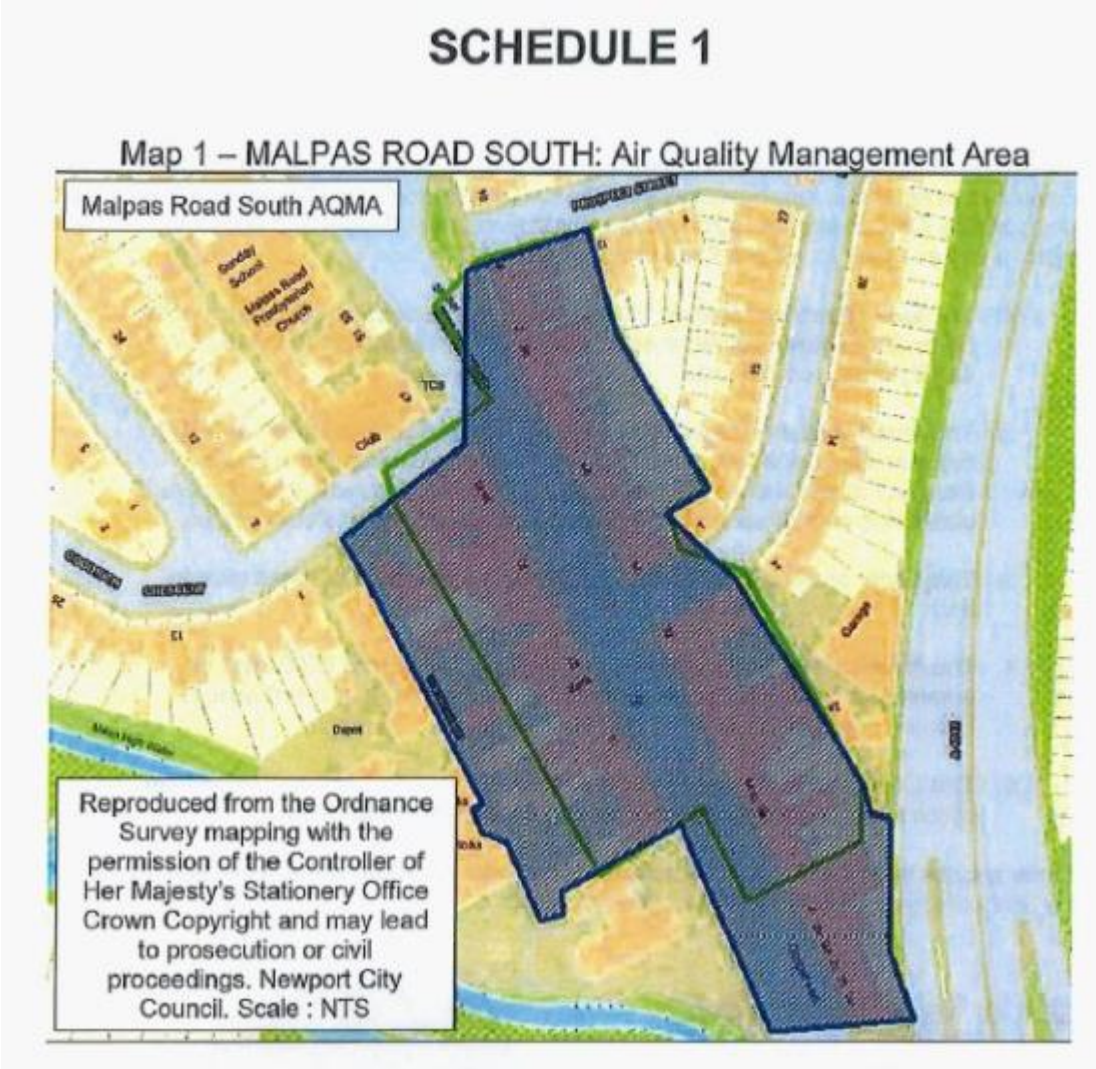


Figure D.5 – Chepstow Road/Caerleon Road (Chepstow) AQMA

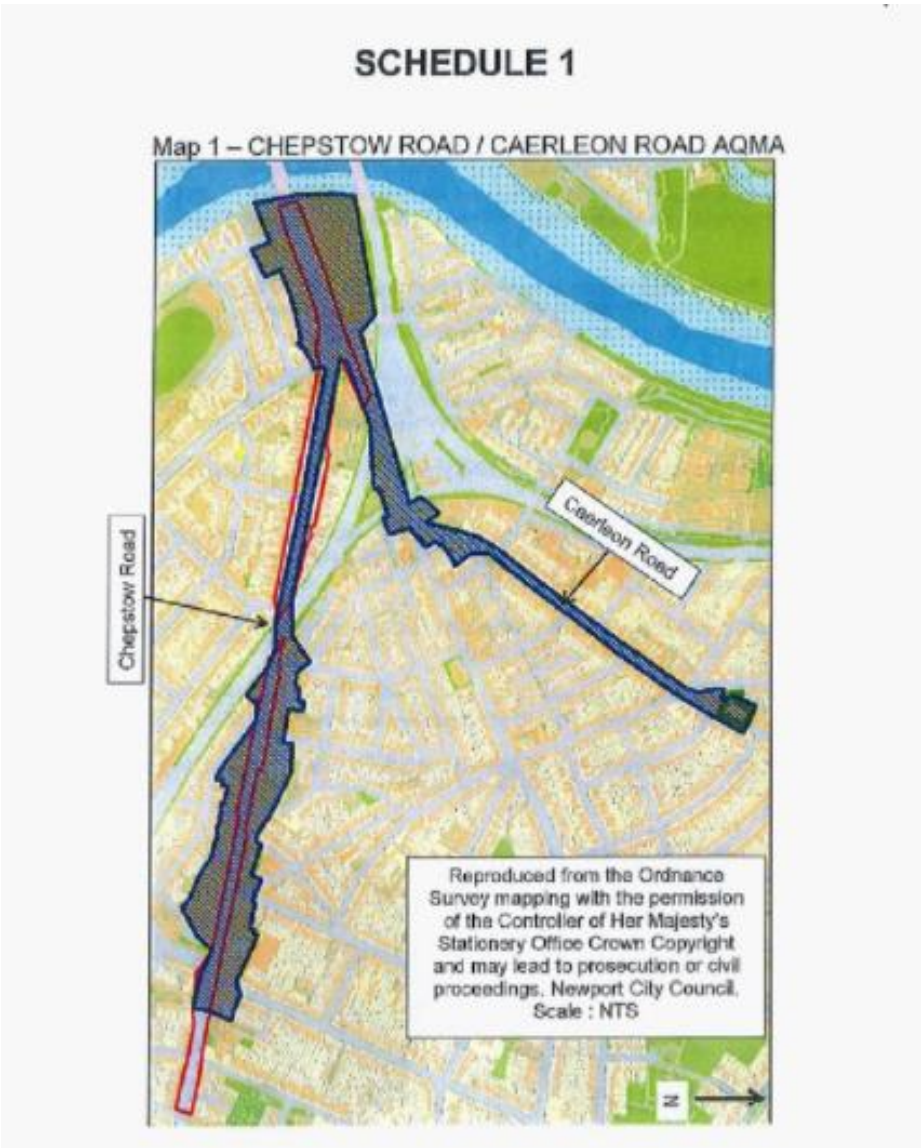


Figure D.6 – Royal Oak Hill AQMA

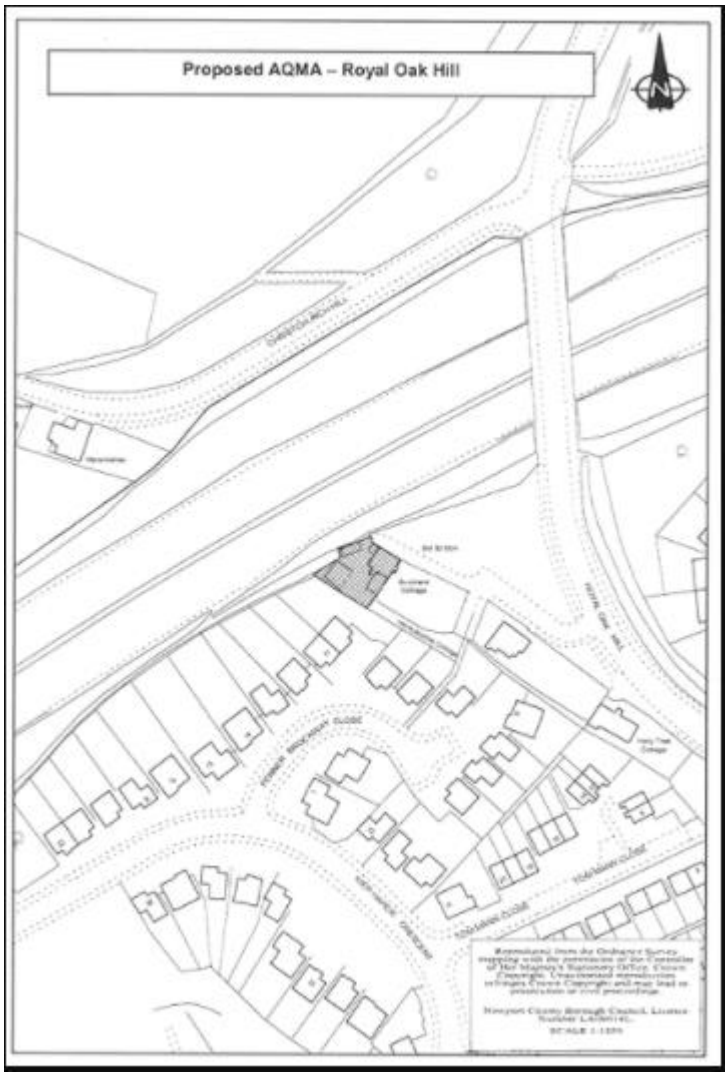


Figure D.7 – Caerleon High Street AQMA

Figure D.8 – George Street AQMA

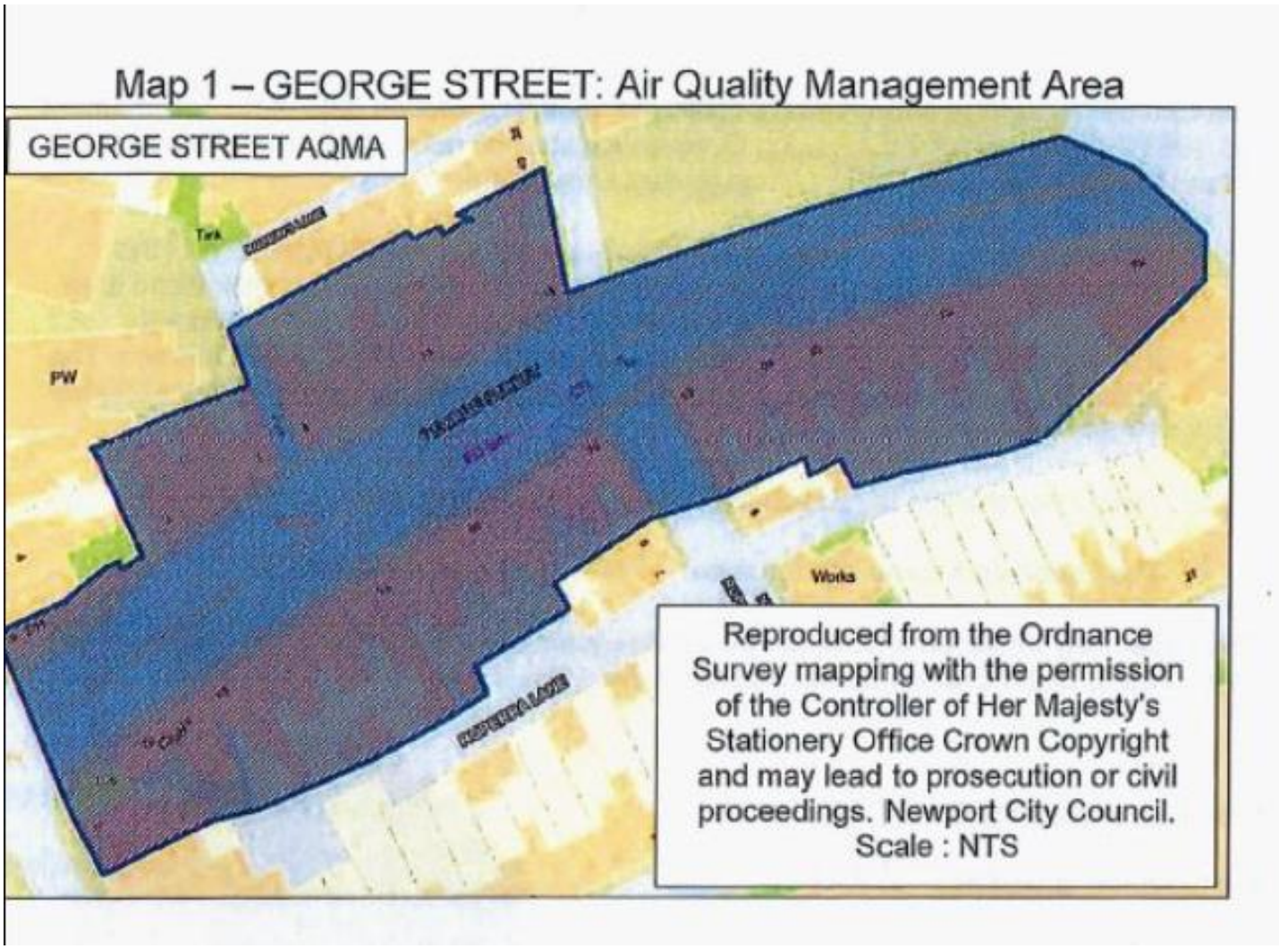


Figure D.9 – High Cross AQMA

Figure D.10 – Cefn Road AQMA

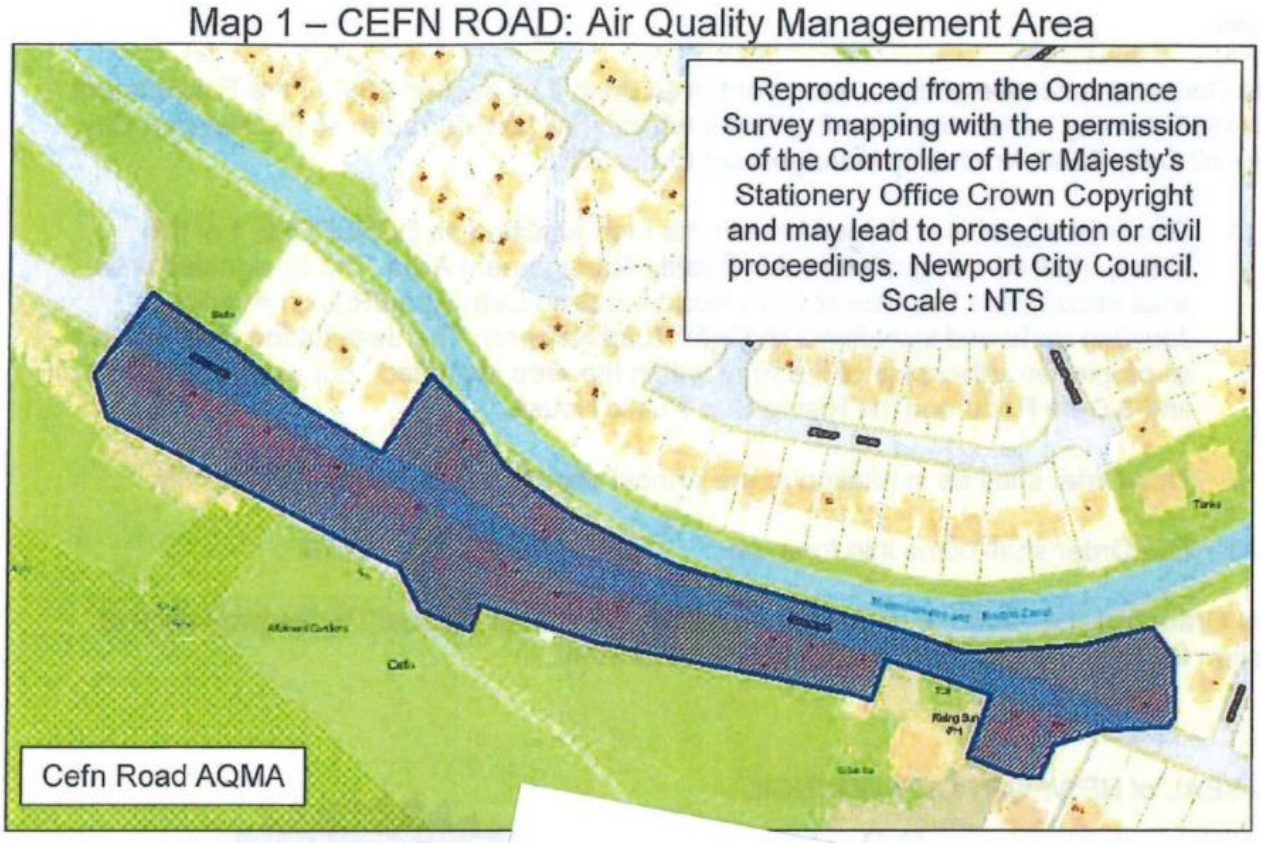


Figure D.11 – Caerphilly Road AQMA

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
SO_2	Sulphur Dioxide
STS	Sustainable Transport Strategy

WG	Welsh Government