Monmouthshire County Council

2024 Air Quality Progress Report

In fulfilment of Part IV of the Environment Act 1995, as amended by the Environment Act 2021

Local Air Quality Management

Date: September 2024

Information	Monmouthshire County Council
Local Authority Officer	Paul White
Department	Environmental Health
Address	County Hall The Rhadyr Usk Monmouthshire NP15 1GA
Telephone	01873 735420
E-mail	environmentalhealth@monmouthshire.gov.uk
Report Reference Number	MCC/LAQM/APR/2024
Date	27 September 2024

Executive Summary: Air Quality in Our Area

Air Quality in Monmouthshire

This 2024 Annual Progress Report (APR) presents the results of the air quality monitoring undertaken by Monmouthshire County Council in 2023. Previous reports (2011 to 2023) are available on the Councils website - http://www.monmouthshire.gov.uk/air-quality.

In 2023 monitoring was undertaken at a total of 45 locations: -

- 47 nitrogen dioxide diffusion tubes were located at 45 roadside locations (one location was a triplicate co-location study with the air quality monitoring station) in Chepstow, Pwllmeyric, Usk, Woodside, Monmouth, and Abergavenny.
- 1 roadside Air Quality Monitoring Station (AQMS) that house three automatic analysers to monitor nitrogen dioxide, and particulate matter (both PM_{10} and $PM_{2.5}$) (on the pavement of the A48 in Chepstow).

Previously monitored locations that were discontinued when it became clear that the relevant air quality objective levels were not in danger of being exceeded include - Raglan, Caldicot, Undy and Magor.

Generally, air quality in Monmouthshire is good, and has been improving since 2012, however some hotspots of poorer air quality close to busy or congested roads remain. As such these roads are monitored closely for nitrogen dioxide, which is one of the main pollutants from vehicle emissions.

There has never been an exceedance of the nitrogen dioxide hourly objective level, the PM_{10} annual objective level, nor the PM_{10} 24-hour objective level (all measured by the automatic analyser). Whilst there are no $PM_{2.5}$ objectives included in regulations for the purpose of LAQM in Wales, we make consideration as to whether monitored $PM_{2.5}$ annual mean concentrations exceed either the 25µg/m^3 EU Limit Value or the 10µg/m^3 WHO Guideline. In 2023 neither the EU nor WHO value were exceeded (as measured by the automatic analyser).

However, nitrogen dioxide has exceeded its annual mean objective level of 40µg/m^3 in two locations in the past. These have both been declared Air Quality Management Areas (AQMA): -

- Bridge Street in Usk – declared 2005.
- Hardwick Hill (A48) in Chepstow – declared 2007.

Both AQMAs have Action Plans and Steering Groups set up to identify options for improving air quality, the Action Plans are available from the following websites:

http://www.monmouthshire.gov.uk/air-quality

https://uk-air.defra.gov.uk/aqma/local-authorities?la_id=403

Since 2012, air quality improved steadily most years (decrease in PM_{10}, $PM_{2.5}$ and NO_2 concentrations). Then in 2020 with the COVID pandemic and lockdowns there was a significant decrease in concentrations to the lowest they had ever been up until that date. In the last three years since concentrations have remained lower than those recorded in 2019 and in 2023 concentrations were comparable to those recorded in 2020.

In 2012 six locations exceeded the nitrogen dioxide annual mean objective level (two in Chepstow, one in Abergavenny and three in Usk). In 2015 only the Chepstow AQMA exceeded, and this remained the same until 2020 when no monitoring location exceeded any objective level, including the Chepstow AQMA.

This means that the Usk AQMA has not exceeded the nitrogen dioxide objective level for nine consecutive years, six of which have also been below 10% of the objective level (36µg/m^3), and the Chepstow AQMA has not exceeded for four years, three of which also below 10% of the objective level, (2020, 2022 and 2023) but only two consecutive years.

In 2022 and 2023 there were no nitrogen dioxide monitoring locations above 36µg/m^3 (this considers the 10% accuracy level of a nitrogen dioxide diffusion tube).

The below table provides a summary showing a comparison between 2012 and 2019, and then the further improvement and stabilisation after 2020.

	Nitrogen dioxide Diffusion Tubes (µg/m^3)		AQMS (Hardwick Hill) (µg/m^3)		
Year	Highest	Average	Nitrogen Dioxide	PM10	PM2.5
2012	60.3	37.1	39.1	19	17
2019	42.3	27.9	39	20	13
2020	31.6	19.2	26	17	9
2021	36	21.9	29	16	8
2022	33.9	21.7	28	18	9
2023	30.9	19.5	26	16	8

In 2023 the concentrations of all three pollutants monitored by the AQMS were all at their joint lowest annual average concentrations and, the highest nitrogen dioxide diffusion tube concentration (CH4) was its lowest to date by 0.7µg/m^3 (previous was 2020). The average of all 45 diffusion tubes in 2023 was only 0.3µg/m^3 higher than the lowest average (again 2020). However, in 2023 there was a diffusion tube location change. MM16 was removed due to problems with vandalism, and MM22 was installed due to a complaint about HGV idling. MM22's 2023 annual average was 7.3µg/m^3, whereas MM16's 2022 concentration was 20µm^3. This reduction in concentration due to the move had a slight impact on the 45-tube average of a 0.3µg/m^3 reduction (assuming MM16 would have recorded 20µg/m^3 in 2023).

Actions to Improve Air Quality

Actions to improve air quality include regular meetings of the steering groups set up to progress the action plan measures of the two Air Quality Management Areas. In addition, the council began an anti-idling campaign using signage designed by children in a school competition, and enforcement

officers regularly patrol hotspots (including schools) to educate and enforce where necessary. In addition, the council's Active Travel, and Passenger Transport departments are working to reduce dependence on car travel by integrating transport hubs and links with active travel networks, the planning authority and highways section liaise with Environmental Health and community groups to reduce the impact of new developments. There are two air quality steering groups for the AQMA's, and improvement plans for each town that all consider improvements to air quality, reduction in traffic, and overall betterment of health and lifestyle.

Local Priorities and Challenges

Priorities for the local authority in 2024 to improve air quality is to work with partners, including Welsh Government to progress the Chepstow Transport Study, progress the Usk Town Strategic Master Plan, and progress the anti-idling campaign.

How to Get Involved

Further information on air quality can be found at http://www.monmouthshire.gov.uk/air-quality

Table of Contents

Tables

Figures

1 Actions to Improve Air Quality

1.1 Previous Work in Relation to Air Quality

The conclusions of previous local action in relation to air quality is summarised below in chronological order. Each report can be found on Monmouthshire County Councils website.

Report Name	Date	Outcome
Updating and Screening Assessment (Round 2)	**June 2003**	**Detailed Assessment required for nitrogen dioxide at four roadside locations. Two in Monmouth, and one each in Usk and Chepstow**
Interim Detailed Assessment (9 months monitoring)	November 2004	AQMA required for Bridge Street in Usk. Chepstow and Monmouth monitoring results were marginal and AQMA's not declared
Detailed Assessment (12 months monitoring)	February 2005	AQMA for Usk confirmed. Chepstow and Monmouth did not require an AQMA
Progress Report	May 2005	Confirmed nitrogen dioxide exceedance in Usk. Elsewhere levels were below the objective levels for all pollutants although Hardwick Hill in Chepstow was close
AQMA declared for Bridge Street, Usk	November 2005	The location is shown in Figure 1.1.
Updating and Screening Assessment (Round 3)	March 2006	Exceedances of Nitrogen Dioxide level on Hardwick Hill, Chepstow. Decided to progress straight to declaration of an AQMA
AQMA declared for Hardwick Hill, Chepstow	April 2007	The location is shown in Figure 1.2
Further Assessment for Usk AQMA	April 2007	Confirmed the AQMA should be retained with no changes to the boundary
Further Assessment for Chepstow AQMA	May 2008	One exceedance of ten monitoring locations representing 8 residential properties. Rather than cycle between increasing and

		decreasing boundaries it was decided to keep the original AQMA boundary
Progress Report	November 2008	NO2 exceedances limited to the two AQMA's.
Updating and Screening Assessment (Round 4)	May 2009	Little changed in source emissions since 2006. A detailed Assessment was not necessary. Additional monitoring undertaken in Magor/Undy along the proposed route of the M4 relief road for 12 months to give a baseline
Usk Air Quality Action Plan	September 2009	Agreed by Welsh Assembly Government in November 2009. 14 proposed measures to improve air quality
Chepstow Action Plan Stakeholder Workshop Report	November 2009	Outcomes of two stakeholder workshops with residents
Progress Report	May 2010	Only the two AQMA's exceeded nitrogen dioxide objective levels. No Detailed Assessment required.
Hardwick Hill, Chepstow Origin & Destination Study	August 2010	Undertaken to support the Action Plan process
Progress Report	June 2011	Nitrogen dioxide is still the only pollutant that exceeds the objective level, and these exceedances are contained in the two declared AQMAs in Usk and Chepstow. It concluded that a Detailed Assessment for air quality within Monmouthshire was not necessary for any pollutant
Chepstow Air Quality Action Plan	August 2011	Accepted by the Welsh Government in September 2011 with 29 proposed measures for improving air quality
Updating and Screening Assessment (Round 5)	April 2012	Air quality within Monmouthshire continues to meet the relevant air quality objectives outside of the declared AQMAs however levels at Merthyr Road Abergavenny were close to the objective level. Within the AQMAs there are still exceedances of the nitrogen dioxide objective at Hardwick Hill, Chepstow and Bridge Street, Usk. A Detailed Assessment was not required; however, it was decided to

		increase monitoring on Merthyr Road from one to three locations. These were installed mid-2012. Further details below
Progress Report	April 2013	Nitrogen dioxide was still the only pollutant that exceeded the objective level. The two Air Quality Management Areas still exceeded. Nitrogen Dioxide levels across the County increased sharply in 2012, which lead to Wyebridge Street in Monmouth being close to the objective level, and Merthyr Road in Abergavenny slightly exceeding the objective level. A Detailed Assessment was not undertaken, as it was decided that the results of the 2013 monitoring would be required to ensure 2012 was not an unusually high year. To support this and in preparation for a potential Detailed Assessment for Merthyr Road, an additional three diffusion tubes were to be installed on Merthyr Road (to increase monitoring from one in 2011, to three in 2012, and six in 2013.
Progress Report	April 2014	Nitrogen dioxide was still the only pollutant that exceeded the objective level. The two Air Quality Management Areas still exceeded. Nitrogen dioxide levels were lower in 2013 than 2012 at all but one location and no location outside the two AQMA's exceeded the objective level. It was decided that a further 13 diffusion tubes were to be installed in Monmouth at the end of 2013 in preparation for the 2014 monitoring year. These were installed to support a more detailed assessment of nitrogen dioxide levels in the town centre and along the A40.
Monmouth Six Month Detailed Assessment	September 2014	The report provided a summary of monitoring data for the period January–July 2014 and indicated that the annual mean objective was likely to be met at all sites. However, an assessment of two Air Quality Models undertaken for developments under the planning process identified possible exceedances elsewhere in the town. It was decided to install further diffusion tubes at these locations in January 2015, and to liaise with Natural Resources Wales to install an automatic monitoring station for NO2 and PM10, PM2.5 on the pavement of Wyebridge Street.

Updating and Screening Assessment (Round 6)	April 2015	The two AQMA's continued to experience exceedances of the nitrogen dioxide annual mean at two locations in each town. Concentrations in 2014 were fairly similar to those recorded in 2013 (which had seen a decrease from 2012). There were no exceedances outside the AQMA's The full year's monitoring for Monmouth had confirmed the findings of the September 2014 six-month Detailed Assessment. The USA confirmed that further diffusion tube monitoring was being undertaken in 2015 in Monmouth, and that the NRW's MMF had also been installed in December 2014. There were no exceedances of nitrogen dioxide in Abergavenny, although two locations were close enough to warrant continued monitoring.
Progress Report 2016	April 2016	Nitrogen dioxide, PM10 and PM2.5 concentrations decreased at all locations (diffusion tube and automatic analysers). One location exceeded the nitrogen dioxide annual mean in the Chepstow AQMA, there were no other exceedances (including the Usk AQMA). This was the first year Usk did not have a location exceeding the objective level. NRW's MMF monitoring in Monmouth was also summarised. It did not identify exceedance at a relevant receptor.
Progress Report 2017	September 2017	This PR confirms that air quality within the Chepstow Air Quality Management Area (AQMA) continues to exceed the nitrogen dioxide annual mean objective level at one location, however for the second year all six monitoring locations the Usk AQMA were below the nitrogen dioxide annual mean objective level. There were no recorded exceedances in Monmouth or Abergavenny.
Annual Progress Report 2018	September 2018	Air Quality within the Chepstow AQMA continues to exceed the nitrogen dioxide annual mean objective level at one location. Third year with no exceedance in Usk AQMA. No exceedances elsewhere. Concentrations broadly similar to 2016. Additional monitoring undertaken in Woodside south of Usk AQMA.
Annual Progress Report 2019	September 2019	Air Quality within the Chepstow AQMA continues to exceed the nitrogen dioxide annual mean objective level at one location. Fourth year with no exceedance in Usk AQMA, and first year with

		concentrations under 36µg/m^3 (10% of objective level). No exceedances elsewhere. Generally, concentrations in all towns were the lowest ever recorded.
Annual Progress Report 2020	September 2020	Air Quality within the Chepstow AQMA continued to exceed the nitrogen dioxide annual mean objective level at one location. Fifth year with no exceedance in Usk AQMA, and second year with concentrations under 36µg/m^3 (10% of objective level). No exceedances elsewhere, and no PM10 or PM2.5 exceedances. Generally, concentrations in all towns were similar to the previous year but slightly higher.
Annual Progress Report 2021	August 2021	Report for the COVID pandemic identified no exceedances of any air quality objective level and all concentrations the lowest to date by a significant degree. The sixth year with no exceedances in Usk and third below 36µg/m^3. The only year to date with no exceedances in Chepstow AQMA
Annual Progress Report 2022	September 2022	NO_2 increased slightly but remained significantly lower than 2019 and every other previous year, whilst PM_{10} and $PM_{2.5}$ decreased. To date the lowest recorded concentrations of both sizes of fine particles was in 2021. 7th year in a row with no nitrogen dioxide exceedance in Usk (4th below 36µg/m^3), and the 2nd with no exceedance in the Chepstow AQMA (or anywhere with relevant exposure in Monmouthshire).
Annual Progress Report 2023	September 2023	NO_2 decreased slightly and particulates increased slightly. 8th year Usk is below NO_2 objective level and 5th below 36µg/m^3, 3rd year with no exceedance in the county.

1.2 Air Quality Management Areas

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

A summary of AQMAs declared by Monmouthshire County 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

http://www.monmouthshire.gov.uk/air-quality and

https://uk-air.defra.gov.uk/aqma/local-authorities?la_id=403

Table 1.1 – Declared Air Quality Management Areas

AQMA	Relevant Air Quality Objective(s)	Comments on Air Quality Trend	Description	Action Plan
Bridge Street Usk	NO_2 annual mean	There have been improvements in air quality in the AQMA. Over the last 8 years there have been no exceedances, and under 10% of the Objective level for 5 years	An area encompassing Bridge Street, from its junction with Newmarket Street up to and including the area around the junction with Castle Parade and Porthycarne Street	MCC APR 2019 (monmouthshire.gov.uk)
Hardwick Hill, Chepstow	NO_2 annual mean	There have been improvements in air quality since 2017. One location continued to exceed up to 2019, but did not exceed in 2020-2022	An area encompassing properties either side of the A48, between the roundabout with the A466 to the west and extending east just beyond the junction with the B4293 at Hardwick Terrace	Chepstow-AQAP-Final-31-August-2011.pdf (monmouthshire.gov.uk)

AMQA boundary maps within Monmouthshire can be viewed at https://uk-air.defra.gov.uk/aqma/local-authorities?la_id=403 and are included in Appendix D.

1.3 Implementation of Action Plans

Monmouthshire County Council has taken forward several measures in pursuit of improving local air quality. Details of all measures completed, in progress or planned are set out in Table 1.2. More detail on these measures can be found in the Air Quality Action Plan relating to each designated AQMA.

Air Quality Action Plans are continuously reviewed and updated whenever deemed necessary, but no less frequently than once every five years. Such updates are completed in close consultation with local communities by way of regular steering group meetings.

Key completed measures are:

- Implementation of a 20 mile an hour zone through the Usk Air Quality Management Area, enforcement of double yellow line parking, lorry watch scheme to help enforce the Road Traffic Order, as well as improved signage.
- Starting a new Strategic Vision for Usk and Llanbadoc that is scoping options for various town improvements, including traffic and air quality issues.
- Completion of a WelTAG (Welsh Transport Appraisal Guidance) stage 2 assessment for air quality-based improvements in Chepstow.
- Progress the Highbeach Roundabout regional assessment and transport focused study.

Monmouthshire County Council expects the following measures to be completed over the course of the next reporting year:

- Complete the county wide parking review
- Usk double yellow line review
- Usk School Active Travel Plan
- Completion of the initial concept design for Bridge Street and Twyn square and undertake the public consultation.
- Completion of the county wide Transport Strategy
- Publish the “Transforming Chepstow: A Placemaking Plan”

Table 1.2 – Progress on Measures to Improve Air Quality

Usk Action Plan

The original 2009 Action Plan was reviewed and updated in January 2023 as most measures had either been successfully completed or deemed unviable or no longer valid. Outstanding measures were carried forward into the below 2023 Plan. Previous progress tables are still available in the 2022 Annual Progress Report available on MCC's website.

Action Plan Measure No.	Measure	Lead authority	Implementation Phase	Indicator	Progress to date	Progress in the last 12 months	Estimated Completion Date	Comments relating to emissions reductions
1	Procurement of ANPR traffic data and commission of parking survey to help inform future actions	MCC Highways	Planning/Scoping	ANPR Data and parking survey report	Survey undertaken by video to analyse parking movements, times, however analysis is very time consuming, and not been undertaken yet. ANPR is still a priority in the Masterplan.		County wide parking review will commence this year (24/25), as part of the Usk Masterplan works a traffic model will be developed which should provide further evidence of traffic flows and classification of vehicles travelling through the town.	Improved access to parking, and reduction in on-street parking to improve congestion
2	Traffic Enforcement Both 20mph zones by police and double yellow line parking by MCC Civic Enforcement Officers	MCC Highways & Police	Active	Reduction in speeds and illegal parking	Reduction in speeds and reduced illegal roadside parking	Town survey undertaken on yellow lines (they are faded). With properly marked lines – enforcement will be easier. Usk also want to consider new areas for parking restrictions	Completed but enforcement will be ongoing. MCC Civil Enforcement Officers do regularly patrol known hotspots in Usk and will continue to visit the town to carry out enforcement activity	Implementation of 20mph on Bridge Street in 2018 and MCC proactive enforcement of double yellow line parking coincided with a significant improvement in air quality.

Action Plan Measure No.	Measure	Lead authority	Implementation Phase	Indicator	Progress to date	Progress in the last 12 months	Estimated Completion Date	Comments relating to emissions reductions
3	Town wide parking strategy Traffic Regulation Orders to restrict parking or limit waiting and improve pedestrian amenity and traffic flow. Improve carparks and introduce EVC points, consider residents parking permits and carpark charging or time restrictions	MCC Highways	Active	Final Parking Strategy Increase in EVC points in carparks	EVC points installed in two carparks. Carpark Signage Improved	EVC points in stalled in two carparks. 8 in Maryport South & 4 in Maryport North The introduction of additional waiting restrictions (double yellow lines/prohibition of loading) are planned for the summer 2024	A County wide carparking strategy is going to be undertaken late 2023. 2025	Improvements to town parking with good access to EVC will encourage uptake of EV in the town, and reduce roadside parking creating congestion and thus improve air quality
4	Improved Public transport – additional bus routes to Pontypool & Abergavenny	MCC Passenger Transport Planning	On-Going	Number of bus services' and bus patronage	The MCC bus network was retendered in winter 2023/24, with additional services added in summer 2024. Comparing autumn 2024 with summer 2022, bus departures to/from Usk have increased from 12 to 17 on Mondays to Fridays, from 8 to 12 on Saturdays, and from 0 to 4 on Sundays.		2028 – unsure of viability due to lack of funding and lack of bus usage	Improved public transport will aid in the reduction of vehicles in the AQMA
5	HGV Lorry Watch to continue with letter warnings and enforcement by MCC.	MCC Trading Standards	Active	Data relating to numbers of HGV's reported, and action taken against companies in breach of the RTO.	Start date 20/3/2013. Total = 2581 Warnings = 128 Ongoing – 5 NFA - 2443	2023 - Total = 17 Warnings = 1 Ongoing –1 NFA – 15 Gwent Police have recently established a "Commercial Vehicle Unit" the MCC traffic team have contacted them to	Ongoing	A reduction in HGV's will removing their emissions, and reduce congestion at narrow pinch points like Usk Bridge

Action Plan Measure No.	Measure	Lead authority	Implementation Phase	Indicator	Progress to date	Progress in the last 12 months	Estimated Completion Date	Comments relating to emissions reductions
				Reduction in numbers of HGVs in the AQMA		carry out enforcement of the weight restriction through Usk.		
6	Improving Active Travel, including connecting Coleg Gwent campus, MCC offices (e.g., utilising the former railway line as a high-quality pedestrian cycle route) and Usk Island to the town and the two SUSTRANS routes (423 and 42). Improvement of SUSTRANS routes Create an active travel hub in Twyn Square	MCC Active Travel			MCC working through the stages of the Active Travel Act. Specific work to create new walking and cycling connections to Coleg Gwent and MCC County Hall, and then South towards Pontypool. – Planning applications made	Usk to Little Mill is being pursued through a TFW Active Travel "Pathfinder" project, but this is in the early stages of feasibility and the Case for change is being written and funding to be sought for further progressive study. This is a collaboration project between Monmouthshire, Torfaen, SWTRA and TfW. Usk pedestrian bridge – No update. Usk Primary School AT routes – Funding has been obtained this year for feasibility and design for improvements of walking and cycling routes around Usk Primary school. This is likely to be focussed on the Monmouth Rd stretch from fir station to Burrium Gate. Separately, highways colleagues are	2028	Improvements to Active Travel routes to/from and around Usk to enable residents and visitors to safely walk and cycle and reduce vehicle usage to improve air quality and general health

Action Plan Measure No.	Measure	Lead authority	Implementation Phase	Indicator	Progress to date	Progress in the last 12 months	Estimated Completion Date	Comments relating to emissions reductions
						looking at the flooding issues in the area, which we have now discussed bringing the 2 schemes together.		
7	Increase the number of public transport services to and from Usk. To include community transport	MCC Passenger Transport Planning	On-Going	number of bus services' and'bus patronage	The MCC bus network was retendered in winter 2023/24, with additional services added in summer 2024. Comparing autumn 2024 with summer 2022, bus departures to/from Usk have increased from 12 to 17 on Mondays to Fridays, from 8 to 12 on Saturdays, and from 0 to 4 on Sundays		2028	Improved public transport will aid in the reduction of vehicles in the AQMA
8	Contain indirect emissions from future development and from changes of land use that would generate traffic	MCC Planning/Environmental Health	Active	Numbers of planning applications consulted on with air quality implications	Planning aware of AQMA and actively consult with Environmental Health	Env Health, Transport, Active Travel all have input/comments on the Replacement Local Development Plan, which is currently being prepared		By ensuring local developments are planned with methods to reduce their impact on local air quality. Could be significant depending on number of applications
9	Bike Hire Scheme from Coleg Gwent	MCC Active Travel		Implementation of scheme and uptake		Initial survey concluded - Will be developed under the town Masterplan (AP 12)	To be further investigated through Town Masterplan process – Action Plan measure no. 12	Provide a hub for MCC staff, students and visitors to cycle into Usk rather than drive.
10	Work with school and others to produce community and school traffic plan	MCC Education		School Traffic Plan and reduction in idling at school, and reduction in school vehicle trips	School signed up to ECO schools with diffusion tube study. MCC undertaken sensor study.	MCC provided a template, but it needs teacher involvement. Cllr is visiting the school to get teacher involvement.	School's first Travel Plan should be completed in the 23/24 year	School plan could help educate parents' and teachers to walk/cycle

Action Plan Measure No.	Measure	Lead authority	Implementation Phase	Indicator	Progress to date	Progress in the last 12 months	Estimated Completion Date	Comments relating to emissions reductions
					Anti-Idling group set up within MCC to promoting anti idling focused on School pick up and drop off times. Signage installed. MCC appointed School Travel Plan Officer who is working with School to produce their own TP			
11	Support & promote facilities for cyclists at school and in town centres	MCC Active Travel			Cycle parking installed on Bridge Street		Ongoing - as need arises, new facilities will be provided	Potential reductions in emissions if modal shift from car to cycling.
12	Public Realm improvements to Twyn Square (e.g. remove roundabout, restrict traffic, widen pavements, provide café/pub outside seating areas, improve green infrastructure)	MCC	Document completed. Implementation underway	Action in the plan being implemented	The Usk Masterplan is a working document that was completed in 2019, but delivery of the plan is ongoing through the Usk Masterplan Delivery Group, which comprises of MCC Officers and Town and County Councillors.	The Delivery Group meet regularly and oversee the implementation of the projects from the Usk Masterplan, including The Usk Public Realm Project. Initial concept design for Bridge Street and Twyn square is currently underway, and expect to carry out public consultation later this year (2024)	2028	Make Twyn Square more pedestrian friendly to encourage walking through town rather than driving

Action Plan Measure No.	Measure	Lead authority	Implementation Phase	Indicator	Progress to date	Progress in the last 12 months	Estimated Completion Date	Comments relating to emissions reductions
13	Pedestrian priority interventions for Bridge Street to reduce traffic, and encourage shoppers	MCC			As Action 12	As Action 12	2028	Make Bridge Street more pedestrian friendly to encourage walking through town rather than driving, and discourage through trips
14	Implement new 20mph speed limits/ zones – Bridge Street Zone has been completed, other zones in the town could be beneficial)	MCC Highways	Implementation 2023	Reduced speeds	Bridge Street made 20mph in 2018	Plans completed for Usk wide 20mph	Completed prior to National 20mph legislation	reduce acceleration/braking and congestion and encourage walking/cycling. Bridge Street 20mph started in 2018 and corresponded to an improvement in air quality
15	River Usk Pedestrian Bridge (part of Active Travel) First – assess strategic need as part of active travel strategy. If case undertake feasibility assessment & determine location, costs, funding, design.	MCC Active Travel/Planning		Installation of Bridge Bridge usage Less traffic due to improved pedestrian access Improved traffic flow due to removal of pedestrians on vehicle bridge	Usk Masterplan undergoing consultation. This will be the driver	Discussed several times at the Masterplan meetings but not progressed to date	No Estimate yet. This is a big-ticket item that will be included in the town strategic plan design	Usk Bridge is narrow with a pedestrian pavement. This creates congestion when large vehicles cross and discourages walking into town. A dedicated pedestrian bridge would alleviate both issues

Chepstow Action Plan

The Chepstow Action plan has not been updated however it is reviewed twice a year at the air quality steering group meetings. Due to the ongoing studies and planning being undertaken by Welsh Government, as well as MCC's town centre improvement strategies, any update would need to incorporate the conclusions and actions of those pieces of work. Further detail are in the below table.

Action Plan Measure No.	Measure	Lead authority	Implementation Phase	Indicator	Progress to date	Progress in the last 12 months	Estimated Completion Date	Comments relating to emissions reductions
1.	Chepstow integrated Transport Strategy	MCC	superseded	n/a	superseded by the new county-wide Local Transport Strategy which has been developed and approved.		Completed 2024	n/a
2.	Limit HGV weight or emissions	Welsh Government	n/a	n/a	No progress as A48 still a trunk road and considered not appropriate	Considered in 2013 public consultation. Considered again in 2018 WelTAG study. Not considered feasible	n/a	n/a
3.	Amend MOVA at Tesco (Upper Street) traffic lights	Welsh Government	n/a	n/a	Completed	Completed	April 2012	Anecdotal evidence suggests less congestion on Hardwick Hill
4.	Encourage car sharing	MCC	Ongoing	None	There are several informal cars sharing locations people use.	Transition Chepstow have taken lead in identifying places for car sharing carparks	Ongoing	Depending on the uptake – and provided the car sharing removes vehicles from the AQMA.

Action Plan Measure No.	Measure	Lead authority	Implementation Phase	Indicator	Progress to date	Progress in the last 12 months	Estimated Completion Date	Comments relating to emissions reductions
					MCC is looking in to ways to formalise them	and using an app to advertise them. One such location is Chepstow Racecourse. MCC currently looking into finding a gate for the carpark so the Racecourse will allow the use of its Car park for this purpose		
5.	Monitor developments in adjoining areas	MCC	Ongoing	Number of air quality assessment asked for	Good working relationship with planners. Also liaise with Forest of Dean regularly. Officers regularly attend Air Quality steering group meetings.	Good working relationship with planners. Also liaise with Forest of Dean regularly. EH have commented on FoD and Gloucester LSP	Ongoing	Could be potential emissions reductions in the long term (or at least reductions on increases).
6.	Improve Council integration on planning issues	MCC	Ongoing	Consultation between departments	Good working relationship with planners.	Good working relationship with planners. Env Health, Passenger Transport & Active Tavel all comment on Replacement LDP	Ongoing	Could be potential emissions reductions in the long term (or at least reductions on increases).

Action Plan Measure No.	Measure	Lead authority	Implementation Phase	Indicator	Progress to date	Progress in the last 12 months	Estimated Completion Date	Comments relating to emissions reductions
7.	Education of HGV operators	MCC	Ongoing	n/a	None specifically for Chepstow	None specifically for Chepstow	Ongoing	Could be potential emissions reductions with eco driving techniques.
8.	Improve cross boundary working	MCC	Ongoing	n/a	MCC Env Health sits on Forest of Dean AQ Steering Committee	Good integration with Forest of Dean	Ongoing	Could be potential emissions reductions in the long term (or at least reductions on increases).
9.	Include LDP Policy covering air quality	MCC	Complete	n/a	Policy in the LDP.	New LDP currently in progress and Air Quality will be a factor. Env Health commented on prosed sites and requested AQ impact Assessments where appropriate	Ongoing	In the long term could be significant if affects major developments. However, there is a lot of pressure on MCC to increase housing especially in the south of the County. There are contradictory pressures from Government of increasing housing and reducing vehicle emissions
10.	Redesign High Beech Roundabout	Welsh Government in partnership with MCC	n/a	Completion of roundabout improvements	WG undertaken Stage 1 and Stage 2 WelTAG study but now progressed to a regional assessment and transport focused outcome proposal. The approach being taken is	Stakeholder group (WG, MCC, TfW) met. WelTAG Stage 0 objectives setting agreed	Work to begin after Replacement LDP has been published and land allocated for the work	Localised improvements round the Roundabout. Potential improvements on the A48 assuming reduced queuing times.

Action Plan Measure No.	Measure	Lead authority	Implementation Phase	Indicator	Progress to date	Progress in the last 12 months	Estimated Completion Date	Comments relating to emissions reductions
					more holistic and will consider the wider implications of the housing developments in the area including the impacts of the Caldicot and Mountan Road developments. It is proposed land will be set aside in the LDP for potential expansion of Highbeech Roundabout.			
11.	Target schools Traffic	MCC in partnership	Ongoing	Number of Travel Plans in place	Walking buses being organised by Transition Chepstow Env Health installed air quality sensor at Chepstow Comp in Summer 2018. Removed now but monitoring indicated low concentrations.	Anti-idling signage and patrols by enforcement officers.	Ongoing	Could potentially provide reductions in emissions at locations close to schools, or at congestion hotspots.
12.	Promote Sustainable transport as part of new developments	MCC	Ongoing	n/a	General improvements as part of planning process	General improvements as part of planning process. EH and Active travel	Ongoing	Could be potential emissions reductions in the long term (or at least reductions on increases).

Action Plan Measure No.	Measure	Lead authority	Implementation Phase	Indicator	Progress to date	Progress in the last 12 months	Estimated Completion Date	Comments relating to emissions reductions
						request/comments include Sustainable transport		
13.	Promote town centre developments	MCC	n/a	n/a	1 town centre development with planning permission, and 1 in the LDP	In LDP and additional in RLDP (ongoing)	On-going	n/a
14.	Rail Park and Ride	MCC	n/a	n/a	On-going – Funding applied for & P&R from racecourse complete. Improvements made to the carpark to enable additional parking and room for buses	Racecourse require a gate/barrier before allowing it to be used. MCC looking into finding. Considered in 2018 WelTAG Stage 1 and recommended for further consideration at stage 2	n/a	Park and Ride on racecourse likely to cause some emissions reductions on Hardwick Hill.
15.	Support the climate change and sustainable energy strategy	MCC	n/a	n/a	General support, particularly for transport measures	No specific progress	Ongoing	Unlikely to be significant.
16.	Travel Plans	MCC	Ongoing	Numbers of Travel Plans in place	Rather than travel plans MCC have 2 Chepstow Specific plans ongoing	Level Up funding of £5million approved Nov 2023.	Ongoing	Travel Plans were unlikely to have a significant impact, however the four Chepstow specific plans have elements that could have a large impact

Action Plan Measure No.	Measure	Lead authority	Implementation Phase	Indicator	Progress to date	Progress in the last 12 months	Estimated Completion Date	Comments relating to emissions reductions
					that would impact travel. Transforming Chepstow Plan & Chepstow Place Plan. In addition, the town council- have a Town Plan. WG and MCC also have a Transport Study underway	Transforming Chepstow: A Placemaking Plan – Summer 2023 is complete but awaiting Welsh Translation before being made public		on improving traffic flow, reduction in vehicle usage, improvements to active travel etc.
17.	Bypass	Welsh Government	n/a	n/a	Not being progressed at present however considered in 2018 WelTAG stage 1 assessment, and recommended for further appraisal at Stage 2	Four potential routes were considered in the 2018 WelTAG Stage 1 study. One route was recommended for further consideration at Stage 2.	Unknown at present	Likely to take a substantial amount of traffic off the A48 through Chepstow
18.	Improve bus services	MCC Passenger Transport Planning'	Ongoing	Number of bus services' and 'bus patronage'	C5 service used to serve Chepstow Rail Station has been re-timed, enabling greater integration with Gloucester and	MCC bus network was retendered in winter 2023/24, with additional services added in summer 2024	Ongoing	Some improvements if modal shift from car to bus and train.

Action Plan Measure No.	Measure	Lead authority	Implementation Phase	Indicator	Progress to date	Progress in the last 12 months	Estimated Completion Date	Comments relating to emissions reductions
					Newport bound rail services.	Comparing autumn 2024 with summer 2022, bus departures for regional service to/from Chepstow have been from 43 to 50 on Mondays to Fridays, from 29 to 41 on Saturdays and 5 to 18 on Sundays. Chepstow town service departures have increased from 15 to 38 on Mondays to Fridays and from 6 to 19 on Saturdays		
19.	Improve public transport integration	MCC	Ongoing	Bus and train patronage	In November 2023 MCC was offered levelling-up funding to improve access to the railway station. The scheme proposes a new bus-rail interchange at the station to allow buses connect with trains, cycle parking, and cycle and bus access improvements in the vicinity of the station		2026/27	Some emissions improvements if modal shift from car to bus and train
20.	Origin and Destination survey	MCC	2011	Survey undertaken	Complete	Completed in 2011	Completed	Identified a significant number of HGV's were using A48 as a through route to avoid paying the Severn Bridge Toll.

Action Plan Measure No.	Measure	Lead authority	Implementation Phase	Indicator	Progress to date	Progress in the last 12 months	Estimated Completion Date	Comments relating to emissions reductions
								Now the Toll has been removed however it appears additional commuter traffic to/from Bristol has increased traffic.
21.	Provide information for residents	MCC	Ongoing	n/a	Information provided on MCC website, and at meetings	MCC website updated. Steering group meetings	Ongoing	n/a
22.	Target HGVs using unsuitable satnav routes	MCC	Not progressed	n/a	Included in 2013 public consultation however Welsh Government considered it in Detail Design stage in 2015/16 and will not progress at this time	No specific progress	n/a	n/a
23.	Improve rail services to the town	Transport for Wales and Crosscountry Trains'	Ongoing	Numbers of train passengers	From May 24, 2011, 14 more Cross Country trains a day will stop at Chepstow to gauge customer demand for a more frequent service.	In November 2023 TfW undertook a public consultation, including on improved service frequencies on the Chepstow Line and into Bristol	Ongoing	Potential emissions reductions if modal shift from car to train
24.	Upgrade the railway station	Network Rail/ MCC	Ongoing	n/a	Improved parking and bus drop of space	November 2023 levelling-up funding to improve access to	2026/27	An improved railway station with better parking, active travel infrastructure, improved bus-rail

Action Plan Measure No.	Measure	Lead authority	Implementation Phase	Indicator	Progress to date	Progress in the last 12 months	Estimated Completion Date	Comments relating to emissions reductions
						the railway station. The scheme proposes a new bus-rail interchange at the station to allow buses connect with trains, cycle parking, and cycle and bus access improvements in the vicinity of the station		interchange should reduce car travel to the station, and encourage more train journeys over car journeys
25.	Improve cycling facilities	MCC	On-going	Uptake of cycle routes	Walking/cycle routes identified in Active Travel plan	Several routes identified for improvement. A-B connecting Communities actively working on improving the Wye Wander Route	n/a	Greater uptake of cycle routes should help reduce local traffic in and around Chepstow
26.	Bus Park and Ride/ Share	MCC	On-going	Numbers of people using P&R	P&R set up from Chepstow Racecourse	Considered in 2018 WelTAG Stage 1 and recommended for further consideration at stage 2	n/a	Park and Ride on racecourse likely to cause some emissions reductions on Hardwick Hill
27.	Distribution hub	MCC	Not progressed	n/a	Considered unsuitable for Chepstow	Not progressed	n/a	n/a

Action Plan Measure No.	Measure	Lead authority	Implementation Phase	Indicator	Progress to date	Progress in the last 12 months	Estimated Completion Date	Comments relating to emissions reductions
28.	Lobby for change in toll system at Severn Bridge	MCC/ Welsh Government	On-going	n/a	Toll removal occurred in 2019	WG to undertake a before and after traffic study to determine how the toll removal has impacted	December 2018 With traffic study undertaken in 2018 (before) and same time of year in 2019 (after)	The Origin and Destination study identified a significant number of HGV's using Hardwick Hill to avoid Tolls; hence Toll removal was included in the Action Plan. However, it now appears that Toll removal has removed a barrier for car use and has increased traffic. Chepstow is being marketed as a cheaper housing market for Bristol Commuters.
29.	Promote Rail Freight	MCC/ Network Rail	Not progressed	n/a	No specific progress in Chepstow	No specific progress in Chepstow	n/a	n/a

2 Air Quality Monitoring Data and Comparison with Air Quality Objectives

2.1 Summary of Monitoring Undertaken in 2023

2.1.1 Automatic Monitoring Sites

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

Monmouthshire County Council undertook automatic (continuous) monitoring of three pollutants at one site during 2023.

Table 2.1 presents the details of this site. National monitoring results are available on the Welsh Air Quality Forum (WAQF) and DEFRA websites http://www.welshairquality.co.uk http://uk-air.defra.gov.uk/

The automatic analysers are in Chepstow at the Air Quality Monitoring Station (AQMS) located on the A48 on the pavement of Hardwick Hill, which is within the Chepstow Air Quality Management Area (AQMA) and at a roadside location. The AQMS is situated in a location that is the closest it can technically be (based on its size and available space and power) to the location of the highest recorded concentrations in the county.

Maps showing the location of the monitoring sites are provided in Figure 2.1

The Chepstow AQMS became part of the UK's Automatic Urban and Rural Network (AURN) in January 2008. In February 2010 the PM10 monitor was upgraded to a TEOM-FDMS (Filter Dynamics Measurement System) analyser and a TEOM-FDMS PM2.5 analyser was introduced. TEOM-FDMS monitors are accepted as giving results equivalent to the European Gravimetric Standard Method. The analysers were Thermo Scientific rp Series. There were two 8500 FDMS units, two 1400A TEOM Sensor Units and two 1400A TEOM Control Units.

In 2018 the AURN began replacing the TEOM-FDMS analysers in the network with BAM (Beta Attenuation Monitors) analysers. The analysers in the Chepstow AQMS were replaced in August 2018, Therefore PM10 and PM2.5 data reported for January to July 2018 is TEOM-FDMS data and August 2018 onwards is BAM data.

The original nitrogen dioxide analyser (Monitor Labs 9841B chemiluminescence analyser) and Odessa data logger were replaced in January 2012 to the latest compliant Monitor Europe 20xx series continuous gaseous analyser (ML 2041 NOx Chemiluminescence Analyser).

On 7th November 2019, the ML2041 NOx Analyser was then replaced with an API T200 NOx gas analyser.

In 2023, Air Monitors serviced the NOx analyser and the PM10 and PM2.5 analysers, and all three were audited by Ricardo-AEA. Services and audits are undertaken twice a year. Monmouthshire County Council undertakes routine LSO (Local Site Operator) duties at the station including regular calibration checks, filter changes, PM-head cleaning, BAM tape changes and calibration gas changes.

Further details on how the monitors are calibrated and how the data has been adjusted are included in Appendix C.

2.1.2 Non-Automating Monitoring Sites

Monmouthshire County Council undertook non- automatic (passive) monitoring of nitrogen dioxide at 44 sites during 2023. Table 2.2 presents the details of the sites. In addition to the discrete 44 diffusion tube sites, three tubes are also co-located with the Chepstow AQMS – (next to the NO_2 analyser's inlet) as part of a local and national bias adjustment study. With this information all the diffusion tubes can be adjusted to reflect atmospheric concentrations more accurately.

There was one change to diffusion tube locations in 2023. MM16 (20a Monnow Street Monmouth) was removed due to a series of incidents where the tube was removed. The location had been in use since 2014 and showed a consistent decrease in concentrations. In 2022 the annual average was 20µg/m^3. Instead, a diffusion tube was place on a lamppost roadside in Wonastow Road

industrial estate (Kings Fee) due to residents' concerns over HGV idling and parking causing congestion whilst awaiting their turn for entry into a business.

Maps showing the location of the monitoring sites are provided in Figure 2.2.

Since May 2010, Monmouthshire County Council has used diffusion tubes prepared and analysed by Gradko International Limited using 20% TEA in Water. The tubes are changed every month (either 28 or 35 days) and sent to Gradko for analysis.

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

Table 2.1 – Details of Automatic Monitoring Sites

Site ID	Site Name	Site Type	In AQMA	OS Grid Reference		Pollutants Monitored	Monitoring Technique	Inlet Height (m)	Distance from Kerb to Nearest Relevant Exposure (m)	Distance from Kerb to Monitor (m)
				X	Y					
AQMS	A48 Hardwick Hill, Chepstow	Roadside	Chepstow A48/Hardwick Hill AQMA	353125	193472	PM_{10} $PM_{2.5}$	Beta Attenuation Monitoring (BAM)	2.5	7.5m	3
						NO_x NO_2	Chemiluminescence			

Figure 2.1 – Map of Automatic Monitoring Site (AQMS) https://airquality.gov.wales/

Table 2.2 – Details of Non-Automatic Monitoring Sites

Diffusion Tube ID	Site Name	Site Type	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Pollutants Monitored	In AQMA? Which AQMA?	Distance to Relevant Exposure (m)[1]	Distance to Kerb of Nearest Road (m)	Tube Co-located with a Continuous Analyser	Height (m)
CH1	38 Larkfield Park Chepstow	Roadside	352800	193274	NO2	Chepstow	0.2	10.0	No	1.6
CH2a	Lamppost No. WH70, Newport Road, Chepstow	Kerbside	352821	193307	NO2	Chepstow	3.7	1.8	No	2.5
CH3	36 Wayside - Hardwick Hill Chepstow	Roadside	352970	193452	NO2	Chepstow	0.2	12.0	No	1.7
CH4	2 Hardwick Hill - Chepstow	Roadside	353009	193444	NO2	Chepstow	0.6	4.0	No	3.1
CH5	1 Ashfield House - Mount Pleasant	Roadside	353141	193451	NO2	Chepstow	0.2	14.0	No	1.6
CH6	Hill House -Mount Pleasant Chepstow	Roadside	353166	193586	NO2	Chepstow	0.2	6.0	No	2.3
CH7	2 Hardwick Terrace - Chepstow	Roadside	353164	193663	NO2	Chepstow	0.2	1.5	No	2.6
CH8	Moor Street Lamppost- Chepstow	Roadside	353219	193730	NO2	Chepstow	0.5	1.7	No	2.8
CH9	Restway Wall - Garden City Way	Roadside	353306	193681	NO2	No	0.2	11.0	No	1.9
AQ1, AQ2, AQ3	AQMS - Hardwick Hill Chepstow 3	Roadside	353125	193472	NO2	Chepstow	20.0	4.0	Yes	2.9
PWLL1	Lamppost NY237 - 1 The Chestnuts, Pwllmeyric	Kerbside	351983	192594	NO2	No	16.0	1.2	No	2.4
PWLL2	Lamppost NY241 - The Cedars, Pwllmeyric	Kerbside	351873	192489	NO2	No	1.9	1.9	No	2.4
PWLL3	Lamppost NY246 - Hill House, Pwllmeyric	Kerbside	351724	192370	NO2	No	6.2	1.4	No	2.4
PWLL4	2 White Cottage, Pwllmeyric	Roadside	351666	192300	NO2	No	0.1	2.2	No	2.4
MM1	School House - Wyebridge St Monmouth	Roadside	351072	212821	NO2	No	0.2	3.4	No	2.7
MM2	Flat 1 - Granville St Monmouth	Roadside	351139	212894	NO2	No	0.2	25.0	No	2.7
MM3	Lamppost ME 145 - 21 St James Sq. Monmouth	Roadside	351085	212930	NO2	No	2.4	0.5	No	2.3
MM4	12A Monnow Street on St Johns Street, Monmouth	Roadside	350718	212794	NO2	No	0.2	0.7	No	2.3
MM7	Arka, Old Dixton Road, Monmouth	Roadside	351197	212980	NO2	No	0.1	23.0	No	2.3

Diffusion Tube ID	Site Name	Site Type	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Pollutants Monitored	In AQMA? Which AQMA?	Distance to Relevant Exposure (m)[1]	Distance to Kerb of Nearest Road (m)	Tube Co-located with a Continuous Analyser	Height (m)
MM9	1, The Shrubbery, Old Dixton Road, Monmouth	Roadside	351467	213280	NO2	No	0.2	16.0	No	2.3
MM11	Fence of Boys School Playground	Roadside	351024	212652	NO2	No	0.5	4.8	No	3.0
MM13	Pike House, New Dixton Road, Monmouth	Roadside	351884	213660	NO2	No	0.2	6.5	No	1.6
MM15	6 Monnow Street/Fancy Fred's, Monmouth	Roadside	350729	212811	NO2	No	0.2	1.5	No	2.3
MM17	4 Agincourt Square - The Punch House	Roadside	350779	212868	NO2	No	0.5	1.7	No	2.3
MM18	Monmouth School D&T Block	Roadside	351091	212791	NO2	No	0.2	13.0	No	2.5
MM19	Lamp post, 7 Ty Mawr, Monk Street, Monmouth	Roadside	350953	213098	NO2	No	1.5	1.8	No	2.1
MM21	Lamp post ME399,14 Victoria Place, Priory Street, Monmouth	Roadside	350910	213071	NO2	No	0.3	1.5	No	2.5
MM22	Lamppost ME207 Kings Fee	Roadside	349905	212337	NO2	No	11.3	4.5	No	2.1
AB1	Lamppost MC178- Merthyr Rd, Abergavenny	Roadside	329170	213867	NO2	No	0.4	0.9	No	2.4
AB2	Back Clinic, 2a Bridge Cottages, Merthyr Rd Aber	Roadside	329202	213822	NO2	No	0.2	1.7	No	2.5
AB3	112 Merthyr Road, Abergavenny	Roadside	329324	214080	NO2	No	0.3	1.8	No	2.5
AB4	L/P Adj. 5 Coopers Way, Merthyr Rd, Abergavenny	Roadside	329275	213686	NO2	No	2.4	1.6	No	2.4
AB5	1 Usk View, Merthyr Rd, Abergavenny	Roadside	329212	214075	NO2	No	0.1	5.0	No	1.9
AB7	Lamp post WB259 - 14 Pen-y-fal Road, Abergavenny, NP7 5UB	Roadside	329848	214556	NO2	No	6.1	1.6	No	2.3
AB8	4 Northgate, Abergavenny, NP7 5TT	Roadside	329837	214547	NO2	No	0.3	3.5	No	1.8
AB9	8 Brecon Road, Abergavenny, NP7 5UG	Roadside	329523	214512	NO2	No	0.3Lim	2.5	No	1.8
USK1	14A Castle Parade - Usk	Roadside	337860	201039	NO2	No	0.2	1.6	No	2.3
USK2	Castle Court - Usk	Roadside	337710	200936	NO2	Usk	0.2	1.4	No	2.5
USK3	White Hart - 5 Bridge St Usk	Roadside	337663	200906	NO2	Usk	0.2	1.3	No	2.4

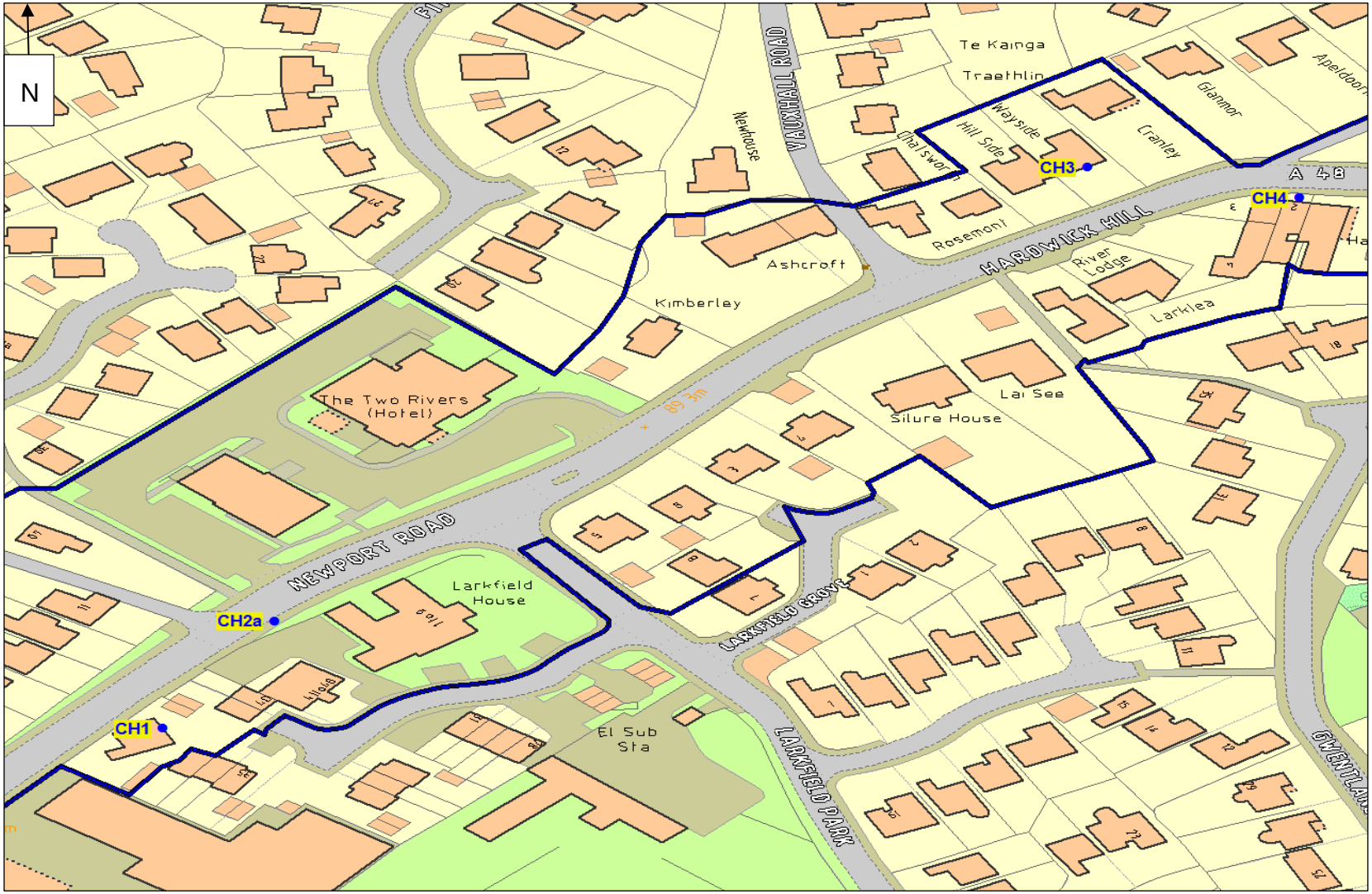
Diffusion Tube ID	Site Name	Site Type	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Pollutants Monitored	In AQMA? Which AQMA?	Distance to Relevant Exposure (m)[1]	Distance to Kerb of Nearest Road (m)	Tube Co-located with a Continuous Analyser	Height (m)
USK4	35 Bridge St - Usk	Roadside	337596	200849	NO2	Usk	0.2	1.3	No	2.5
USK5	16 Bridge St -Lamp Post MA 556 - Usk	Roadside	337562	200824	NO2	Usk	0.5	1.2	No	2.4
USK6	4 Usk Bridge Mews - Usk	Roadside	337473	200755	NO2	Usk	0.2	4.9	No	2.6
WS1	13 Woodside, Usk	Roadside	337363	200707	NO2	No	0.2	1.0	No	2.5
WS2	19 Woodside, Usk	Roadside	337356	200736	NO2	No	0.2	2.7	No	1.8
WS3	22 Woodside, Usk	Roadside	337364	200749	NO2	No	0.0	1.5	No	2.5

Notes:

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

Figure 2.2 – Maps of Non-Automatic Monitoring Sites

Nitrogen Dioxide Monitoring Locations - Chepstow AQMA west (blue line is boundary of AQMA)

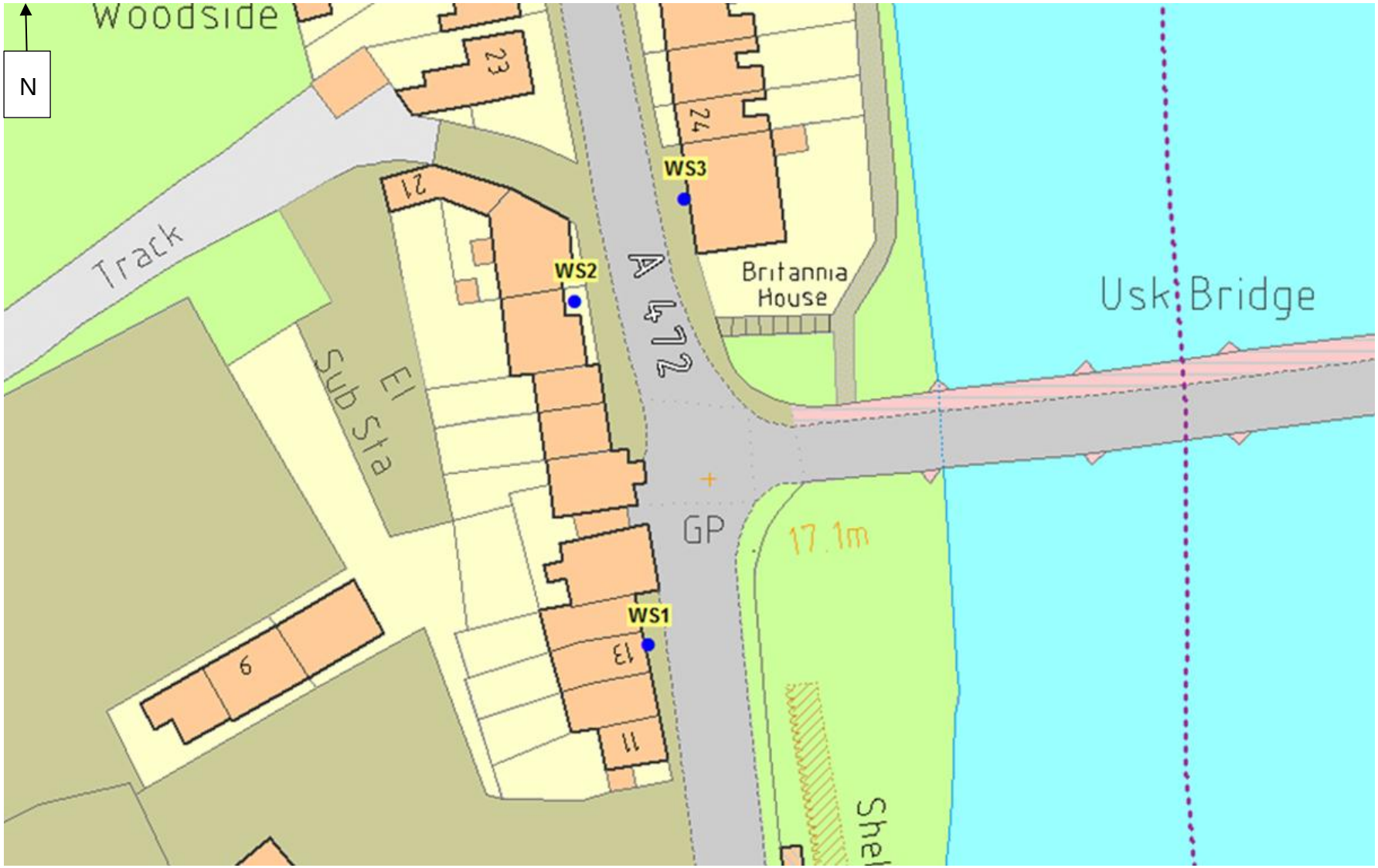


Nitrogen Dioxide & AQMS Monitoring Locations - Chepstow AQMA east (blue line is boundary of AQMA)

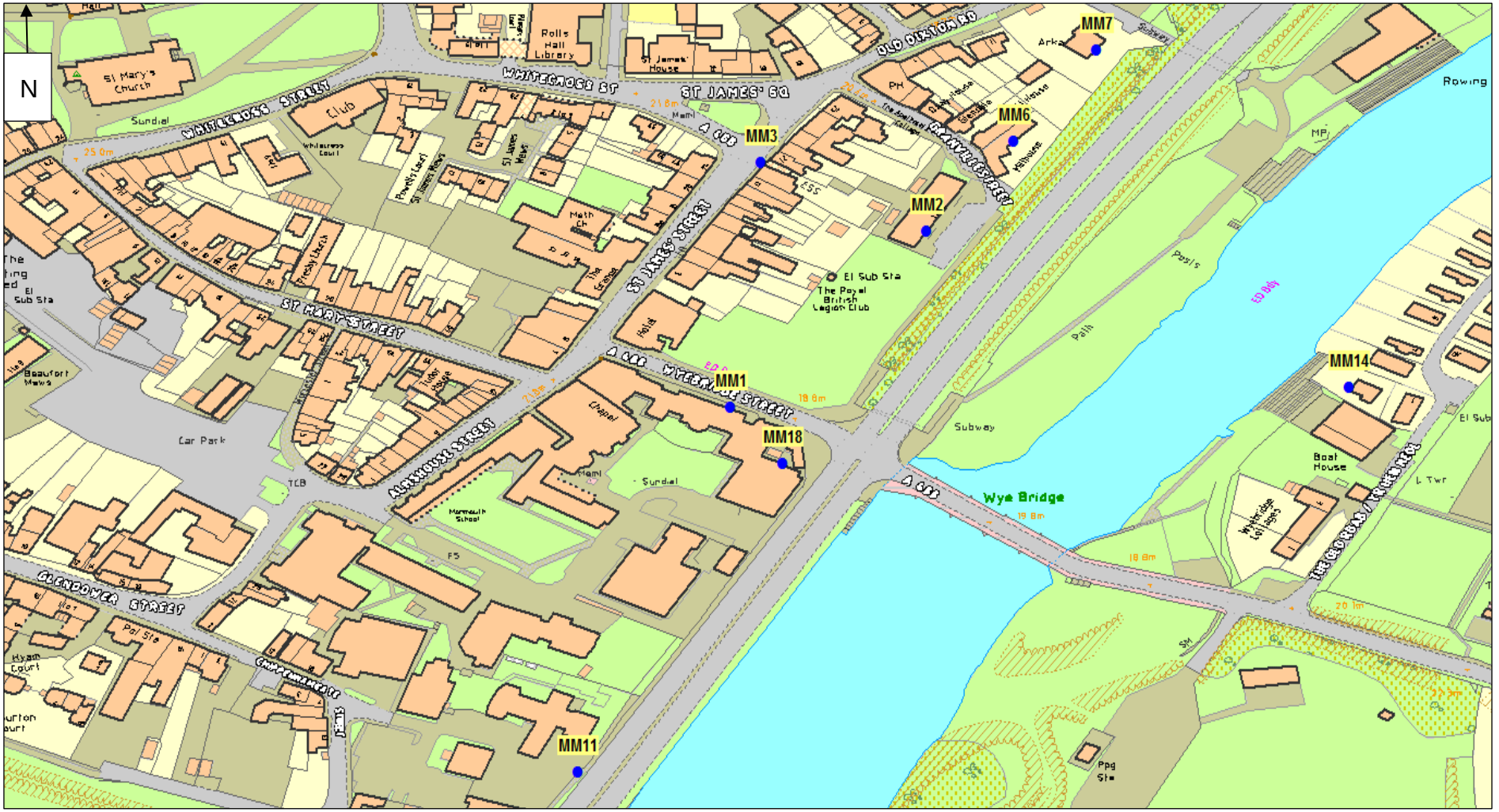
Nitrogen Dioxide Monitoring Locations – Pwllmeyric

Nitrogen Dioxide Monitoring Locations - Usk AQMA (blue line is boundary of AQMA)

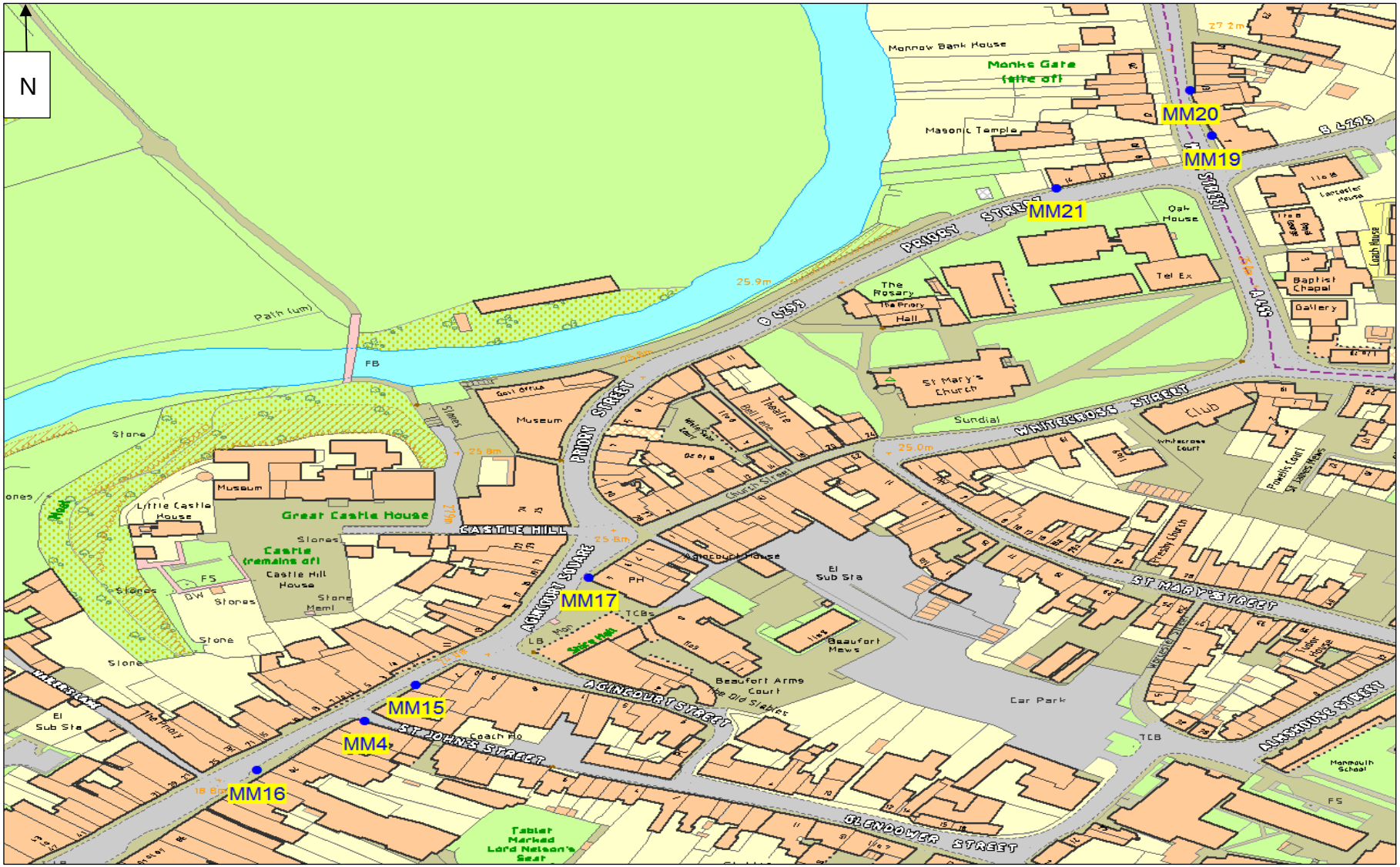
Nitrogen Dioxide Monitoring Locations – Woodside, Usk



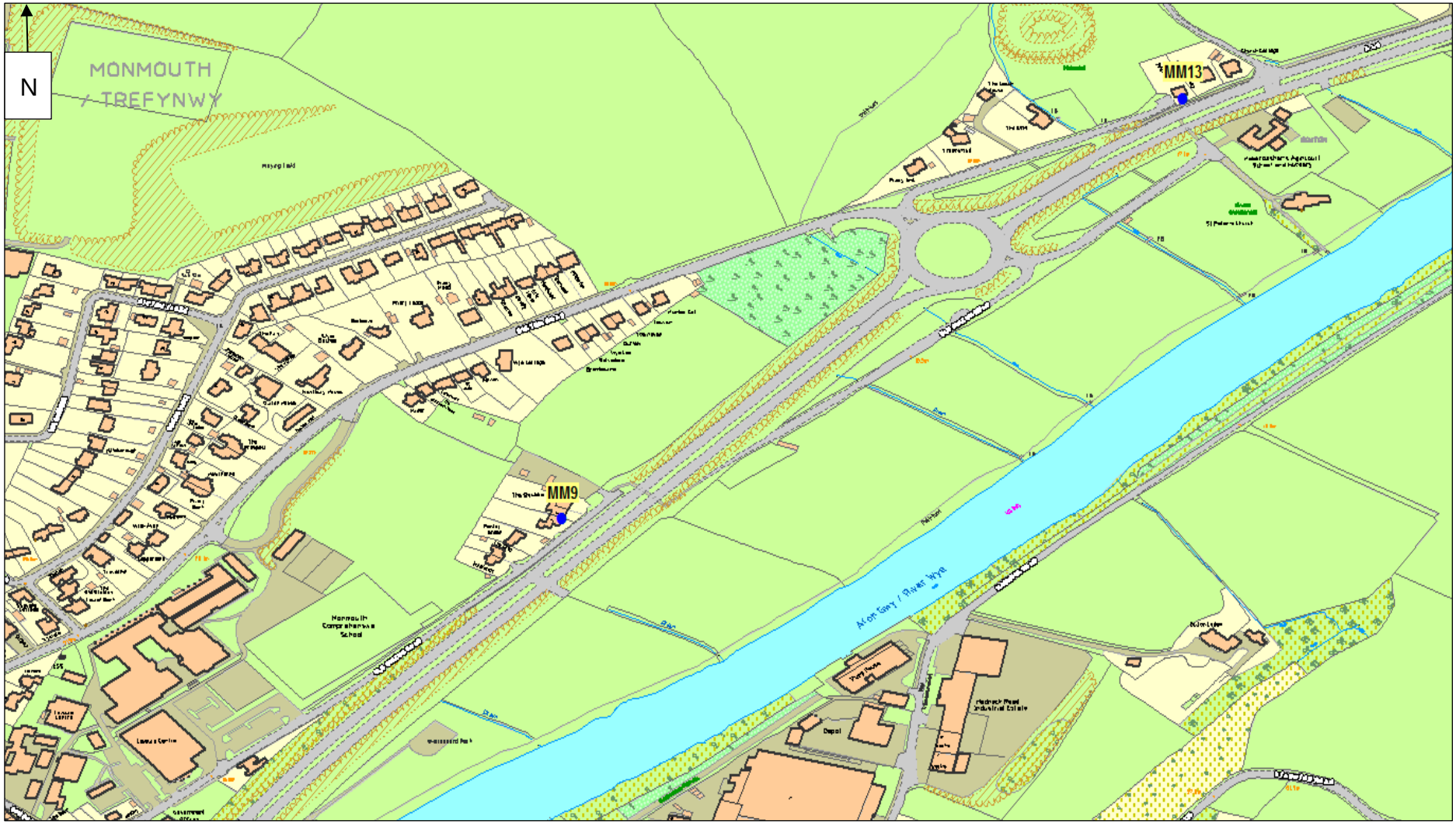
Nitrogen Dioxide Monitoring Locations – Monmouth, A40/Wyebridge Street



Nitrogen Dioxide Monitoring Locations – Monmouth, Monnow Street & Monk Street/Priory Street junction (MM16 removed in 2023)

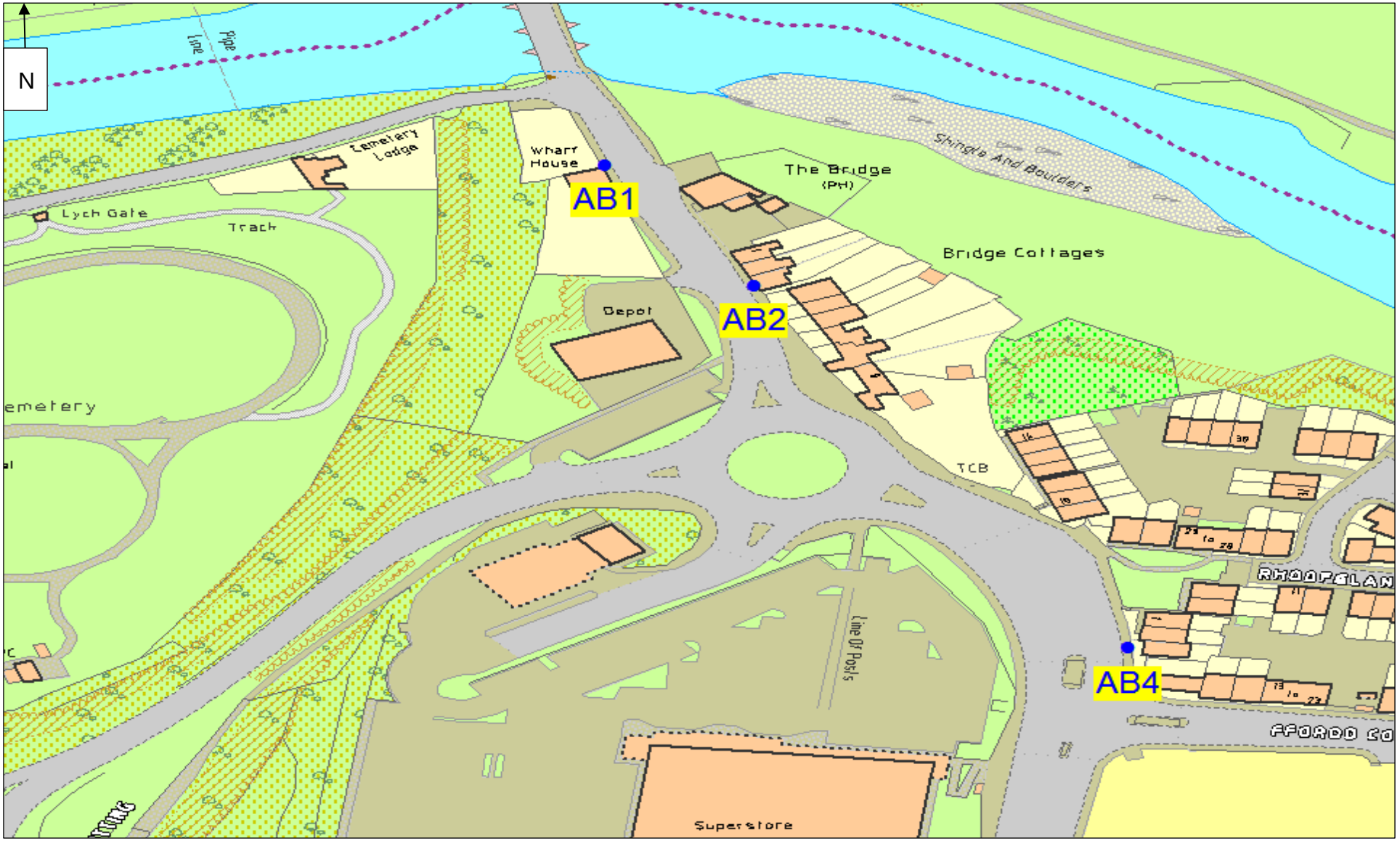


Nitrogen Dioxide Monitoring Locations – Monmouth, Old Dixton Road (MM9, MM13)

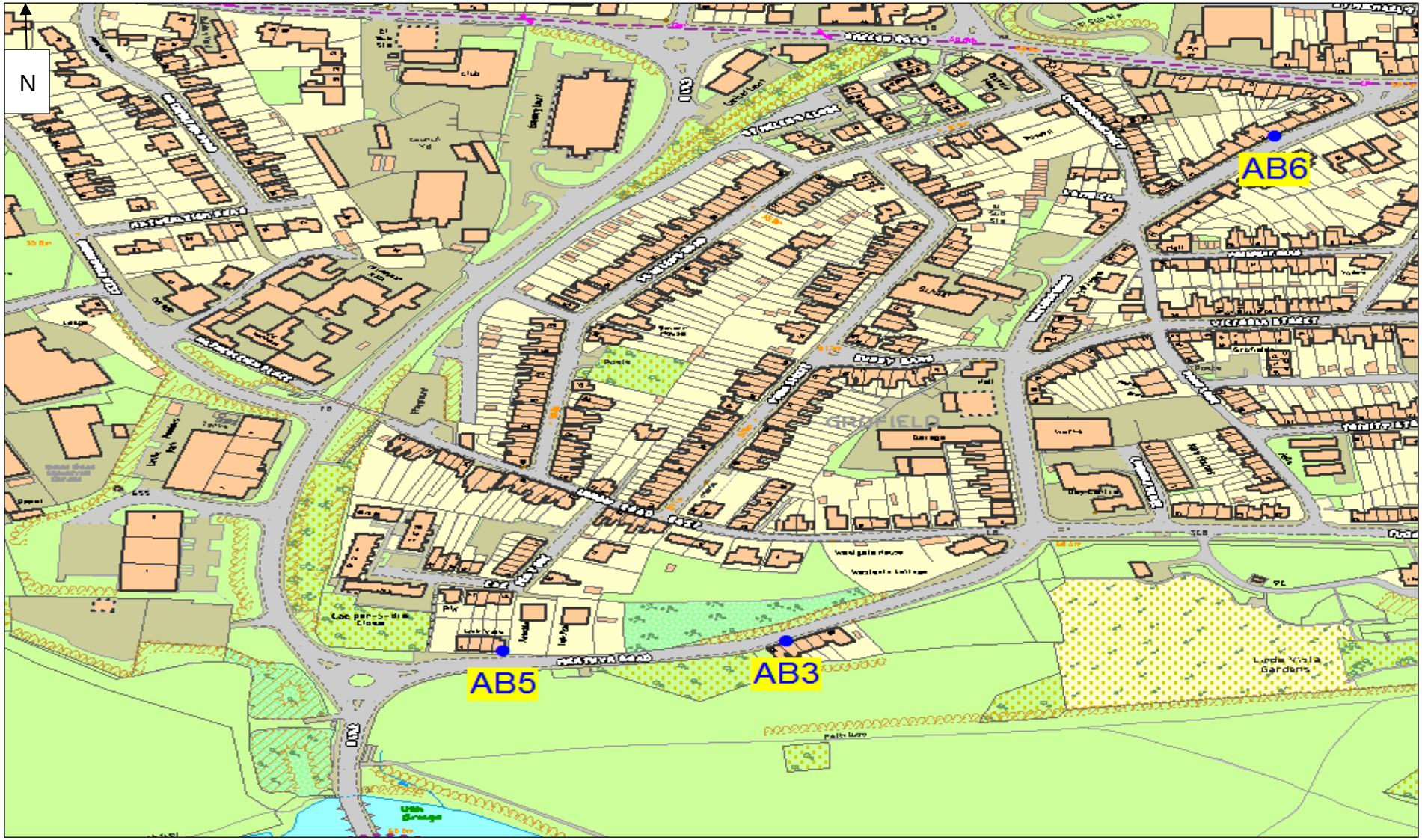


Nitrogen Dioxide Monitoring Locations – Monmouth, Kings Fee/Wonastow Road Industrial Estate (MM22)

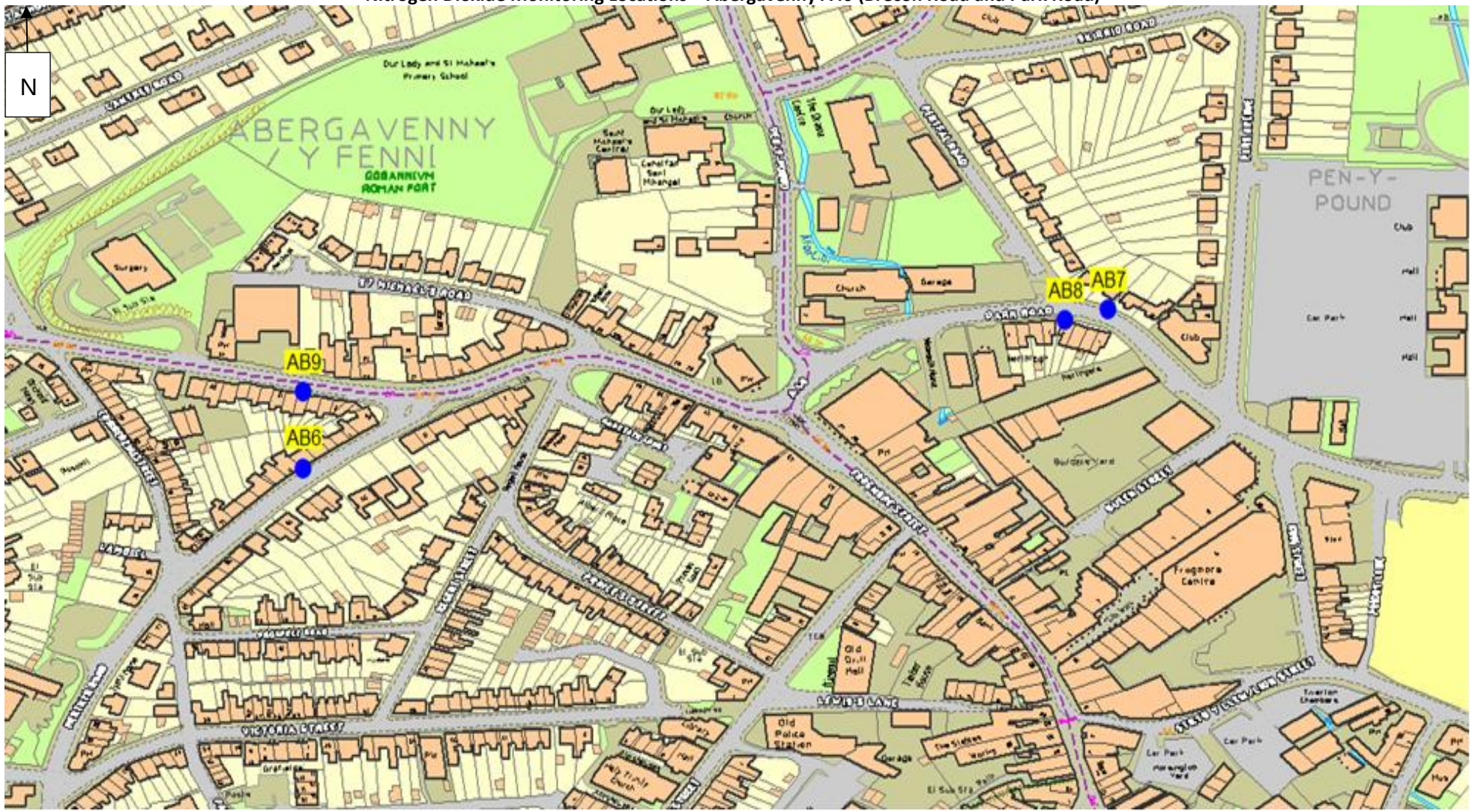
Nitrogen Dioxide Monitoring Locations – Abergavenny, South Merthyr Road



Nitrogen Dioxide Monitoring Locations – Abergavenny, North Merthyr Road



Nitrogen Dioxide Monitoring Locations – Abergavenny A40 (Brecon Road and Park Road)



AB6 was removed and AB9 was installed January 2020

2.2 2023 Air Quality Monitoring Results

Table 2.3 – Annual Mean NO_2 Monitoring Results (µg/m^3) 2007 - 2023

Site ID	Site Type	Monitoring Type	Valid Data Capture for Monitoring Period (%) (1)	Valid Data Capture 2023(%) (2)	NO_2 Annual Mean Concentration (µg/m^3)																
					2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Annual Bias Adjustment Factor (diffusion tubes only)					0.84	0.85	0.84	0.88	0.89	0.94	0.95	0.91	0.91	0.92	0.87	0.92	0.93	0.77	0.84	0.83	0.81
AQMS	Roadside	Automatic Chemiluminescence	96	96	36.9	41.9	38.0	39.0	40.0	39.1	34.5	38.6	37	35	35	36	39	26	29	28	26
CH1	Roadside	Diffusion Tube	100	100	20.0	24.0	21.0	23.5	22.6	25.3	22.4	21.8	22.5	22.9	22.2	19.1	20.1	13.6	15.6	14.9	14.0
CH2a (3)	Roadside	Diffusion Tube	100	100	28.0	33.0	30.0	31.0	30.7	32.0	30.4	33.1	30.9	31.0	27.9	27.8	28.4	22.6	27.9	27.3	25.6
CH3	Roadside	Diffusion Tube	100	100	27.0	31.0	27.0	28.7	32.8	35.5	32.7	32.5	29.8	31.1	29.9	26.5	28.8	20.4	23.4	22.5	20.8
CH4	Roadside/	Diffusion Tube	92	92	**49.0**	**57.0**	**54.0**	**51.5**	**60.1**	**60.3**	**56.0**	**57.7**	**51.4**	**53.2**	**51.1**	**42.5**	**42.3**	31.6	36.0	33.9	30.9
CH5	Roadside	Diffusion Tube	100	100	29.0	32.0	30.0	30.3	30.4	33.2	28.4	26.1	25.9	26.7	26.8	23.5	26.0	19.1	19.0	19.3	17.5
CH6	Roadside	Diffusion Tube	100	100	37.0	**41.0**	36.0	39.2	40.7	**42.6**	**41.7**	**40.0**	36.8	37.6	37.1	34.3	34.7	27.4	28.2	26.3	23.0
CH7	Roadside	Diffusion Tube	100	100	29.0	32.0	30.0	31.5	30.4	33.7	30.6	28.4	26.9	27.9	25.9	25.1	25.5	18.1	22.0	21.0	17.6
CH8	Kerbside/ Urban Centre	Diffusion Tube	92	92	28.0	33.0	32.0	32.5	32.9	35.5	31.1	31.8	28.1	27.7	27.1	26.4	26.3	18.3	21.0	20.9	18.1
CH9	Roadside	Diffusion Tube	100	100	25.0	29.0	28.0	28.7	30.5	30.7	28.1	27.8	25.5	27.2	26.8	23.6	24.2	17.4	20.5	20.4	17.6
PWLL1(3)	Roadside	Diffusion Tube	100	100													25.5	32.0	35.8	33.0	30.8
PWLL2(3)	Roadside	Diffusion Tube	100	100													26.5	19.9	23.8	22.8	20.6
PWLL3(3)	Roadside	Diffusion Tube	100	100													29.9	30.6	32.9	33.0	29.5
PWLL4	Roadside	Diffusion Tube	100	100													21	14.0	16.4	15.5	14.4

Site ID	Site Type	Monitoring Type	Valid Data Capture for Monitoring Period (%) (1)	Valid Data Capture 2023(%) (2)	NO_2 Annual Mean Concentration (µg/m³)															
					2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Annual Bias Adjustment Factor (diffusion tubes only)					0.84	0.85	0.84	0.88	0.89	0.94	0.95	0.91	0.91	0.92	0.87	0.92	0.93	0.77	0.84	0.83	0.81
MM1	Roadside	Diffusion Tube	100	100	39.0	38.5	37.3	36.6	36.9	39.0	34.1	34.9	32.8	33.1	33.9	31.6	30.4	22.9	24.9	24.9	22.3
MM2	Intermediate	Diffusion Tube	92	92	31.0	31.7	30.0	31.3	31.7	30.2	29.9	30.0	26.1	26.5	26.9	25.7	23.5	15.6	18.7	18.6	17.6
MM3	Kerbside	Diffusion Tube	100	100	30.0	27.8	27.6	30.0	29.8	27.7	26.3	26.3	22.9	23.4	23.9	22.5	21.2	15.2	16.7	17.3	15.7
MM4	Kerbside/ Urban Centre	Diffusion Tube	92	92	38.0	37.1	34.6	36.1	34.9	36.7	35.7	29.8	26.0	26.4	25.2	24.1	24.8	15.1	16.9	18.9	16.0
MM7	Intermediate	Diffusion Tube	100	100								27.4	24.3	25.3	23.8	22.9	21.5	14.3	17.1	18.1	16.5
MM9	Intermediate	Diffusion Tube	100	100								24.7	21.8	23.2	21.5	20.5	18.7	15.0	14.8	14.7	13.4
MM11	Roadside	Diffusion Tube	100	100								31.6	26.4	30.2	27.0	29.0	24.6	17.6	22.4	21.4	20.8
MM13	Roadside	Diffusion Tube	92	92								35.2	32.5	32.1	35.1	32.5	30.0	20.6	22.3	25.4	23.7
MM15	Roadside/ Urban Centre	Diffusion Tube	100	100								32.9	33.1	33.7	32.3	31.8	30.7	17.4	23.3	23.1	20.1
MM17	Roadside/ Urban Centre	Diffusion Tube	100	100									22.6	24.5	22.7	21.6	21.6	12.2	15.3	15.0	13.9
MM18	Roadside	Diffusion Tube	100	100									26.7	28.1	28.7	25.9	24.1	15.8	19.5	19.4	17.9
MM19	Roadside	Diffusion Tube	100	100									29.3	31.2	28.2	30.0	27.6	17.0	21.3	21.1	19.1
MM21	Roadside	Diffusion Tube	83	83									32.1	34.6	32.6	32.2	29.8	15.9	22.0	21.7	18.3
MM22	Roadside	Diffusion Tube	100	100																	7.6
AB1 (3)	Kerbside	Diffusion Tube	92	92	34.0	36.5	36.0	38.6	39.4	**41.4**	37.5	39.3	36.1	38.4	38.0	36.9	35.4	27.3	29.8	31.3	26.2
AB2	Roadside	Diffusion Tube	100	100						**43.9**	36.7	39.1	34.4	35.0	32.7	33.8	31.4	21.7	25.5	25.3	23.0

Site ID	Site Type	Monitoring Type	Valid Data Capture for Monitoring Period (%) (1)	Valid Data Capture 2023(%) (2)	NO_2 Annual Mean Concentration (µg/m³)															
					2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Annual Bias Adjustment Factor (diffusion tubes only)					0.84	0.85	0.84	0.88	0.89	0.94	0.95	0.91	0.91	0.92	0.87	0.92	0.93	0.77	0.84	0.83	0.81
AB3	Roadside	Diffusion Tube	100	100						36.8	30.0	29.0	26.1	26.8	25.4	28.5	27.5	17.0	20.6	20.2	19.1
AB4	Roadside	Diffusion Tube	100	100							27.6	27.8	26.5	26.4	25.5	27.6	25.0	18.5	20.7	21.2	18.7
AB5	Roadside	Diffusion Tube	100	100							21.4	19.8	17.2	19.4	18.6	19.0	17.9	11.6	13.6	14.0	12.2
AB7	Kerbside	Diffusion Tube	100	100													22.6	17.2	17.1	17.4	18.6
AB8	Roadside	Diffusion Tube	100	100													20.1	13.5	16.9	16.9	14.0
AB9	Roadside	Diffusion Tube	100	100														24.3	26.3	25.5	22.6
USK1	Roadside	Diffusion Tube	100	100	33.0	32.8	31.1	34.9	32.9	33.0	33.5	34.3	30.1	30.5	31.7	27.2	28.5	19.2	19.7	18.4	16.8
USK2	Roadside/ Urban Centre	Diffusion Tube	100	100	37.0	37.2	34.4	**40.9**	37.0	38.3	37.2	37.3	34.1	34.4	34.7	31.3	31.4	23.5	24.6	24.2	22.2
USK3	Roadside/ Urban Centre	Diffusion Tube	100	100	**40.0**	38.9	35.3	**40.6**	39.7	**41.9**	**40.3**	37.6	32.8	35.1	36.6	32.1	33.3	20.6	23.0	24.6	22.4
USK4	Roadside/ Urban Centre	Diffusion Tube	92	92	39.0	39.0	35.4	**41.7**	**40.7**	**43.5**	**42.0**	**40.4**	34.1	35.2	35.1	30.4	31.3	19.6	22.0	22.8	21.8
USK5	Roadside/ Urban Centre	Diffusion Tube	92	92	**49.0**	**45.6**	**41.9**	**45.0**	39.7	**44.6**	**43.1**	**40.9**	38.2	37.8	35.2	30.0	30.8	24.3	25.0	23.7	22.0
USK6	Roadside/ Urban Centre	Diffusion Tube	100	100	24.0	21.6	20.9	25.6	20.7	22.6	22.2	20.6	19.2	20.8	20.8	19.6	19.3	14.2	15.5	13.9	13.6
WS1	Kerbside	Diffusion Tube	100	100											25.8	23.8	23.5	16.3	18.0	17.8	16.5
WS2	Roadside	Diffusion Tube	92	92											29.6	27.1	27.8	18.5	19.7	20.4	18.8
WS3	Roadside	Diffusion Tube	100	100											21.3	22.6	20.4	14.0	16.1	15.4	14.3

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.**

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.

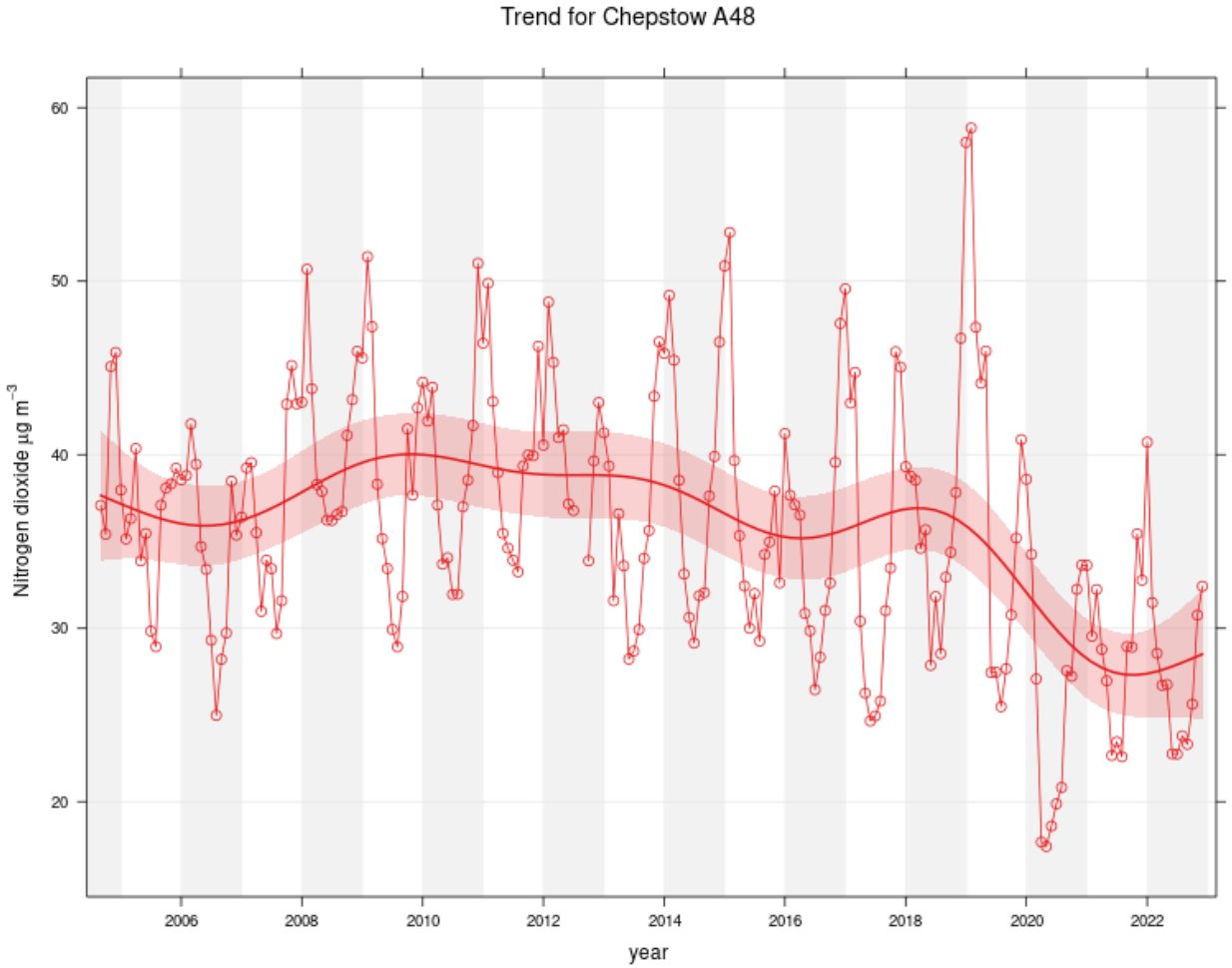
(1) Data capture for the monitoring period, in cases where monitoring was only carried out for part of the year.
In 2020 (due to COVID-19) the valid monitoring period is ten months - March – December 2020 for tubes analysed by SOCOTEC. January and February tubes were analysed by Gradko and were not used in the calculation of the annual mean, or calculation of the BAF

(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%).

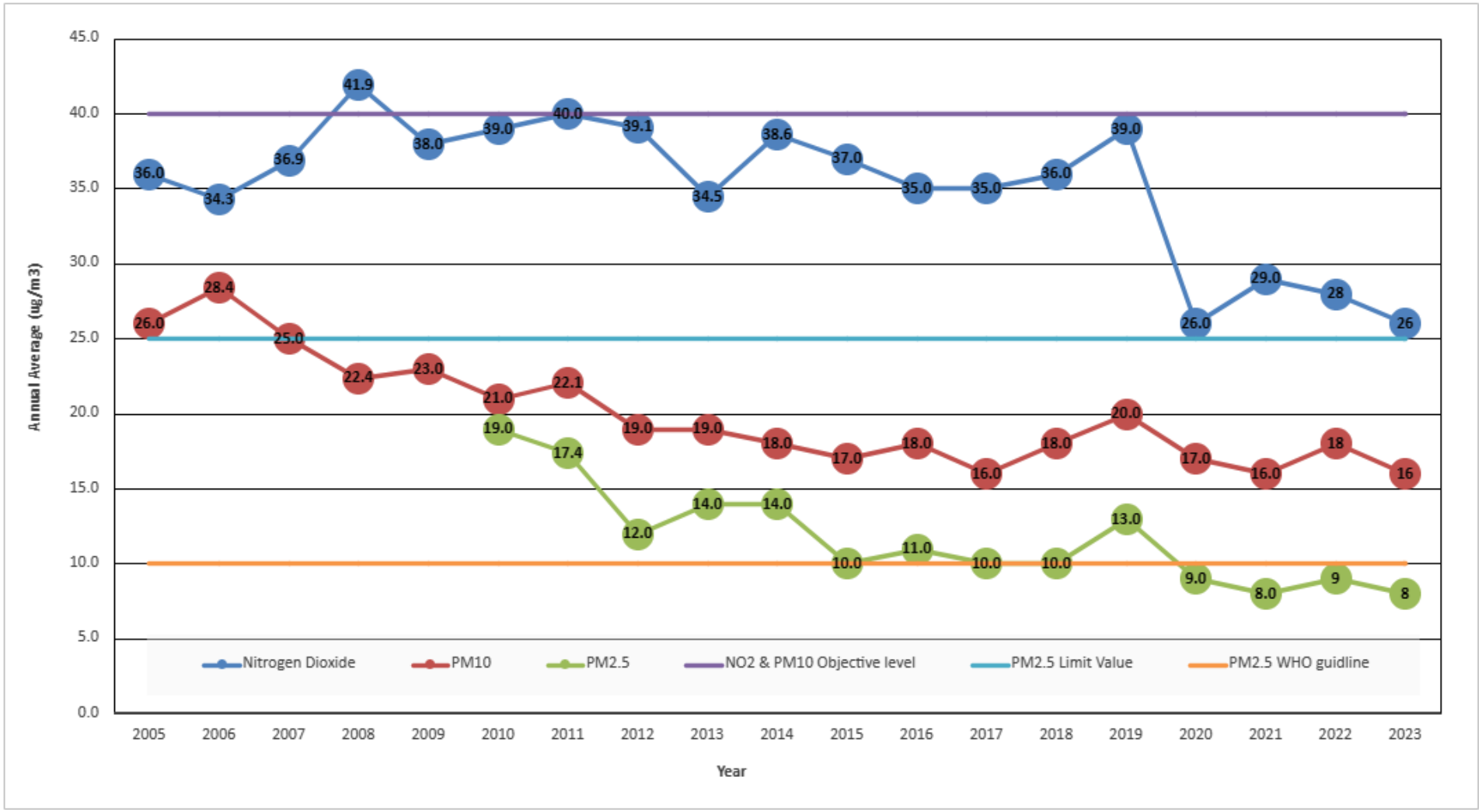
(3) Prior to 2020 AB1, CH2a, PWLL1, PWLL2, PWLL3 were distance corrected to the nearest receptor. From 2020 onwards they are only distance corrected if the uncorrected value is within 10% of the objective level (i.e., 36µg/m^3 or above). As such 2020 onwards concentrations for these locations could be higher than previous year's as they show the actual concentration at the tube/kerbside/roadside, rather than the concentration at the nearest receptor, unless their uncorrected concentration is above 36µg/m^3.

Figure 2.3 – Trends in Annual Mean NO_2 Concentrations

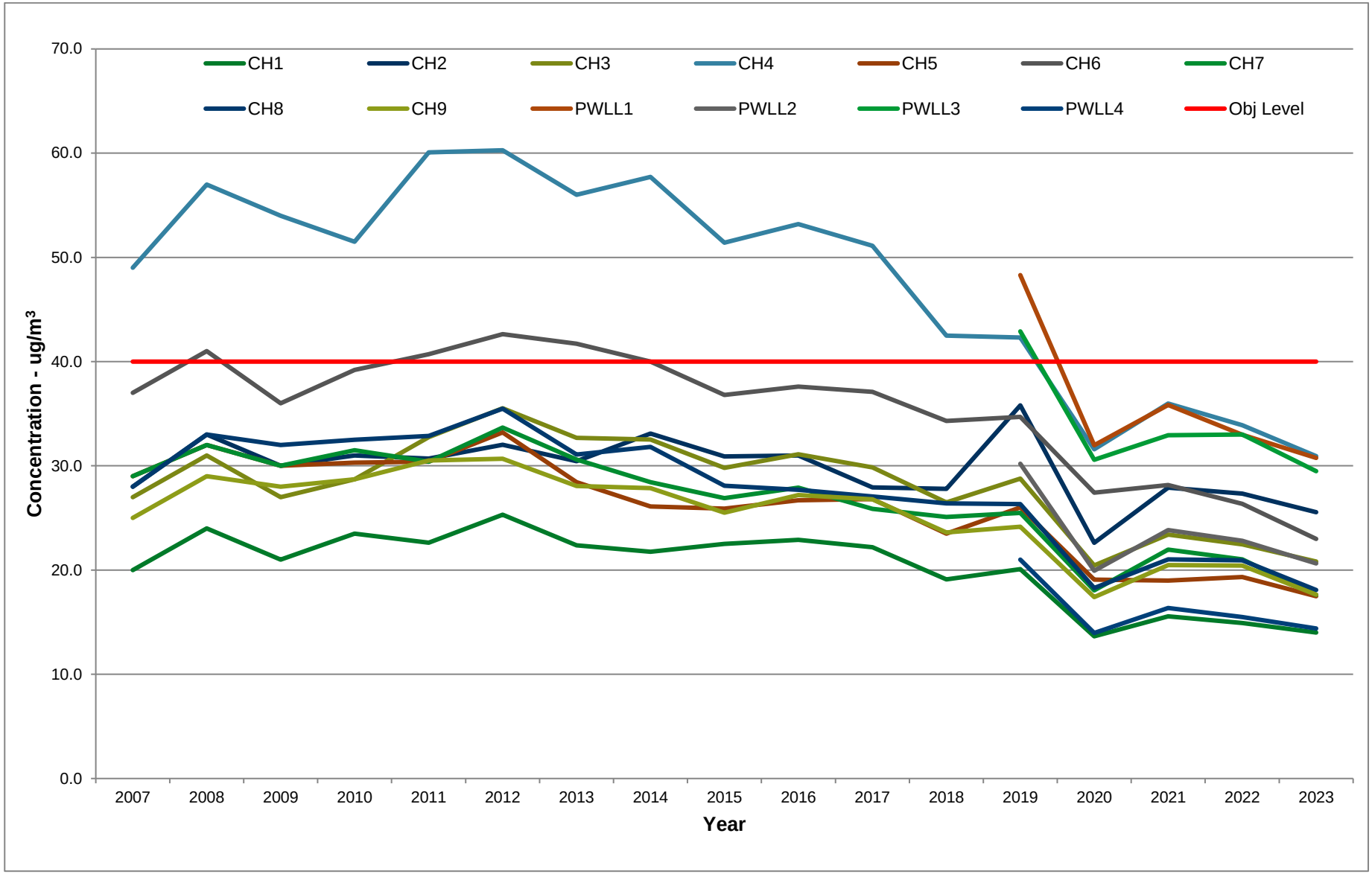
Automatic analyser – (AQMS) nitrogen dioxide monthly average with smoothed trend line 2005-2022. An updated plot for 2023 could not be produced due to a system error on the OpenAir plot website



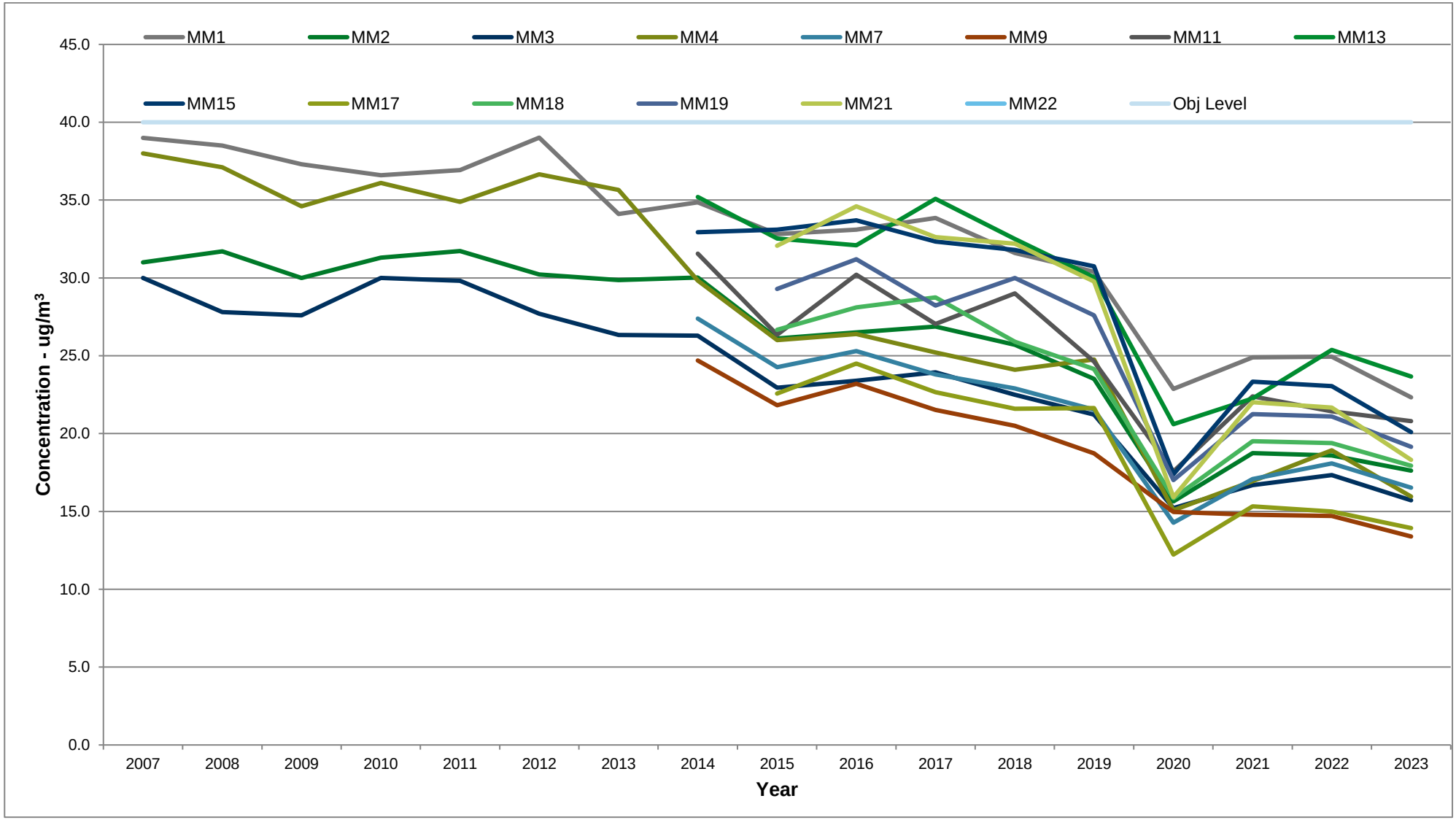
Automatic analyser – (AQMS) nitrogen dioxide, PM10 and PM2.5 annual mean 2005-2023



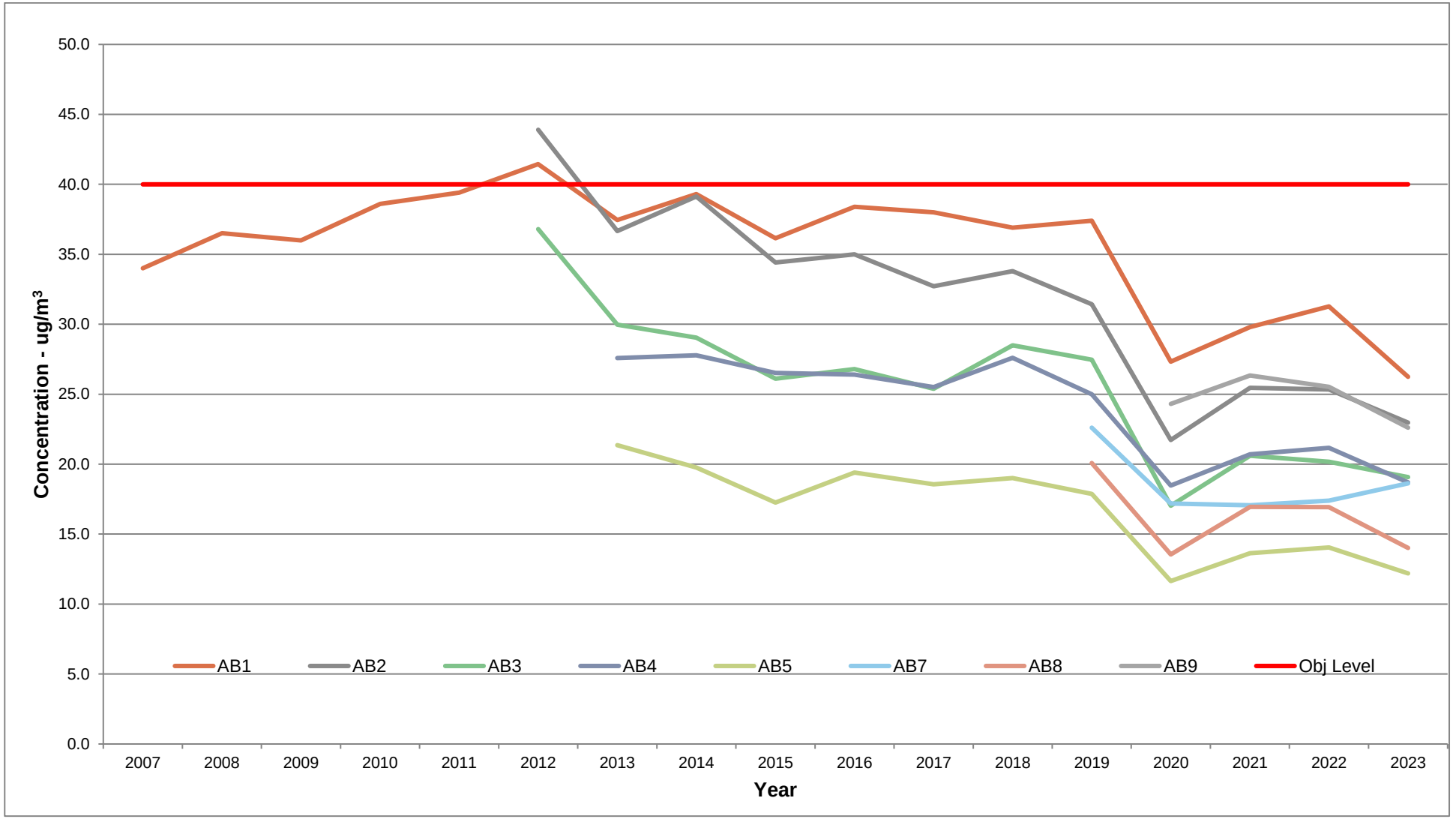
Diffusion Tubes trends (Chepstow & Pwllmeyric) – 2007-2023



Diffusion Tubes trends (Monmouth) – 2007-2023



Diffusion Tubes trends (Abergavenny) – 2007-2023



Diffusion Tubes trends (Usk & Woodside) – 2007-2023

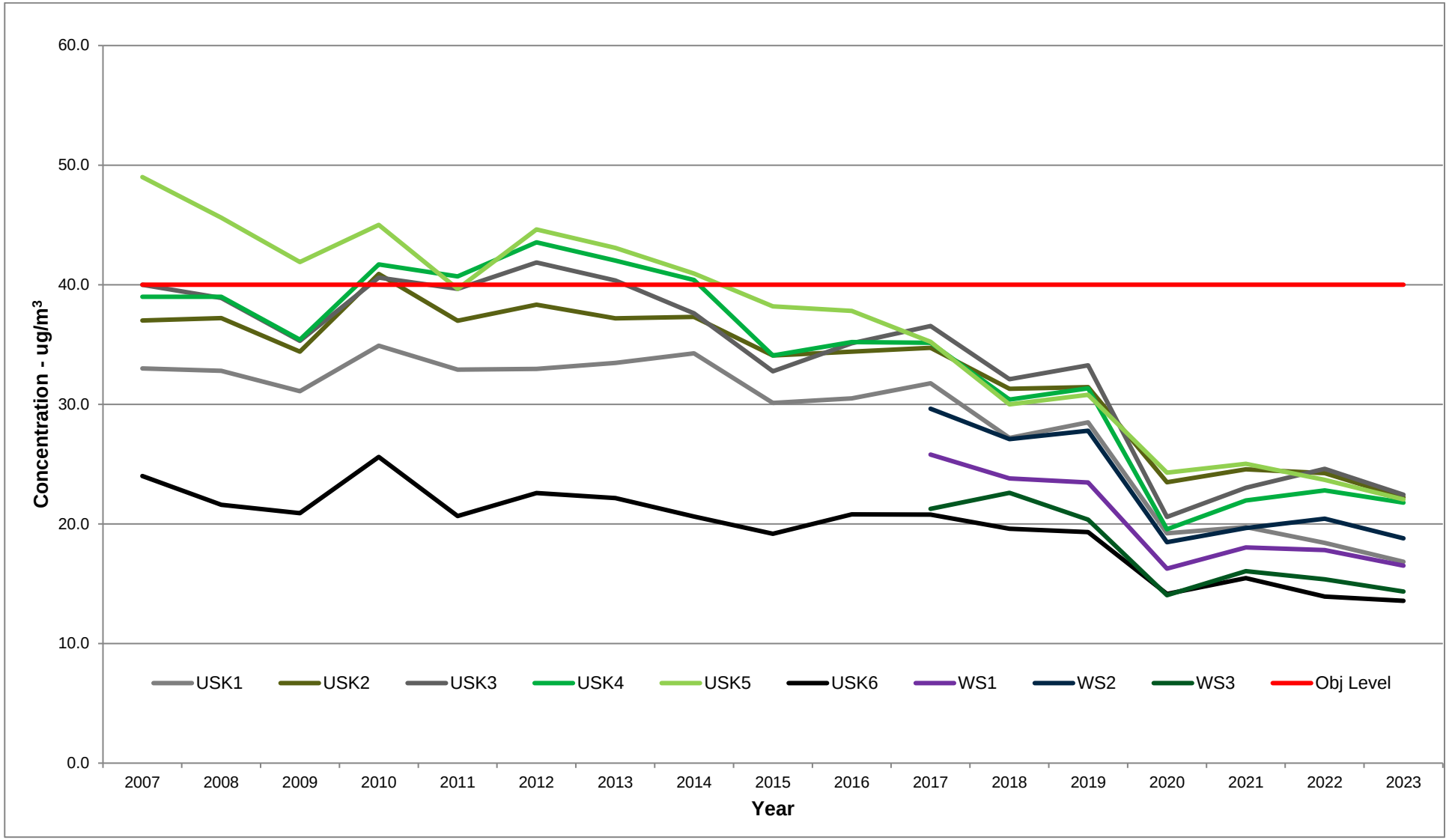


Table 2.4 – 1-Hour Mean NO_2 Monitoring Results, Number of 1-Hour Means > 200µg/m^3

Site ID	Site Type	Monitoring Type	Valid Data Capture for Monitoring Period (%) (1)	Valid Data Capture 2021 (%) (2)	NO_2 1-Hour Means > 200µg/m^3										
					2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
AQMA	Roadside	Automatic Chemiluminescence	96	96	0	0	2	0	0	0	1	0	0	0	0
1-hour mean objective					**200µg/m^3 not to be exceeded more than 18 times/year**										

Notes:

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

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

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

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

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

Site ID	Site Type	Monitoring Type	Valid Data Capture for Monitoring Period (%) (1)	Valid Data Capture 2018 (%) (2)	PM_{10} Annual Mean Concentration (µg/m^3)										
					2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
AQMA	Roadside	Automatic BAM	96	96	19	18	17	18	16	18	20	17	16	18	16
Annual mean objective					**40µg/m^3**										

Notes:

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

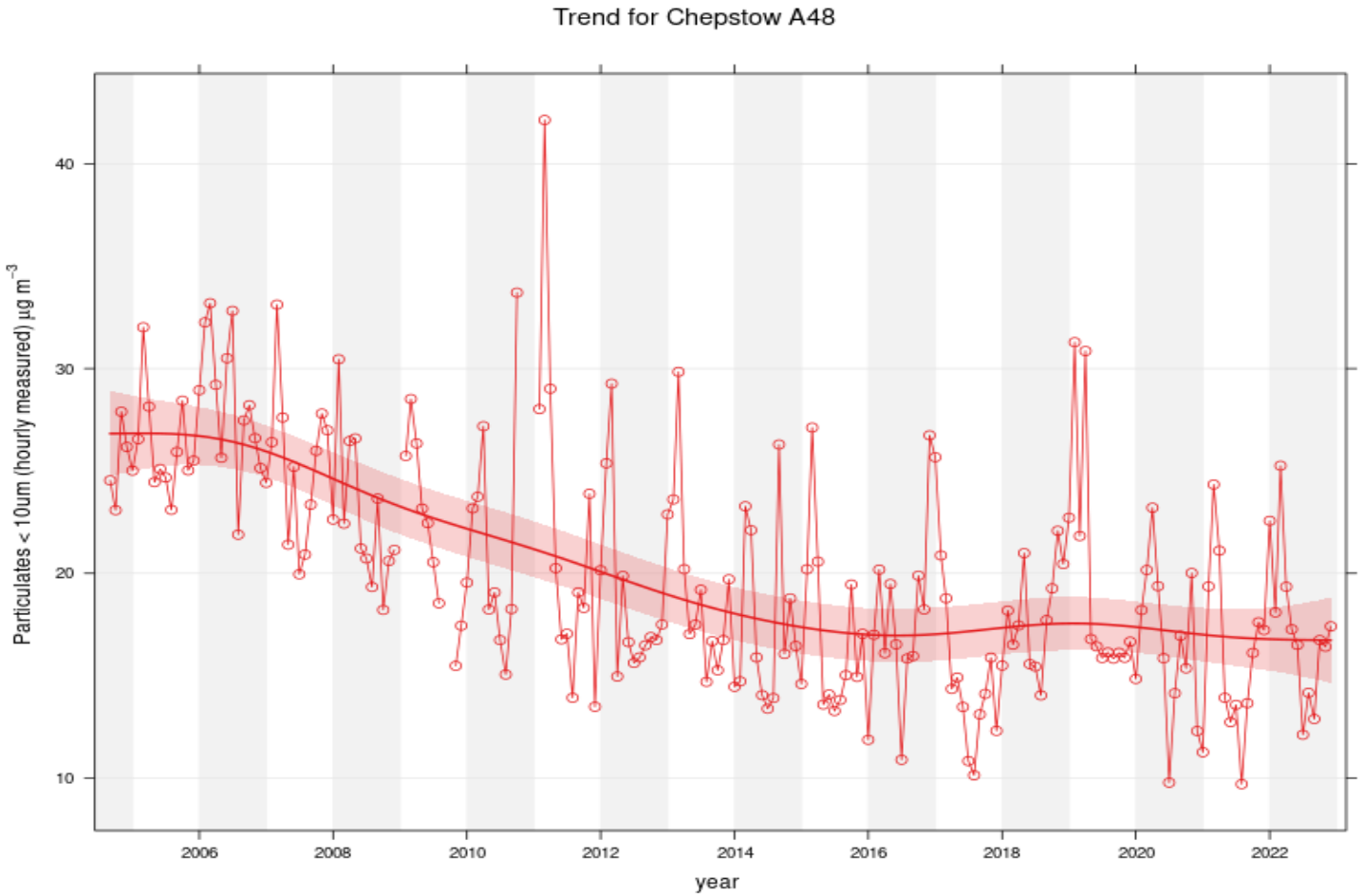
All means have been "annualised" as per LAQM.TG16 if valid data capture for the full calendar year is less than 75%. See Appendix C for details.

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

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

Figure 2.4 – Trends in Annual Mean PM_{10} Concentrations

Automatic analyser – AQMS – PM_{10} monthly average with smoothed trend line. An updated plot for 2023 could not be produced due to a system error on the OpenAir plot website



Automatic analyser – (AQMS) PM_{10} annual mean

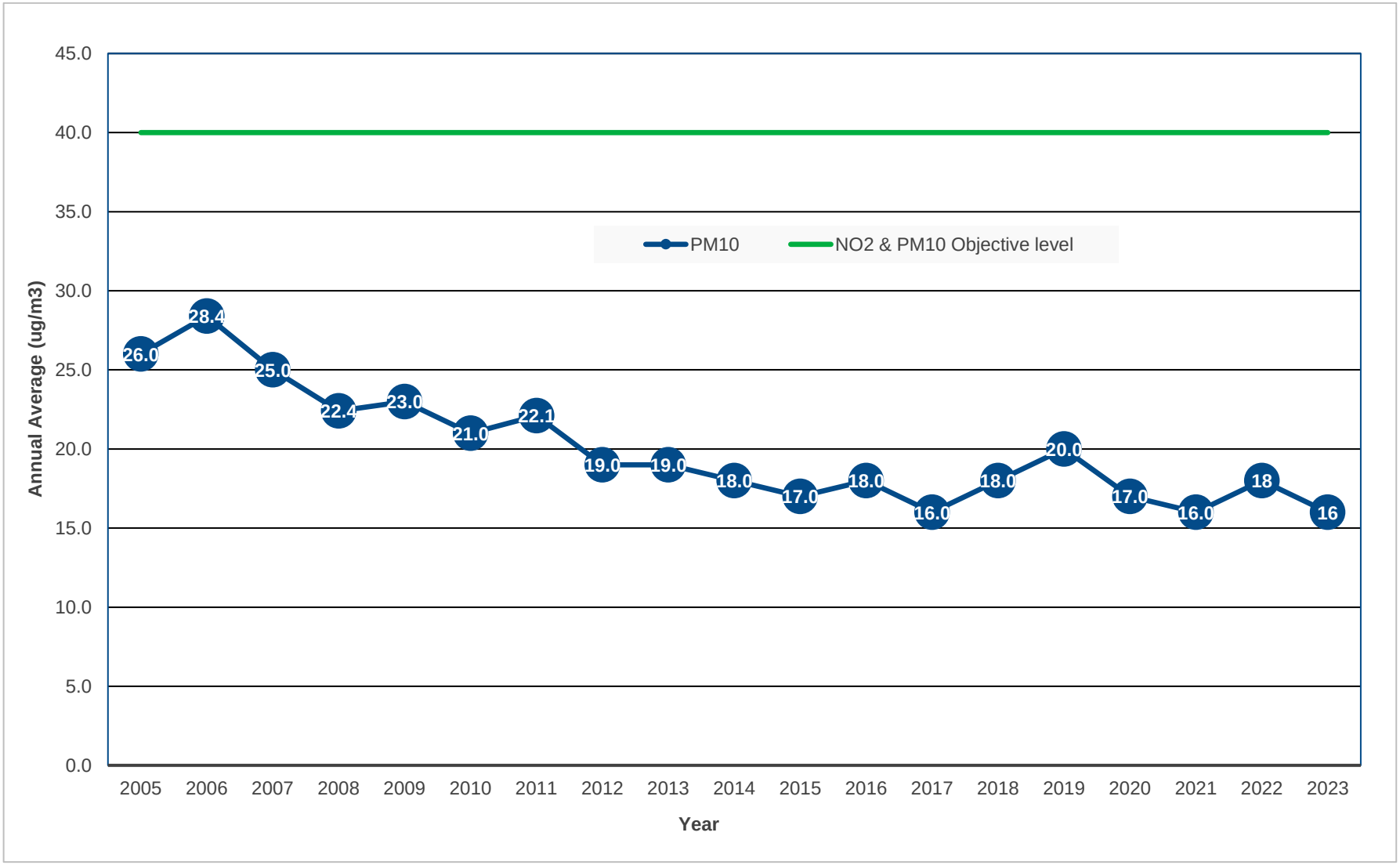


Table 2.6 – 24-Hour Mean PM_{10} Monitoring Results, Number of PM_{10} 24-Hour Means > 50µg/m^3

Site ID	Site Type	Monitoring Type	Valid Data Capture for Monitoring Period (%) (1)	Valid Data Capture 2021 (%) (2)	PM_{10} 24-Hour Means > 50µg/m^3										
					2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
AQMA	Roadside	Automatic BAM	96	96	4	2	5	1	2	0	7	0	1	0	0
24-hour mean objective					50µg/m^3 not to be exceeded more than 35 times/year										

Notes:

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

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

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

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

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

Site ID	Site Type	Monitoring Type	Valid Data Capture for Monitoring Period (%) [1]	Valid Data Capture 2019 (%) [2]	$PM_{2.5}$ Annual Mean Concentration (µg/m^3)										
					2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
AQMA	Roadside	Automatic BAM	96	96	14	14	10	11	10	10	13	9	8	9	8
Annual mean limit value					25µg/m^3										

Notes:

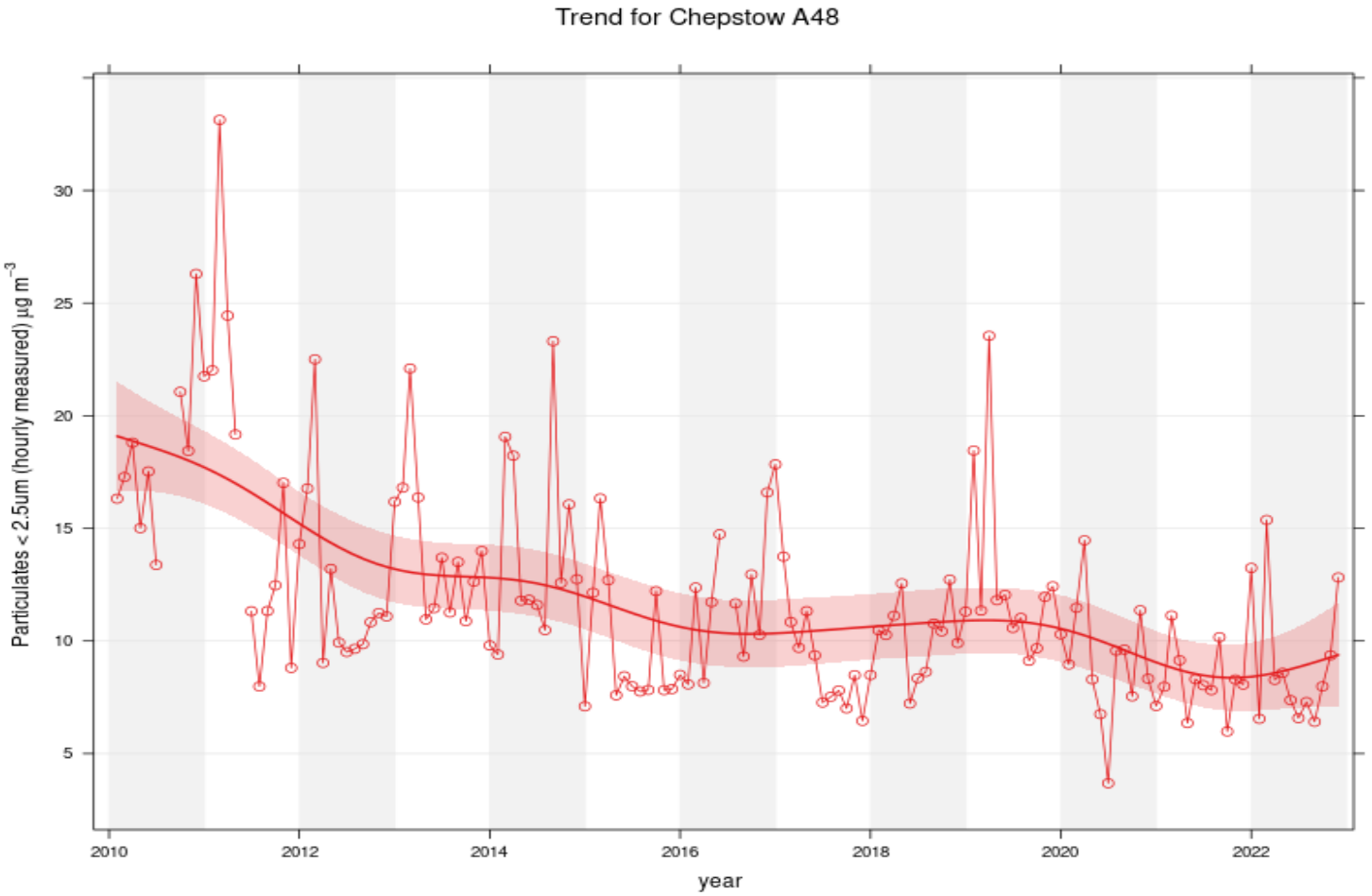
All means have been "annualised" as per LAQM.TG16 if valid data capture for the full calendar year is less than 75%. See Appendix C for details.

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

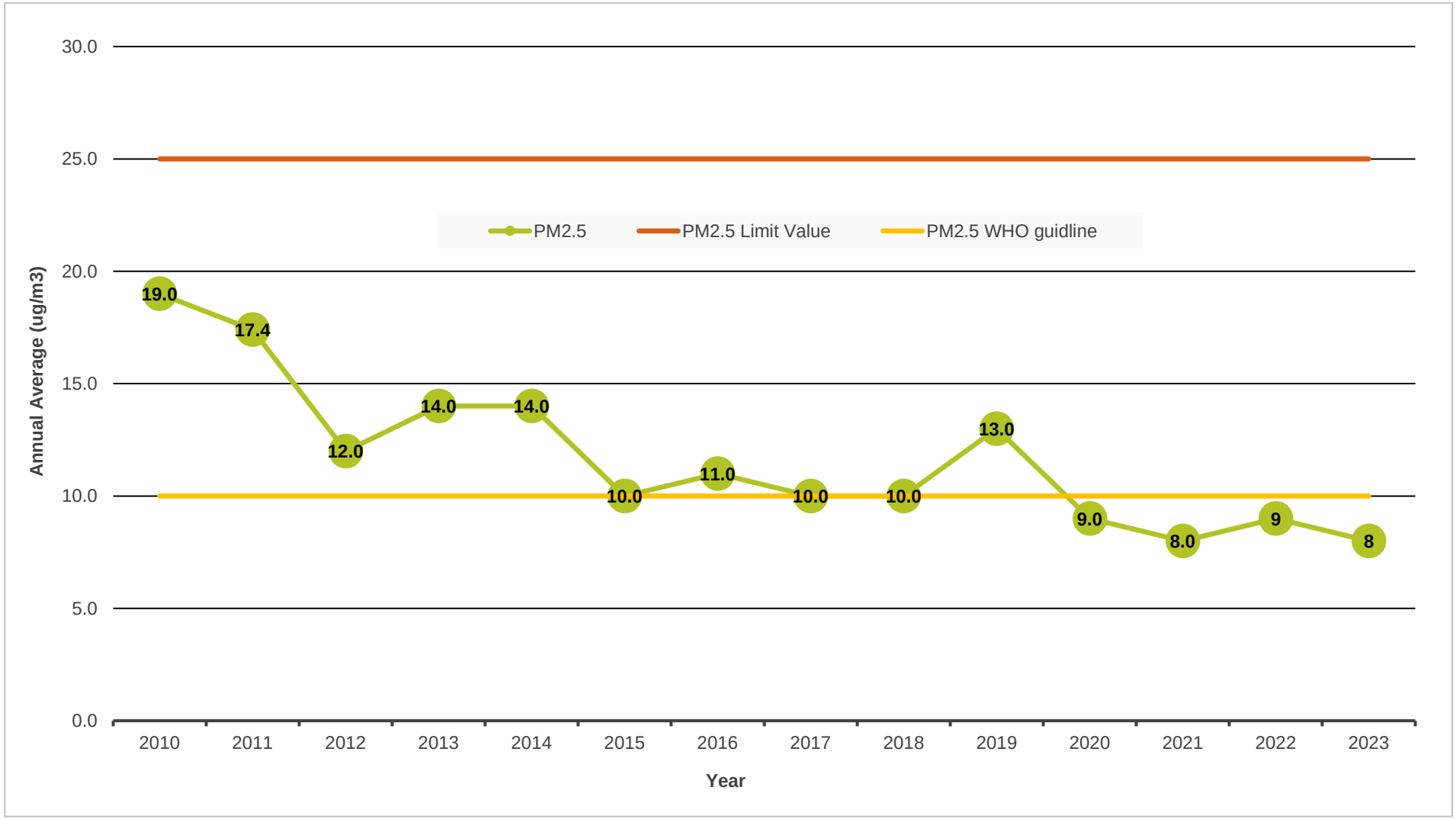
(2) Data capture for the full calendar year (e.g., if monitoring was carried out for 6 months, the maximum data capture for the full calendar year is 50%).

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

Automatic analyser – AQMS – $PM_{2.5}$ monthly average with smoothed trend line. An updated plot for 2023 could not be produced due to a system error on the OpenAir plot website



Automatic analyser – (AQMS) $PM_{2.5}$ annual mean



2.3 Comparison of 2023 Monitoring Results with Previous Years and the Air Quality Objectives

2.3.1 Nitrogen Dioxide (NO_2)

Nitrogen Dioxide Diffusion Tube Concentrations

In 2023 annual mean diffusion tube concentrations decreased at all but one location compared to 2022. These were generally small decreases, but some were large.

- The range of decreases was 0.4-5µg/m^3.
- Nineteen locations decreased by between 2 and 5µg/m^3,
- Twenty-three decreased by between 0.4 and 1.9µg/m^3, and
- One location increased by 1.2µg/m^3.
- One location was newly installed in 2023

The below table highlights the average concentrations of all forty-four monitoring locations present between 2019 and 2023 (i.e. not including the location that was removed in 2023 and the location installed in 2023).

	Diffusion tube concentrations in µg/m^3		
Year	44- tube average	Highest concentration	Lowest Concentration
2019	27.9	42.3	17.9
2020	19.3	31.6	11.6
2021	22.0	36.0	13.6
2022	21.8	33.9	14.0
2023	19.8	30.9	12.2

Nitrogen Dioxide AQMS Concentrations

The nitrogen dioxide concentration recorded by the automatic analyser in the Air Quality Monitoring Station (AQMS) on Hardwick Hill, decreased for a third consecutive year from 29µg/m^3

in 2021, to 28µg/m^3 in 2022 and 26µg/m^3 in 2023. As a result, 2023 recorded the joint lowest concentration on record along with 2020.

Nitrogen Dioxide Summary

Long term trends have identified that there was a gradual decrease in nitrogen dioxide levels from 2012 to 2019, a large decrease in 2020, slight rebound in 2021, but then further decreases in 2022 and 2023. As such nitrogen dioxide concentrations have not returned to the pre-COVID concentrations seen in 2019. Concentrations in 2023 were generally the lowest to date (comparable with 2020).

Nitrogen Dioxide Short Term Objective Level

The nitrogen dioxide short term objective level is a one hour mean of 200µg/m^3 not to be exceeded more than 18 hours a year. In 2023 there were no 1-hour periods that exceeded 200 µg/m^3. As such there was no breach of the objective level. The last time there was an exceedance of the 1-hour mean of 200 µg/m^3 was in 2019, when there was one exceedance, and prior to that in 2015, when there were two 1-hour exceedances.

The highest hourly mean in 2023 was 109µg/m^3 (decreasing from 130µg/m^3 in 2023) and the highest daily mean recorded at the AQMS was 50µg/m^3, which was a decrease from the 69µg/m^3 recorded in 2022 (there is no daily objective level).

The World Health Organisation guideline value for short-term exposure for nitrogen dioxide is the same as the current objective levels set by the UK and EU.

Nitrogen Dioxide Long Term Objective Level

In 2023 there were no exceedances of the NO_2 annual mean objective level of 40 µg/m^3. This was the fourth year where there were no exceedances in the county (2020-2023).

In 2019 there was one exceedance, and this was measured by diffusion tube. The exceedance occurred in the Chepstow AQMA (monitoring reference - CH4) which recorded 42.3 µg/m^3. In 2020 this same location recorded 31.6µg/m^3, which is the lowest recorded concentration at this location, and the first year that the location has not exceeded the objective level. In 2021 the concentration increased to 36µg/m^3 which is still 10% lower than the objective level, in 2022 it decreased to 33.9 µg/m^3, and decreased further in 2023 to its lowest concentration to date of 30.9µg/m^3.

CH4 has always recorded the highest concentration in the county at a relevant exposure (i.e., on a house) (in 2012 it reached 60.3µg/m^3) and remained the highest recorded relevant exposure location in 2023.

The only locations of similar concentration in 2023 were PWLL1 and PWLL3 which recorded 30.8µg/m^3, and 29.5µg/m^3 but these are roadside locations with the nearest houses 17 and 5.6 metres away. The fall off with distance calculation indicates that the concentration at the houses would be 16.8µg/m^3 and 22.4 µg/m^3 respectively.

The automatic analyser in the AQMA on Hardwick Hill did not exceed the annual objective level and recorded an annual mean of 29µg/m^3 in 2021, 28 µg/m^3 in 2022 and 26µg/m^3 in 2023. This is a 13µg/m^3 decrease from 2019 when it reached 39 µg/m^3, and a return to the lowest concentration of 26µg/m^3 in 2020. 2019 was the highest concentration since 2012, and a 3 µg/m^3 increase over 2018.

The World Health Organisation guideline value for long term exposure for nitrogen dioxide is the same as the current objective levels set by the UK and EU.

Nitrogen Dioxide Summary for Usk & Woodside

Despite two peaks (in 2010 and 2012) nitrogen dioxide concentrations have decreased steadily since 2007. For example, the location referenced USK5 has decreased from a peak of 49µg/m^3 in 2007 to a current all-time low of 22µg/m^3 in 2023. The location with the lowest recorded concentrations

(USK6) has reduced from a high of 25.6µg/m^3 in 2010 to its current low of 13.6µg/m^3 in 2023. Similar decreases have occurred in all six Usk locations and the three Woodside locations.

Average concentrations across all 6 Usk monitoring locations have decreased from 37µg/m^3 in 2007 to 19.8µg/m^3 in 2003.

The larger than normal decrease that occurred in 2020 due to nationwide lockdowns caused by the COVID-19 pandemic did not result in a return to 2019 concentrations in 2021 (although they did increase), and concentrations reduced in both 2022 and 2023. The 2023 concentrations are like those recorded in 2020 – thereby some of the lowest since monitoring began in 2007) (19.8µg/m^3 6-tube average in 2023 and 19.3µg/m^3 6-tube average in 2020).

All nine-locations decreased in 2023 compared to 2022 by an average of 2µg/m^3 with a range of between 0.4µg/m^3 (USK6) and 2.2µg/m^3 (USK3).

The canyon effect of Bridge Street, and the junction with Porthycarne Street and Maryport Street (monitored by locations USK2, 3, 4, and 5) were all within similar ranges of each other (21.8 to 22.4µg/m^3), whilst USK1 and USK6 which are either end of the AQMA and Bridge Street were significantly lower at 16.8 and 13.6µg/m^3 respectively. It is likely that the improvement in double yellow line enforcement, and the implementation of the Lorry Watch scheme has meant that congestion has improved through Bridge Street and contributed to the air quality improvement in this area.

The three tubes in Woodside have been below the objective level since they were installed in 2017. The location with the highest concentrations between 2017 and 2023 is WS2. 2017 was the highest concentration at 29.6 µg/m^3 and 2023 was the lowest at 18.8 µg/m^3. Therefore, This part of Usk is not at risk of exceeding the nitrogen dioxide objective level, however monitoring is continuing in 2024.

In 2010 four of the six Usk monitoring locations were in exceedance of the objective level of 40µg/m^3 (USK2,3,4 and 5), however there have been no exceedances since 2015, and there have been no exceedances of 36µg/m^3 (which is 90% of the objective level – to factor in diffusion tube inaccuracy) since 2017.

Therefore, the Objective Level has not been exceeded for nine years and no locations have been over 90% of the Objective Level (36µ/m^3) for six years. In 2023 the highest 4 locations (2,3,4 & 5) were all around 45% of the objective level of 40µg/m^3.

36 µg/m^3 is an important concentration as it is 10% lower than the objective level. This is protective enough to be confident levels are below the objective level (considering the 10% uncertainty with diffusion tubes). Typically, five continuous years below 36 µg/m^3 is considered appropriate period to revoke an AQMA. As of 2023 Usk has had six continuous years below 36µg/m^3.

The Usk Air Quality Steering Group has considered how many additional years to keep the AQMA to ensure the pre-pandemic concentrations will not return. At previous meetings seven years was proposed. This has been accepted by Welsh Government.

Therefore if 2024 does not exceed 36µg/m^3, and it does not appear that concentrations are significantly increasing, the AQMA can be revoked early 2025.

<u>Nitrogen Dioxide Summary for Chepstow & Pwllmeyric</u>

There have been three locations that have historically exceeded the nitrogen dioxide objective level in the Chepstow AQMA: -

- The Automatic Air Quality Monitoring Station, which last exceeded in 2011,
- CH6 which last exceeded in 2014, and
- CH4 which last exceeded in 2019.

Nitrogen Dioxide has decreased steadily since 2012 from a high of 60.3µg/m^3 at CH4 (the location with the highest concentrations each year) to a pre-pandemic low of 42.3µg/m^3 in 2019 and an all-time low of 30.9µg/m^3 in 2023 at the same location. 30.9µg/m^3 was the highest concentration recorded in 2023.

The nitrogen dioxide concentrations recorded by the automatic analyser varied between 2007 and 2019 with some years decreasing and some increasing. They ranged between 41.9µg/m^3 (2007) and 34.5µg/m^3 (2013) however typically hovered around 36 µg/m^3 with a peak in 2019 back to 39 µg/m^3. In 2020 there was a clear step change in concentrations at the AQMS to a new range of between 26 µg/m^3 and 29 µg/m^3 with a four-year average of 27.25 µg/m^3.

All locations (diffusion tube and AQMS), decreased in 2023 compared to 2022, for example CH4 decreased by 3.3µg/m^3 from 33.9µg/m^3 in 2022 to 30.9µg/m^3 in 2023. The average concentration for all ten Chepstow locations in 2023 was 21.8µg/m^3, down from 24.1µg/m^3 in 2022.

As a result, 2023 was the fourth consecutive year with no exceedance of the nitrogen dioxide annual mean Objective Level in Chepstow, and the second below 90% of the objective level (36µg/m^3).

The four diffusion tubes installed in Pwllmeyric in October 2018 (alongside the A48, southwest of the Chepstow AQMA) also decrease between 2019 and 2023. Concentrations at nearest receptors were all below the objective level in 2019, with the highest concentration at PWLL3 of 42.9µg/m^3 at roadside and estimated at closest receptor of 29.9 µg/m^3.

In 2023 concentrations at PWLL3 roadside had decreased to 29.5µg/m^3 which is calculated to be 22.49 µg/m^3 at receptor.

<u>Nitrogen Dioxide Summary for Monmouth</u>

Within Monmouth, monitoring is undertaken along the A40 and within the town centre. Concentrations since 2012 generally decreased and then stabilised, with a further drop in 2020 due

to the pandemic, and a slight increase in 2021. There was then a decrease in 2022 and again in 2023 across all locations.

One of the longer-term monitoring locations (MM1 – Wyebridge Street) reached its highest concentration in 2012 of 39 µg/m^3, then reduced and stabilised at 33-34 µg/m^3 up until 2017 decreased again to 30.4 in 2019, and 22.9 µg/m^3 in 2020, and increased to 24.9µg/m^3 in 2021 and 2023 but in 2023 it reduced again to 22.3µg/m^3.

Monitoring location MM11 (Fence of Monmouth School), is located next to the School Playground, and therefore installed to indicate the possibility of an exceedance of the short term (1-hour nitrogen dioxide objective level of 200 µg/m^3 not to be exceeded more than 18 times a year). Guidance from DEFRA, based on studies states that if the annual mean objective is below 60 µg/m^3, the 1-hour objective is unlikely to be exceeded, and as MM11 has consistently been in the mid-20 to low 30's (20.8 µg/m3 in 2023) since installation in 2014, MCC are confident that the 1-hour objective level is not being exceeded at this location.

Nitrogen Dioxide Summary Abergavenny

Nitrogen dioxide diffusion tube monitoring in Abergavenny is mainly located along the A4143 (Merthyr Road), and the A40 (Brecon Road) and potential issues have been identified at a pinch point between Llanfoist Bridge and Llanfoist Roundabout on Merthyr Road.

AB1 is not in an Air Quality Management Area, although due to increases recorded at the location since 2010, and as a result of an exceedance in 2012 (41.5µg/m^3) additional monitoring locations were set up along Merthyr Road in 2012 and 2013 and have remained in place since those dates. The cause of the increase is possibly due to the additional housing, and retail development that has occurred in Llanfoist and on Merthyr Road in recent years. There could also have been some impacts with the Heads of The Wales (A465) duelling programme between Govilon and Brynmawr, and before that in Llanfoist. Those works are now complete however, therefore 2022 and 2023 would not be affected.

AB1 is located on the northbound side of the road next to a bridge across the river Usk. This is the only foot and road bridge across the river to connect Llanfoist and Abergavenny. It is also next to a roundabout that provides access to a Supermarket & Petrol Station, Llanfoist and the A465 itself, and there can be congestion at peak traffic times on the bridge and the short stretch of road between the bridge and the roundabout.

On that stretch of road there is one house on the northbound side and a Kwik Fit garage, and a Public House and a row of cottages comprising seven residential properties and one business on the southbound side. There is another diffusion tube monitoring location on the southbound side of the road (AB2) that was installed in 2012.

Since the exceedance in 2012 at AB1 and the installation of AB2 opposite it, concentrations have not exceeded again, and there has been a general decrease at both sides of the road. In 2021 AB1 was 29.8 µg/m^3 and AB2 was 25.5 µg/m^3, and in 2022 remained stable at 31.3 and 25.3 µg/m^3 respectively, and decreased in 2023 to 26.2 and 23µg/m^3.

In June 2019 two additional monitoring locations (AB7 and AB8) were installed on Park Road (A40) to the north of the town centre, on each side of the road, due to a change in road alignments through the town, and the opening of a supermarket on that road. Of the four full calendar monitoring years in between 2020 and 2023 neither location has exceeded 20 µg/m^3 with both remain stable at about 17 µg/m^3. However, in 2023 AB7 was the only monitoring location in the county that increased over 2022 concentrations. It increased by 1.2µg/m^3 to 18.6µg/m^3. AB8 (the tube on the opposite side of the road) decreased by 2.9µg/m^3 to 14µg/m^3.

In January 2020 AB6 which was located at the northern section of Merthyr Road, just before its junction with the A40/Brecon Road, was removed due to seven years of consistently low concentrations (range of 21.8 to 24.3 µg/m^3), and instead a location was established around the corner from it on the busier Brecon Road/A40 and labelled AB9. Concentrations started at 24.3 µg/m^3 and have since remained relatively stable (26.3 µg/m^3, 25.5 µg/m^3 and 22.6µg/m^{3}i n 2023).

2.3.2 Particulate Matter (PM_{10})

PM_{10} concentrations as recorded at the Air Quality Monitoring Station on Hardwick Hill in Chepstow have never exceeded the short or long-term objective levels.

In 2023 the PM10 annual mean concentration decreased by 2µg/m3 (from 18 to 16µg/m3) compared to 2022. This matched the lowest recorded concentrations in 2017, 2021.

The highest daily mean in 2023 was 47µg/m3, which matched 2022, however the highest hourly mean decreased from 186 µg/m3 to 120µg/m3.

Between 2006 and 2012 concentration decreased from 28.4 to 19µg/m3, stabilised between 2012 and 2019 (ranging between 16-20µg/m3), decreased in 2020 and have since stabilised again (ranging between 16-18µg/m3).

Short Term Objective Level

The PM_{10} short term objective level is: -

Not to exceed an average of 50 µg/m^3 in a 24-hour period more than 35 times a year.

The highest daily (12:00am-11:59pm) concentration in 2023 was 47µg/m^3, which occurred on 28th January 2023, as such there were no 24-hour periods with a PM_{10} concentration over 50 µg/m^3, and the short-term objective level (no more than 35 times a year) was not exceeded. Out of interest the daily PM2.5 average on 28th January was not particularly high (12µg/m^3).

The most frequent daily concentration was 15 µg/m^3 which occurred 27 days. There were 69 days above 20µg/m^3, 280 days at or below 20µg/m^3 and 15 days with no data.

2019 recorded the greatest number of 24-hour exceedances at Chepstow with 7 days over 50 µg/m^3 (56, 58, 59, 59, 60, 62, 62 µg/m^3). The previous highest was five days in 2015. There were no days of exceedance in 2018, or between 2020 and 2023 therefore 7 days in 2019, whilst low in comparison to the 35 days that can be exceeded before a breach, was an unusual increase.

Long Term Objective Level

The PM_{10} long term objective level is: *An annual average of 40 µg/m^3*.

The World Health Organisation's guideline concentration for PM_{10} annual mean is 20 µg/m^3.

There has never been an exceedance of the 40 µg/m^3 objective level at Chepstow AQMS, and the last time the WHO's guideline concentration was exceeded was 2011 (22 µg/m^3).

Between 2005 and 2017 PM10 annual average concentrations steadily decreased to their lowest of 16 µg/m^3. However, in 2018 and again in 2019 there was an increase to 18 µg/m^3 and 20 µg/m^3. Therefore, prior to COVID there appeared to be some evidence of an increasing trend in concentrations. However, lockdowns in 2020 resulted in a decreased to 17 µg/m^3, which was 15% reduction over 2019, and this decrease continued into 2021 with an annual average of 16 µg/m^3. The increase in 2022 back to 18 µg/m^3 was not continued in 2023 as concentrations returned to their lowest at 16µg/m^3.

2.3.3 Particulate Matter ($PM_{2.5}$)

Between 2002 and 2023 the PM2.5 annual mean concentration decreased by 1µg/m3 (from 9 to 8µg/m3). This matched the previous lowest recorded concentration in 2021.

Between 2010 and 2015 concentrations decreased from 19 to 10µg/m^3, remained stable between 2015 and 2018 at 10-11 µg/m^3 but increase in 2019 to 13 µg/m^3. It decreased in 2020 to 9µg/m^3 and decreased further in 2021 to 8 µg/m^3. There was a 1µg/m^3 increase in 2022 but decreased back to 8µg/m^3 in 2023. Other than the spike in 2019 concentrations have remained stable (between 8 and 10µg/m^3) since 2017.

The EU $PM_{2.5}$ annual limit value for PM2.5 is:

An annual average of 25 µg/m^3.

The World Health Organisation's guideline concentration for $PM_{2.5}$ is:

An annual mean of 10 µg/m^3.

In 2023 the $PM_{2.5}$ annual average at the Chepstow Air Quality Monitoring Station on Hardwick Hill was 8 µg/$m^{3,}$ and therefore did not exceed either the EU annual limit value of 25 µg/$m^{3,}$ nor the WHO' guideline concentration of 10 µg/$m^{3.}$

$PM_{2.5}$ concentrations at Hardwick Hill have never exceeded the 25 µg/m^3 EU annual limit value.

The WHO guideline concentration of 10µg/m^3 has been met or exceeded ten times in the fourteen years of monitoring:

Exceeded: 2010 (19µg/m^3), 2011 (17µg/m^3), 2012 (12µg/m^3) 2013 & 2014 (14µg/m^3), 2016 (11µg/m^3) and 2019 (13µg/m^3).

Reached: 2015, 2017 and 2018 (10µg/m^3)

It is only in the last four years, since 2020, that the concentrations have fallen below the 10µg/m^3 guideline value, where they have remained stable at 8 and 9µg/m^3.

2.4 Summary of Compliance with AQS Objectives as of 2023

General Summary

Monmouthshire County Council has examined the results from monitoring in the County. Concentrations are all below the Objectives, and 2023 resulted in significant decreases in concentrations compared to 2019 (pre-pandemic).

All pollutants at all locations except one, decreased in 2023 compared to 2022. They remain significantly lower than 2019 and there were no exceedances of the relevant annual, daily or hourly objective levels, nor the WHO guideline values.

Air Quality Management Areas

The last time there was an exceedance of the nitrogen dioxide objective level in the Chepstow AQMA was at one location in 2019. Therefore, there has been no exceedance for four years since 2019 and for two years, (2022 and 2023) there have been no locations above 36 µg/m^3 (10% of the objective level) with the highest location in 2022 being 33.9 µg/m^3 and in 2023 30.9µg/m^3. The AQMA will remain until there have been at least 5 consecutive years below 36µg/m^3.

The Usk AQMA has not exceeded the annual nitrogen dioxide objective level for nine years (last was 2014), however MCC does not intend to revoke the AQMA until seven years of non-exceedance of 36 µg/m^3 have been achieved (to account for the stated 10% uncertainty with diffusion tube monitoring), to factor in decreased traffic due to lockdowns in 2020 and 2021. In total there have now been six continuous years below 36 µg/m^3 in Usk between 2018 and 2023.

As such it is likely (based on preliminary January to August diffusion tube monitoring) that the AQMA can be revoked in 2025 following consultation and agreement by Welsh Government.

3 New Local Developments

There are no specific new local developments confirmed that have not already been identified in previous reports. There is concern that new developments in the south of the County and in Forest of Dean will impact on the Chepstow AQMA and surrounding area.

The Local Development Plan is being revised and consulted upon in 2023/24. The outcome of this was to be reported on in the 2024 Progress Report however delays in the LDP process have occurred, and there is no update yet. Air Quality is a consideration in the LDP and planning applications, and Environmental Health are consultees, and are making comments throughout the process.

3.1 Road Traffic Sources (and Other Transport)

There are no newly identified road traffic sources since the last assessment.

3.2 Industrial / Fugitive or Uncontrolled Sources / Commercial Sources

There are no newly identified road traffic sources since the last assessment.

3.3 Other Sources

There have been no Other Sources (bonfires, firework displays, domestic wood burners) that have contributed to identified air pollution.

Monmouthshire County Council confirms that there are no new or newly identified local developments which may have an impact on air quality within the Local Authority area.

Monmouthshire County Council confirms that all the following have been considered:

- Road traffic sources
- Other transport sources
- Industrial sources
- Commercial and domestic sources
- New developments with fugitive or uncontrolled sources.

4 Policies and Strategies Affecting Airborne Pollution

4.1 Air Quality Planning Policies

At a national level planning policy on air quality issues is set out in section 6.7 – Air Quality and Soundscape of Planning Policy Wales (Ed 12 – Feb 2024). This requires Local Planning Authorities to consider the effects which proposed developments may have on air quality and the effects which existing air quality may have on proposed developments. In considering the relationship between development and air quality planning authorities and developers must address any implications of any association with, or location within, an Air Quality Management Area, not create areas of poor air quality and seek to incorporate measures which reduce overall exposure to air pollution.

At a local level planning policy is set out in the Adopted Monmouthshire Local Development Plan (Feb 2014). Policy EP1 – Amenity and Environmental Protection, seeks to ensure development has regard to the amenity and health of occupiers in the locality of the development. It seeks to prevent development proposals that would result in unacceptable risk or harm due to air, light, noise or water pollution, contamination or land instability. Development proposals that would cause unacceptable risk/harm to local amenity, health, the character/quality of the countryside or interests of nature conservation, landscape or built heritage importance due to risks associated with pollution, including air, will not be permitted. The LDP notes that where it is considered a development proposal may impact on an Air Quality Management Area (AQMA), or exacerbate an existing problem, developers will be required to provide an assessment of air quality impact, together with proposals for mitigation. A copy of Policy EP1 is set out below for information.

EP1 - Amenity and Environmental Protection

Development, including proposals for new buildings, extensions to existing buildings and advertisements, should have regard to the privacy, amenity and health of occupiers of neighbouring properties.

Development proposals that would cause or result in an unacceptable risk /harm to local amenity, health, the character /quality of the countryside or interests of nature conservation, landscape or built heritage importance due to the following will not be permitted, unless it can be demonstrated that measures can be taken to overcome any significant risk:

- *Air pollution.*
- *Light pollution.*
- *Noise pollution.*
- *Water pollution.*
- *Contamination.*
- *Land instability.*
- *Or any identified risk to public health or safety*

Planning Policy Wales can be viewed via the following link: https://gov.wales/planning-policy-wales

The Adopted Local Development Plan can be viewed via the following link:

https://www.monmouthshire.gov.uk/app/uploads/2017/05/Adopted-Local-Development-Plan-with-PDF-tags.pdf

Replacement Local Development Plan

MCC are currently working towards the Deposit Plan stage of the RLDP process which will set out the detailed policy framework and land use allocations for Monmouthshire up to 2033.

The Deposit Plan was due to be published in late Spring 2024. However, the preparation of the Deposit Plan is ongoing and is due to be adopted in 2026. It is anticipated that political reporting to seek endorsement of the Deposit Plan for public consultation and subsequent statutory engagement/consultation will take place in Autumn 2024, although this will be dependent on the timing of the UK General Election.

4.2 Local Transport Plans and Strategies

Located within the Cardiff Capital Region, Monmouthshire occupies a strategic location between major centres in South Wales, the south-west of England, and the Midlands. Monmouthshire experiences a net out commute of around 2,800 residents per day, or 39% of the working population commuting to Newport, Cardiff, Bristol, and surrounding areas. Motorway and localised highway congestion (such as at High Beech, Chepstow) contribute to poor air quality, with Air Quality Management Areas in Chepstow and Usk. Much of the air quality issues in Chepstow can be attributed to settlement growth and an increase in commuting flow through Chepstow from England. More generally, commuting has increased particularly to/from the West of England, following the removal of the Severn Tolls in 2018.

The Local Government and Elections (Wales) Act 2021 created a statutory requirement for Corporate Joint Committees to develop a Regional Transport Plan by 2025. Whilst this legislation removed the requirement for Local Authorities to develop their own Transport Plan, Monmouthshire was keen to ensure that its transport needs feature prominently in the Regional Plan and that they adopt an integrated approach to transport and land use planning in the Replacement Local Development Plan (RLDP). To this end, the Local Transport Strategy was developed to provide a clear vision, priorities and actions to support the development of the policy documents.

In 2023/24 MCC developed, consulted upon and then approved a Local Transport Strategy.

On 15th May 2024 Cabinet approved the Local Transport Strategy and associated actions which provides the vision and transport priorities for the period 2024 – 2029.

The Local Transport Strategy will provide Monmouthshire's transport priorities for consideration by the Cardiff City Region whilst developing the Southeast Wales Transport Plan.

The Local Transport Strategy was developed with the support of Ove Arup and has been developed following a review of national and local policies, the 2015 Local Transport Plan, a series of workshops with key stakeholders, and public consultation.

The strategy is intended to align with national, regional, and local policy priorities and sets out a clear ambition for transport infrastructure in Monmouthshire over the next five years. The vision is predicated on six key principles:

- Decarbonising transport
- Building better places
- Interconnected public transport.
- Embracing technology and innovation
- Customer centric design
- Public Value

Currently transport options in Monmouthshire can be fragmented with a heavy reliance on private transport due to cost, convenience, or a lack of public transport alternatives. Private motor vehicles however are net contributors to carbon emissions, air pollution and transport inequality. The Local Transport Strategy seeks to develop sustainable transport solutions, recognising that for some journeys the private motor car will continue to be the only viable mode of transport

The overarching vision of the strategy is the ambition to Develop a future facing integrated transport network that meets the transport needs of communities in a sustainable way. The network must address the climate emergency, be attractive to residents and visitors, and responsive to changing technology. The strategy recognises the rurality of Monmouthshire and how the spatial distribution of its communities impacts on access to services. In addition, the centralisation of health care facilities and the current cost of living crisis can increase isolation and negatively impact on the health of communities. The strategy seeks to address these issues by adopting four objectives:

1. To reduce inequalities and support safe, healthy, fair and accessible communities for both people and places through the provision of transport in Monmouthshire.
2. A transport system that delivers a significant reduction in greenhouse gas emissions and improves awareness of the consequences of travel choices on climate change, biodiversity, air quality and health.
3. A transport system that supports the Welsh language, enables people to use sustainable transport to access arts, sports, and cultural activities.

4. A transport system that contributes to Monmouthshire's economic ambitions, supports local communities, and improves sustainable transport options to key market towns and external destinations.

The four aims are designed to support the adoption of a cohesive transport and land use approach which supports the development of compact communities, enabling them to access services locally, and where possible to work locally, negating the need for long commutes. Where travel is necessary, the strategy promotes the use of an improved, accessible integrated active travel and public transport network that is affordable for all. This includes safe pedestrian footways, cycling routes, bus and demand responsive transport options and enhanced rail frequencies. For those journeys that must be undertaken by car, the strategy promotes the use of ULEV vehicles through the installation of electric vehicle charging infrastructure and car clubs together with lift sharing opportunities.

4.3 Active Travel Plans and Strategies

Under the The Active Travel (Wales) Act 2013, there is a requirement for authorities to continuously improve facilities and routes for pedestrians and cyclists (for AT journeys not leisure). The overall objective is to create a modal shift away from the car. The production of Active Travel Network Maps, which identify current and potential future routes, is a key legal requirement of the Act, as is for any new road schemes to consider the needs of pedestrians and cyclists at design stage. Active Travel has an important part to play in several existing policies adopted by Monmouthshire County Council, including reducing the carbon footprint with a move away from short car journeys.

Monmouthshire submitted their maps in December 2021 following a 2-year consultation process and have since had these signed off by the Welsh Government.

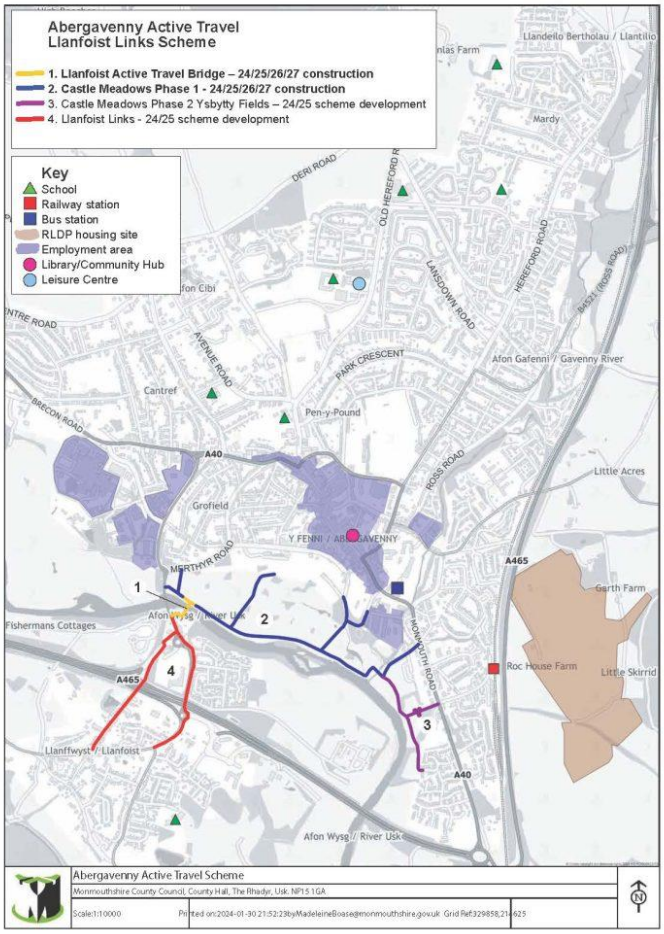
Each year, Welsh Government allows each Local Authority four strategic bids to be submitted for consideration to develop the Active Travel network for those routes identified on the Active Travel Network Maps. In 2022, Monmouthshire County Council was successful in their three geographical bids: Abergavenny, Caldicot x2 and Monmouth.

In 2022, Welsh Government approved the schemes detailed below. The text summarises the aspiration of each of the schemes. Many of the schemes will take over two years to complete.

Abergavenny- £4.54 million in funding secured for 2024/5

We are developing active travel routes across Abergavenny to better connect residents to local destinations and public transport services. We aim to improve equity of access to education, employment, local shops and services, to support sustainable, resilient and connected communities across Abergavenny and Llanfoist.

We are focusing on active travel links between Llanfoist and Abergavenny, with our route designed around a new active travel bridge crossing the River Usk between Merthyr Road and Castle Meadows, and associated links for safer, more attractive and direct sustainable routes into Llanfoist and Abergavenny.



This application concentrates on the Active Travel links needed between the areas of Llanfoist and the main town of Abergavenny. It is based on a new Active Travel bridge and associated links that will deliver a number of Active Travel benefits.

Scheme elements:

- A new accessible bridge for walking, wheeling and cycling across the River Usk just downriver of the existing Abergavenny Road bridge
- Upgrade of paths across Castle Meadows to make a car-free active travel route into Abergavenny town centre and onwards to Abergavenny railway station.
- Improved walking and cycling provision and highway crossing facilities within Llanfoist, including Merthyr Road and The Cutting.

Active travel Bridge

The scheme seeks to deliver a new pedestrian/cycle bridge across the River Usk, allowing people to cross the Usk away from road vehicles.

Abergavenny Road bridge has long been identified as a severance point for active travel, and MCC has prioritised the development of this route. The new bridge will become the main river crossing for active travel between Llanfoist and Abergavenny. This will offer a safe and attractive alternative to using the narrow footway over the existing Abergavenny Road Bridge and encourage modal shift as a result. The road bridge is a listed structure that carries a heavy volume of road traffic. There is currently little scope to make it more welcoming or safe for active travel. The aim is to bridge this missing link and ensure effective connections from the bridges (new and existing) into the town centre, allowing healthy travel between homes and key destinations such as schools, Nevill Hall and the town centre.

Improved links to Llanfoist from the new bridge.

The new bridge will become the main river crossing between Llanfoist and Abergavenny for Non-Motorised Users (NMU's). This will significantly reduce the risks associated with the existing narrow footway over the existing Abergavenny Bridge and encourage greater modal shift as a result. It is also important to ensure effective connections from the bridge (new and existing) into the town centre, to housing settlements in Llanfoist and other key destinations, so there is a seamless route. Welsh Government has in the past funded previous studies on the Llanfoist Bridge. *The scheme has*

achieve funding from Welsh Government this year to complete critical stages in the development of the Active Travel network between the Llanfoist settlement and the centre of Abergavenny town.

Castle Meadows

The scheme seeks to provide improved Active Travel compliant pedestrian and cycle links across Castle Meadows and Ysbytty Fields linking Llanfoist (via Llanfoist foot and cycle bridge) to Abergavenny town centre and Abergavenny rail station.

MCC has obtained planning approval to upgrade the paths across Castle Meadows to active travel standards, improving routes between Abergavenny Road Bridge, Abergavenny town centre/Byfield car park and, in a later development phase, east Abergavenny and Abergavenny Railway station.

Links

The Llanfoist links scheme seeks to provide welcoming active travel links between Llanfoist and the new active travel bridge across the River Usk – where pedestrians and cyclists can then continue their journey onwards via Castle Meadows and Ysbytty Fields to Abergavenny Town Centre and Abergavenny Rail Station. To achieve this, the plan is to improve pavements and crossing facilities within Llanfoist, connecting Llanfoist to Abergavenny with accessible routes. Public consultation for this section began in September 2024.

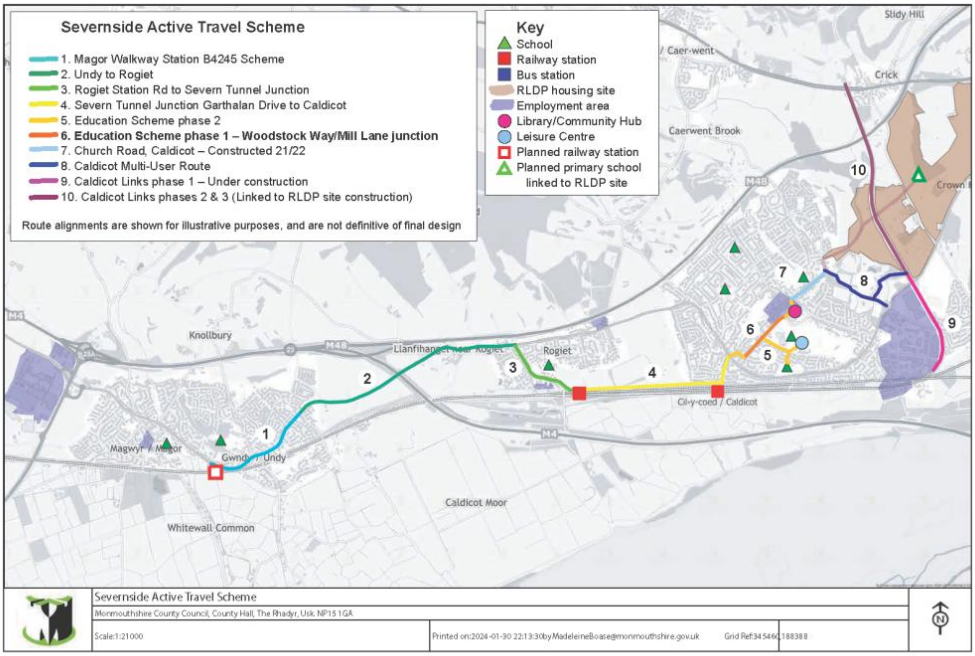
What is the change we expect to see?

- Increase in active travel journeys in Abergavenny
- Improved connectivity and accessibility for active travel trips in and between Llanfoist and Abergavenny
- Improve actual and perceived levels of personal safety and security when walking and cycling
- Create and improve new off-road dedicated walking /cycling routes, connecting with existing active travel opportunities.
- Protect and manage valued ecosystems as part of the delivery of schemes and offering biodiversity net gain.
- Promote sustainable travel as attractive and safe in Abergavenny and Llanfoist.

Caldicot - £1.49 million in funding secured for 2024/5

We are developing active travel routes across Severnside to better connect residents to local destinations and public transport services. We aim to improve equity of access to education, employment, local shops and services, to support sustainable, resilient and connected communities across Severnside.

You can see from our Caldicot Active Travel Locality Map, the distances involved are often short enough to be walked, wheeled or cycled. The fact that they are currently often done by car makes alternatives to driving less attractive to others too – this is an issue that could grow as more people move to the area. Caldicot, at the eastern end of the Severnside network, will benefit from improved transport options and mitigate the potential impact of population growth. We are building accessible routes and links in Caldicot to ensure active travel can be a safe, direct and comfortable way to get to where you need to go.



Education Scheme Phases 1 & 2

As part of developing the wider Active Travel network for Caldicot and the Severnside area, Monmouthshire County Council (MCC) is proposing redesign of the layout and traffic management for Woodstock Way in Caldicot, including the junction with Mill Lane. Through the proposed redesign, we aim to improve the safety and quality of the environment for those living and traveling in the local area.

Scheme specific, ringfenced funding has been granted by Welsh Government from the Active Travel Fund for the construction of the proposed Woodstock Way redesign as early as possible this year, pending local approval.

Consultation on Phase 1, Woodstock Way

Public consultation for Woodstock Way began in September 2024.

The Woodstock Way scheme is part of the Severnside Spinal Route. Building on the Woodstock Way scheme, designs are in development to later make these additional improvements to Mill Lane:

- Continue the shared use active travel paths from north west and south east Woodstock Way down Mill Lane to the entrance to the Leisure Centre car park, increasing capacity for active travel and creating a more direct Park & Stride route to Caldicot Comprehensive School from the Leisure Centre car park.
- Install Sustainable Urban Drainage (SUDs) planting and drainage as part of the new layout on Mill Lane, for improved rain-water management and environmental benefits.

What is the change we expect to see?

- Safer, more pleasant environment
- Calmer traffic movements
- Biodiversity and air quality improvements
- Increase in local use of active travel

Caldicot Links Scheme

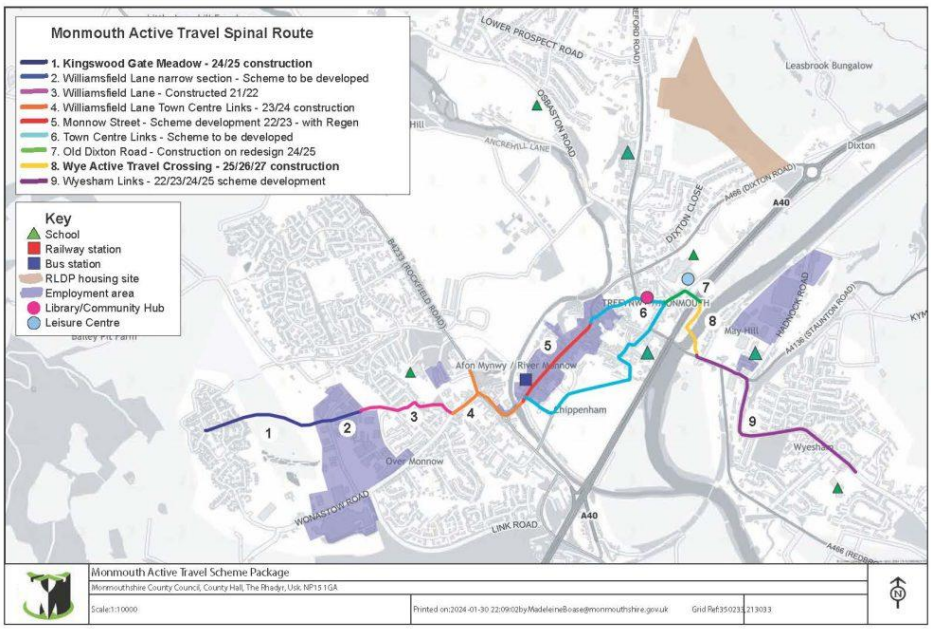
The Caldicot Links proposal is a phased, multi-element scheme. It aims to create an integrated network of routes that will have dedicated shared use facilities, connecting residents of Caldicot and Severnside to places of education and work, as well as shops and services. Its development supports improved equity of access, green infrastructure, well-being activities, destination management and local economic development actions.

This proposal would provide routes and route improvements between existing and planned residential areas and the town centre, focused on the northeast and east of Caldicot, Caldicot Castle and Country Park and the Greenway (formerly the Dinham railway MoD branch line) – areas included in the Replacement Local Development Plan (RLDP). This scheme aims to create the east Caldicot connection to Church Road, which saw footway, crossing and planting/drainage improvements to calm traffic and create an environment that is more conducive to active travel, constructed in 2022. Caldicot Links scheme phases:

- Phase 1: Running along the route of the old ex-Ministry of Defence Dinham railway line, from just south of the Cornfield at Portskewett, to level with Caldicot Castle Country Park.
- Phases 2 & 3: From level with the country park northwards to Crick, crossing the northeast Caldicot RLDP sites.
- Phase 4 – Multi User Route: Running through Caldicot Castle Country Park connecting up with the Caldicot Links and the B4245 at its eastern end and linking into Church Road (and on to Caldicot Town Centre) at its western end.

Monmouth

The Active Travel team of Monmouthshire County Council have many schemes in the works to help improve walking, wheeling and cycling across the whole of Monmouthshire and Monmouth is no different. The vision is to create an "Active Travel spinal route" through Monmouth to give people the chance to access schools, shops, doctors, and leisure centres as quickly, efficiently and as safely as possible. Once completed the route would allow someone to effectively travel from Wyesham through the centre of town and to the bottom of Kingswood Gate on an active travel path. The spinal route has been broken down into several sections, some already built, some in the process of being built and some are for future construction.



Kingswood Gate Meadow - £31,000 in funding secured for 2024/5

Kingswood Gate Meadow scheme is a 3m shared use path that crosses a meadow from the Kingswood Gate housing estate to the Wonastow Industrial estate and links up to the Williams Field Lane path creating one long continuous path leading to the centre of Monmouth. Progress with this section of the route has proved difficult with some tricky land negotiations and SUDS (Sustainable Urban Drainage Systems) designs. The SUDS has now been completed and the land negotiations are close to being resolved. We will look to construct this scheme in summer 2025 once detailed design and land negotiations are finalised, and subject to securing the required from Welsh Government. The funding this year will be used towards getting finalised detailed drawings and completed land legalities.

The scheme looks to:

- Provide a shared 3m path (with localised narrowing where vegetation width doesn't allow full compliance).
- New signage for path
- SUDs drainage features
- Connection into previously constructed phases and crossing.
- Low level lighting suitable for local habitats

Williamsfield Lane Town Centre Links – Constructed 2024

Construction of this phase started in February 2024 and was due to be completed by the end of April 2024, however, due to a major setback of a burst water main which then resulted in some necessary re-design of plans meant the scheme was set back several weeks. The scheme construction was completed in early June 2024. The scheme has been funded by the Welsh Government Active Travel Fund and adds a major section to the overall spinal route through Monmouth. It has improved pavement widths to allow shared use by pedestrians and wheeled users to feel much safer when commuting. The works have also made links from the Wiliams Field Lane to the centre of Monmouth a much less restricted journey.

The scheme:

- Replaced a mini roundabout with a T junction to aid active travel crossing and dissuade HGV users from using Wonastow Road and use the provided link route
- Installed a toucan crossing across Rockfield Road
- Deleted some on street parking to gain required widths for the new pavements
- Provides an additional link up to recreational facilities, such as the skate park and nature space.
- Priority crossings over side entrances.
- New signage for shared use path
- Installed a new toucan crossing on Wonastow Rd Industrial Estate

Old Dixton Road – Not funded this FY

This scheme gained construction funding in 2021/22, but wasn't built due to high tender returns and so has been put on hold until both funding and a successful tender have been found. The scheme aims to provide an off road shared used path from the Library, past the Comprehensive school, to the Leisure Centre in Monmouth as well as a "quiet lane" through the underpass leading to the river side. The designs have been altered slightly after some feedback from our Sustrans Active Travel advisor and construction is planned for summer 2025 once funding is secured from Welsh Government Active Travel Fund.

The scheme looks to:

- Provide a widened footway to active travel standards.
- Cyclists to be directed on road with 20mph implementation
- Crossing point at Leisure Centre.
- Priority crossing over carpark entrances.
- New signage for paths
- Adaptations to previous designs to include:
- Removal of "bulge" in kerb line at pinch point

- Road to underpass to become a “Quiet Lane” and link with the future Wye Active Travel Crossing
- Promotion of 20mph zone.
- Relocated traffic calming features

Wye Active Travel Crossing – £120,000 in funding secured for 2024/5

Proposals for a new Active Travel crossing of the river Wye at Monmouth have taken a major step forward with the proposed design of a bridge for pedestrians and cyclists has now been approved planning permission. The project, which is supported by the Welsh Government’s Active Travel Fund, aims to create a new safe route linking Monmouth and Wyesham that avoids the vehicular traffic on the busy Wye Bridge. Extensive surveys have been carried out as part of the initial planning including, traffic, flood modelling and ecology allowing for a much more detailed design and approach to construction. Some nature enhancement works such as planting and setting up nest boxes have already taken place at a selected site in Wyesham as part of the ecology requirements.

The funding received for this year will be going towards obtaining detailed designs of the bridge using an ECI (Early Contractor Involvement) framework ready for the scheme to go out to tender. Construction for the crossing is scheduled to begin in 2025/2026 and continue through to 2026/2027 due to the size of the scheme as there are limited construction windows due to the nature that surrounds the site.

The scheme looks to:

- Provide a 3.8m wide walking and cycling bridge parallel and upstream to the current Wye bridge.
- Provide a coherent, direct, safe, comfortable, and attractive walking and cycling network from Wyesham to surrounding communities, services, and facilities across Monmouth;
- Increase levels of sustainable access to employment, health, education, and services;
- Positively impact actual and perceived pedestrian, cyclist, and wheelchair user’s safety along and across the study area;
- Achieve a modal shift in Monmouth towards sustainable transport for all journeys; and reduce the negative impacts of transport on the natural and built environment.

- Provide connections to the Wyesham Links and Old Dixton Rd routes on either side of the bridge

Wyesham Links – 2024/2025 Scheme development

The final section of the spinal route is the Wyesham Links which connects Wyesham to the centre of Monmouth via the Wye Active Travel Crossing. The scheme development is currently looking into the best ways to improve the routes from the Kymin View primary school, along Wyesham Road and linking to Staunton Road and the A466. With limited space on the Wyesham Road hill it is not easy to change without massive construction involved so for the meantime this phased is being paused. Instead the links from the top of the hill along Wyesham Road to the Kymin View Primary school are being explored further. Design options for this section are in the process of being put together ready for public consultation later in 2024.

Chepstow

In November 2023 HMT announced Chepstow had achieved £5.2 million as part of the Levelling Up Fund for its scheme to improve the Chepstow transport hub as well as the connections to it throughout the town. The active travel team have identified some key routes to develop as part of the scheme. Funding was secured from Welsh Government to start the scheme and look into the development opportunities.

Welsh Street - £100,000 funding secured for 2024/5

The aim of the scheme is to improve overall connections from 3 major trip attractors to the town centre. These trip attractors are Chepstow Comprehensive School, Chepstow Leisure Centre and The Dell Primary School. External contractors are in the process of creating design options to develop and investigate further. The scheme looks to:

- Improve pavement widths where necessary
- Promote sustainable travel as attractive and safe in Chepstow
- Improve links between major trip attractors and the town centre

4.4 Local Authorities Well-being Objectives

The Well-being of Future Generations (Wales) Act 2015 (Assessments of Local Well-being) Regulations 2017 require Public Services Boards, when preparing an assessment of local well-being under section 37 of the Act, to take into account the most recent review of air quality for their local authority area carried out under section 82 of the Environment Act 1995 ("the 1995 Act") and the most recent strategic noise maps made under Chapter 2 of the Environmental Noise (Wales) Regulations 2006 ("the 2006 Regulations") and adopted by the Welsh Ministers.

Monmouthshire County Council have incorporated the Well-being Objectives into its Community and Corporate Plan, and Monmouthshire's Well-Being Assessment, which was updated in 2022, incorporates Air Quality:

https://www.monmouthshire.gov.uk/app/uploads/2022/05/Well-Being-Assessment-22-27_Monmouthshire_Final.pdf.

This forms part of a wider Gwent Wellbeing Assessment:

http://www.gwentpsb.org/well-being-plan/well-being-assessment/

Monmouthshire Public Service Board has been replaced by a Gwent Public Service Board, who have produced a Wellbeing Plan for Gwent

http://www.gwentpsb.org/en/well-being-plan/gwent-well-being-plan/.

Actions in the Gwent PSB plan will be overseen and delivered locally in Monmouthshire via a Local Delivery Group.

4.5 Green Infrastructure Plans and Strategies

Monmouthshire County Council's Green Infrastructure team have several projects planned or underway. Building on the reported actions in the 2023 Air Quality Progress Report, the county council has planted a further 4500 hedgerow tree whips, 126 specimen trees and 39 orchard trees.

4.6 Climate Change Strategies

In 2019 Monmouthshire County Council declared a climate emergency. The Council are working hard to reduce our contribution to climate change, as well as working with communities to reduce carbon emissions across the county. We also need to be able to adapt to the impacts that climate change is already having. The most recent Climate and Nature Emergency Strategy includes four action plans which cover: Council emissions, Nature recovery, Rivers and Ocean and Communities and Climate. These were adopted in May 2024 and you can see them here: https://www.monmouthshire.gov.uk/climate-emergency

5 Conclusion and Proposed Actions

5.1 Conclusions from New Monitoring Data

The 2024 Progress Report did not identify any exceedances of nitrogen dioxide, PM_{10} or $PM_{2.5}$ objective levels in the 2023 calendar year. This has continued since the beginning of the COVID Pandemic in 2020, despite lockdown and isolation restrictions being removed by 2022, and traffic levels having retuned to pre-covid levels. Concentrations of all three pollutants at all locations were comparable (even lower in some cases) to 2020.

In 2012 there were seven exceedances of the annual mean nitrogen dioxide objective level, in 2014 there were four (two each in the Usk and Chepstow AQMA's), between 2015 and 2019 there was one location (in the Chepstow AQMA) and since 2020 there have been no exceedances. Therefore 2023 was the fourth consecutive year with no exceedances of the nitrogen dioxide objective level in the county.

2023 was the ninth consecutive year with no annual mean nitrogen dioxide exceedances in the Usk AQMA. The Usk AQMA will remain in place however, until five years below 36 µg/m^3 (10% uncertainty margin of error) of compliance have been achieved. 2023 marked the sixth such year, however it was decided by the Usk Steering Group Members that both 2020 and 2021 would be excluded (due to lockdown measures), therefore seven continuous years will be required. As such it is possible that the Usk AQMA could be revoked in 2025 if concentrations in 2024 remain below 36 µg/m^3.

Generally, nitrogen dioxide diffusion tube concentrations reduced from 2012 until 2018 and remained consistent in 2019, with a drop (due to the COVID-19 pandemic) in 2020, a slight increase in 2021 (but still lower than pre-2020), stabilisation in 2022 and decrease in 2023.

With regard to the automatic analysers in the AQMS: nitrogen dioxide, PM_{10} and $PM_{2.5}$ concentrations reduced between 2011 and 2015, remained consistent until 2018, but increased in

2019. They all decreased in 2020, however nitrogen dioxide increased by 3 μg/m^3 in 2021 (but still 10 μg/m^3 lower than 2019 (29 μg/m^3 compared to 39 μg/m^3), but PM10 and PM2.5 decreased further (both by 1 μg/m^3 to 16 and 8 μg/m^3 respectively).

However, in 2022, whilst nitrogen dioxide decreased by 1 μg/m^3, both PM_{10} and $PM_{2.5}$ increased (by 2 μg/m^3 and 1 μg/m^3 respectively). Both remained below 50% of their objective/target levels. In 2023 all three pollutants reduced to their lowest (or joint lowest) concentrations. Compared to 2022 nitrogen dioxide and PM_{10} reduced by 2μg/m^3 and $PM_{2.5}$ reduced by 1μg/m^3.

5.2 Conclusions relating to New Local Developments

There were no additional confirmed local developments.

5.3 Other Conclusions

Air quality is improving in the two Air Quality Monitoring Areas; however, the two Air Quality Action Plans will continue to be progressed through regular meetings of the Air Quality Steering Groups.

5.4 Proposed Actions

- The new monitoring has identified that there is no need to declare a new AQMA and no need for further investigation or assessment of any pollutant.
- There are no changes proposed to the two AQMAs, which will remain in place, however it is likely that Usk will be revoked in 2025 as preliminary diffusion tube concentration indicate that concentrations have reduce further in 2024.
- Extended monitoring will continue in Abergavenny, Monmouth, Pwllmeyric and Woodside, but no additional monitoring will be required in 2025 over that already being undertaken in 2023 and being undertaken in 2024.
- Action plan Steering Group meetings will continue to be held to attempt to achieve progress with the proposed measures and identify additional measures to improve air quality.
- The Air Quality Progress Report will be completed in 2025.

References

Environment Agency (2015) Study of Ambient Air Quality at Monmouth 18 December 2014 – 2 June 2015

Defra (2016) Local Air Quality Management: Technical Guidance.TG (16).

Welsh Government (2017) Local air quality management in Wales Policy guidance PG(W)(17)

Monmouthshire County Council (2007) Further Assessment of Air Quality in Usk.

Monmouthshire County Council (2003) Updating and Screening Assessment.

Monmouthshire County Council (2004) Interim Detailed Assessment.

Monmouthshire County Council (2005a) Detailed Assessment.

Monmouthshire County Council (2005b) Progress Report.

Monmouthshire County Council (2006) Updating and Screening Assessment.

Monmouthshire County Council (2008a) Further Assessment of Air Quality in Chepstow.

Monmouthshire County Council (2009) Updating and Screening Assessment.

Monmouthshire County Council (2012) Updating and Screening Assessment

Monmouthshire County Council (2014) Adopted Local Development Plan 2011-2021

Monmouthshire County Council (2015) Updating and Screening Assessment

Monmouthshire Public Service Board (2018) Well-being Plan

Monmouthshire County Council (2019) Climate Emergency Strategy

Monmouthshire Public Service Board (2021) Well-being Plan Annual Report

Monmouthshire County Council (2008- 2023) Progress Reports

MCC Air Quality Reports and Action Plans are available –

https://www.monmouthshire.gov.uk/air-quality/

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 2023 (µg/m^3)

Diffusion Tube ID	NO_2 Mean Concentrations (µg/m^3)												Simple Annual Mean (µg/m3)		
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Raw Data	Bias Adjusted (0.81)[1]	Distance Corrected to Nearest Exposure[2]
CH1	25.5	24.5	17.1	14.9	12.4	14.3	12.6	13.8	16.7	17.5	21.6	16.8	17.3	14.0	
CH2a	35.9	40.1	32.5	34.5	28.8	32.1	23.8	25.8	32.0	32.4	34.0	26.8	31.6	25.6	20.6
CH3	30.6	31.2	28.2	26.9	20.6	24.6	21.0	21.9	25.7	27.8	26.6	23.3	25.7	20.8	
CH4	44.5		40.4	41.7	32.7	38.0	39.1	34.0	39.4	36.5	34.4	39.5	38.2	30.9	
CH5	32.7	26.6	21.9	16.0	14.0	17.1	19.4	19.1	21.3	22.9	24.1	24.0	21.6	17.5	
CH6	38.5	39.5	33.7	29.9	23.4	21.7	20.2	20.4	24.5	27.7	33.7	27.3	28.4	23.0	
CH7	27.9	28.2	22.3	24.1	20.7	20.2	14.0	17.1	21.4	24.4	22.9	17.9	21.8	17.6	
CH8	26.0	28.7	23.7	22.8	19.3		15.6	18.3	22.0	25.2	24.2	19.7	22.3	18.1	

Diffusion Tube ID	NO_2 Mean Concentrations (µg/m^3)												Simple Annual Mean (µg/m3)		
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Raw Data	Bias Adjusted (0.81)[1]	Distance Corrected to Nearest Exposure[2]
CH9	25.0	25.9	23.9	21.3	19.9	21.1	18.4	19.2	22.3	23.3	23.2	17.7	21.8	17.6	
AQ1	40.7	38.6	35.8	32.2	28.2	29.8	27.0	26.3	32.0	32.4	34.4	31.2	-	-	
AQ2	41.5	37.7	34.8	33.2	29.1	31.4	27.3	25.4	32.4	33.2	33.0	31.8	-	-	
AQ3	43.3	40.7	34.6	32.1	28.2	30.7	26.8	26.7	32.0	32.1	33.2	34.0	32.6	26.4	
PWLL1	44.2	46.1	39.7	40.3	34.1	35.3	32.7	31.6	38.3	38.3	40.2	34.8	38.0	30.8	16.8
PWLL2	26.8	28.2	27.1	25.5	25.7	27.6	20.8	21.9	26.9	27.9	25.0	22.3	25.5	20.6	18.2
PWLL3	43.4	39.8	38.9	41.8	39.0	41.1	28.4	29.7	35.1	32.5	36.1	31.0	36.4	29.5	22.4
PWLL4	20.4	21.9	18.7	19.7	17.2	17.8	11.4	14.2	16.9	18.5	21.2	15.1	17.8	14.4	
MM1	33.7	32.7	31.4	28.4	21.7	25.3	24.4	23.8	29.0	27.5	28.8	24.1	27.6	22.3	
MM2	24.9		23.2	24.2	19.8	21.8	18.9	19.3	24.0	24.8	21.7	16.7	21.7	17.6	
MM3	25.5	25.6	20.1	18.8	15.0	16.1	13.7	16.6	20.6	22.7	21.7	16.4	19.4	15.7	

Diffusion Tube ID	NO_2 Mean Concentrations (µg/m^3)												Simple Annual Mean (µg/m3)		
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Raw Data	Bias Adjusted (0.81)[1]	Distance Corrected to Nearest Exposure[2]
MM4	29.9	25.4	21.1	19.3	16.4	16.9	17.1	16.8	20.7		13.1	20.0	19.7	16.0	
MM7	23.5	23.2	20.0	22.4	17.1	19.3	16.9	18.3	22.5	23.2	21.4	17.1	20.4	16.5	
MM9	21.0	20.7	16.0	16.2	13.6	15.3	12.8	14.9	18.4	19.7	16.7	13.1	16.5	13.4	
MM11	24.4	26.8	23.1	29.3	32.6	31.2	17.5	24.6	28.6	29.1	26.0	14.9	25.7	20.8	
MM13	30.0	32.1		31.5	23.1	29.3	27.9	26.3	31.9	33.3	27.5	28.5	29.2	23.7	
MM15	28.3	29.0	26.4	27.1	24.5	25.7	19.3	20.7	25.7	25.9	25.7	19.5	24.8	20.1	
MM17	23.1	21.3	18.0	16.8	14.5	15.1	12.7	13.9	16.6	18.4	19.9	16.0	17.2	13.9	
MM18	26.5	26.7	22.0	22.4	18.8	21.9	17.9	20.7	25.3	23.3	22.8	17.5	22.1	17.9	
MM19	27.8	29.8	25.4	25.3	23.0	23.6	16.9	19.7	23.2	24.7	27.0	17.3	23.6	19.1	
MM21		29.4	24.1	24.5	23.4	24.6	14.8	19.0		22.6	25.6	18.1	22.6	18.3	
MM22	15.2	14.1	9.0	7.7	5.8	6.9	6.5	7.2	8.9	10.9	12.4	7.8	9.4	7.6	

Diffusion Tube ID	NO_2 Mean Concentrations (µg/m^3)												Simple Annual Mean (µg/m3)		
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Raw Data	Bias Adjusted (0.81)[1]	Distance Corrected to Nearest Exposure[2]
AB1	44.8	41.3	36.4	33.7	24.2	27.9	27.5	26.9		32.0	31.8	29.8	32.4	26.2	24.9
AB2	32.0	34.0	29.3	29.8	24.1	26.3	22.9	23.0	28.1	31.4	30.1	29.4	28.4	23.0	
AB3	25.9	28.4	23.4	23.9	21.9	23.9	18.9	20.8	23.0	24.5	26.8	21.3	23.6	19.1	
AB4	26.3	29.9	24.2	22.4	19.0	22.6	17.5	19.1	24.9	26.1	24.7	20.1	23.1	18.7	
AB5	19.0	20.7	17.3	16.1	12.8	14.7	10.4	12.3	12.0	13.7	18.3	13.2	15.1	12.2	
AB7	27.9	30.6	23.4	24.8	20.6	21.4	14.8	18.1	20.5	25.6	27.5	20.8	23.0	18.6	
AB8	21.4	21.0	17.7	16.9	12.8	16.2	14.5	14.2	17.1	19.1	19.9	17.0	17.3	14.0	
AB9	31.5	32.2	29.3	29.6	23.2	26.5	24.7	24.0	28.7	29.0	29.2	27.1	27.9	22.6	
USK1	29.8	27.8	22.7	18.2	16.8	16.6	15.9	18.3	22.6	18.5	20.3	21.8	20.8	16.8	
USK2	31.9	33.0	29.4	27.9	23.7	24.5	22.6	22.8	30.1	30.2	28.9	24.0	27.4	22.2	
USK3	34.1	31.9	27.1	29.2	25.1	25.2	22.1	24.6	29.0	29.4	30.7	24.2	27.7	22.4	

Diffusion Tube ID	NO_2 Mean Concentrations (µg/m^3)												Simple Annual Mean (µg/m3)		
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Raw Data	Bias Adjusted (0.81)[1]	Distance Corrected to Nearest Exposure[2]
USK4	31.8	33.2	26.8	28.1	23.4	24.8	20.3		26.8	28.9	28.7	22.8	26.9	21.8	
USK5	34.0	34.8	27.6	27.5	24.3	26.7	19.7	21.8		27.4	32.4	23.1	27.2	22.0	
USK6	23.1	22.6	17.6	16.3	13.7	14.6	12.0	13.8	14.8	16.1	21.3	15.2	16.8	13.6	
WS1	26.0	26.5	20.9	19.8	17.0	18.4	15.4	18.2	21.1	19.3	24.7	17.3	20.4	16.5	
WS2	27.7	28.4	23.5	23.2	19.7		19.3	20.3	25.2	22.3	25.7	20.0	23.2	18.8	
WS3	21.7	23.6	18.4	17.2	18.8	18.1	11.3	14.7	17.4	18.3	20.0	13.0	17.7	14.3	

☒ All erroneous data has been removed from the NO_2 diffusion tube dataset presented in Table A.1

☒ Annualisation has been conducted where data capture is <75% and >25% in line with LAQM.TG22

☐ Local bias adjustment factor used

☒ National bias adjustment factor used

☒ Where applicable, data has been distance corrected for relevant exposure in the final column

☒ Monmouthshire County Council confirm that all 2023 diffusion tube data has been uploaded to the Diffusion Tube Data Entry System

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 only if uncorrected concentration is over 36µg/m^3 (10% of objective level). Values shown are for information only.

Appendix B: A Summary of Local Air Quality Management

5.5 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, as amended by the Environment Act 2021, 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 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 must then be reviewed and updated no later than every five years; or if a local authority considers there is a need for further or different measures to be taken to achieve air quality standards; or if significant changes to sources occur within your local area.

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

5.6 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 (milligrams 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

5.7 QA/QC of Diffusion Tube Monitoring

Diffusion tube supply and analysis

Since May 2010 Monmouthshire County Council has used diffusion tubes prepared and analysed by Gradko International Limited using 20% TEA in Water and U.V. spectrophotometry. The tubes are stored refrigerated until ready to be used. They are changed every month (either 28 or 35 days) on a Wednesday in accordance with the 2023 Diffusion Tube Monitoring Calendar and sent to Gradko for analysis on the same day as they were changed.

NO2 Diffusion Tube Monitoring Calendar | LAQM (defra.gov.uk)

Gradko is a UKAS accredited laboratory and take part in the Air & Stack Emission Proficiency (AIR-PT) scheme. The scheme is operated by LGC Standards and supported by the Health and Safety Laboratory, with yearly assessment against agreed performance criteria. AIR-PT combines two long running PT schemes: LGC Standards STACKS PT scheme and HSL Workplace Analysis Scheme for Proficiency (WASP) PT scheme.

WASP – Annual Performance Criteria for NO2 Diffusion Tubes (defra.gov.uk)

The table on page 5 of the above linked document shows that 100% of the results submitted by Gradko International were subsequently determined to be satisfactory.

Diffusion Tube Annualisation

All diffusion tube monitoring locations within Monmouthshire recorded data capture of over 75% therefore it was not required to annualise any monitoring data.

There were no sites with a data capture below 25% (these also would not have required annualisation).

Diffusion Tube Bias Adjustment Factors

Monmouthshire County Council have applied a national bias adjustment factor (BAF) of 0.81 to the 2023 monitoring data. A summary of bias adjustment factors used over the past five years is presented in table C.1.3

The 2023 national Bias Adjustment Factor calculated for Gradko in March 2024 (03/24) and June 2024 (06/24) were both 0.81. The September version was not available at the time of submitting this report.

March was based on 23 studies and July was based on 27. Monmouthshire Conty Council took part in both studies with a local bias adjustment factor of 0.79 obtained from a triplicate co-location study at the Chepstow Air Quality Monitoring Station (see below – Local Co-location Studies).

The national bias adjustment factor studies are available:

National Bias Adjustment Factors | LAQM (defra.gov.uk)

National Diffusion Tube Bias Adjustment Factor Spreadsheet — Spreadsheet Version Number: 06/24

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 spreadsheet 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 2024

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: Select the Laboratory that Analyses Your Tubes from the Drop-Down List — If a laboratory is not shown, we have no data for this laboratory.

Step 2: Select a Preparation Method from the Drop-Down List — If a preparation method is not shown, we have no data or this method at this laboratory.

Step 3: Select a Year from the Drop-Down List — If a year is not shown, we have no data[2]

Step 4: 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 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[2] (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[5]	Bias Adjustment Factor (A) (Cm/Dm)
Gradko	20% TEA in Water	2023	R	Monmouthshire County Council	11	33	26	26.5%	G	0.79
Gradko	20% TEA in water	2023	R	Blackburn With Darwen Bc	12	23	16	43.8%	G	0.70
Gradko	20% TEA in water	2023	R	Lancaster City Council	10	35	27	28.6%	G	0.78
Gradko	20% TEA in water	2023	R	Eastleigh Borough Council	12	33	26	26.4%	G	0.79
Gradko	20% TEA in water	2023	R	Eastleigh Borough Council	12	22	19	12.5%	G	0.89
Gradko	20% TEA in water	2023	R	Plymouth City Council	12	35	26	38.3%	S	0.72
Gradko	20% TEA in water	2023	R	Plymouth City Council	10	39	31	24.2%	S	0.80
Gradko	20% TEA in water	2023	UC	Belfast City Council	10	26	19	38.3%	G	0.72
Gradko	20% TEA in water	2023	R	Cheshire West And Chester	12	35	32	10.0%	G	0.91
Gradko	20% TEA in water	2023	R	Cheshire West And Chester	10	32	28	14.6%	G	0.87
Gradko	20% TEA in water	2023	R	Dudley Mbc	12	27	23	17.1%	G	0.85
Gradko	20% TEA in water	2023	UB	Dudley Mbc	12	19	13	45.4%	G	0.69
Gradko	20% TEA in water	2023	R	Dudley Mbc	12	40	37	7.7%	G	0.93
Gradko	20% TEA in water	2023	R	Gateshead Council	12	23	20	17.7%	G	0.85
Gradko	20% TEA in water	2023	R	Gateshead Council	11	23	18	26.9%	G	0.79
Gradko	20% TEA in water	2023	R	Gateshead Council	12	27	22	20.7%	G	0.83
Gradko	20% TEA in water	2023	R	Gateshead Council	12	29	23	25.9%	G	0.79
Gradko	20% TEA in water	2023	R	Gateshead Council	12	30	33	-7.8%	G	1.08
Gradko	20% TEA in water	2023	KS	Marylebone Road intercomparison	11	45	38	20.3%	G	0.83
Gradko	20% TEA in water	2023	B	South Holland District Council	10	8	7	12.4%	G	0.89
Gradko	20% TEA in water	2023	R	Worcestershire	12	12	12	3.3%	G	0.97
Gradko	20% TEA in Water	2023	R	Ards And North Down Borough Council	12	33	21	60.2%	G	0.62
Gradko	20% TEA in Water	2023	R	Lisburn & Castlereagh City Council	11	24	20	22.1%	G	0.82
Gradko	20% TEA in water	2023	R	Nottingham City Council	11	30	21	41.8%	G	0.71
Gradko	20% TEA in water	2023	R	Belfast City Council	12	46	35	29.3%	G	0.77
Gradko	20% TEA in water	2023	R	Belfast City Council	12	25	21	18.6%	G	0.84
Gradko	20% TEA in water	2023	R	Belfast City Council	12	37	28	30.2%	G	0.77
Gradko	20% TEA in water	2023		Overall Factor[3] (27 studies)				Use		0.81

Factor from Local Co-location Studies

Monmouthshire County Council undertakes its own triplicate co-Location study to obtain a Local Bias Adjustment Factor, and that factor is shared with other authorities via the National Bias Adjustment Factor database.

A local bias adjustment factor (BAF) has been calculated for the Hardwick Hill, Chepstow automatic site. The triplicate tubes in twelve months showed good precision with each other (with a Coefficient of Variation below 20% in each month (CV range was 1-5% with a mean of 2.3%), and 99% data capture. The calculations are shown in Table C.1.1

Table C.1.1 – Local Bias Adjustment Calculations

	Local Bias Adjustment
Periods used to calculate bias	11
Bias Adjustment Factor A	0.79 (0.75 - 0.83)
Diffusion Tube Bias B	27% (20% - 33%)
Diffusion Tube Mean (µg/m^3)	33.2
Mean CV (Precision)	2.3%
Automatic Mean (µg/m^3)	26.2
Data Capture	99%
Adjusted Tube Mean (µg/m^3)	26 (25 - 28)

Overall Diffusion Tube Precision	**Good Overall Precision**
Overall Continuous Monitor Data Capture	**Good Overall Data Capture**

Local Bias Adjustment Factor	**0.79**

Discussion of Choice of Factor to Use

The national bias adjustment factor based on the co-location studies of 27 local authorities who submitted by June was 0.81, whilst the local bias adjustment factor based on the Chepstow co-location study was 0.79. The national factor was used, as it included 27 studies of good precision and is more conservative than the Chepstow local BAF. MCC has used the national BAF since 2010, and therefore there is also an element of consistency when comparing annual trends.

Table C.1.2. Below is a comparison of using the two different BAF for the highest location diffusion tube in each town). Using the local factor would have resulted in a decrease of 0.5-0.7µg/m^3, as a result no conclusions or discussions in this report would have changed based on the use of either of the two Bias Adjustment Factors.

Table C.1.2 – Comparison of different BAF's on concentrations

Location/Reference	0.81 National	0.79 Chepstow Local
Chepstow - CH4	30.9	30.2
Monmouth -MM1	22.3	21.8
Abergavenny – AB1	26.2	25.6
Usk – USK3	22.4	21.9

Table C.1.3 – Bias Adjustment Factor – last 5 years

Year	Local or National	If National, Version of National Spreadsheet	Adjustment Factor
2023	National	06/24	0.81
2022	National	03/23	0.83
2021	National	03/22	0.84
2020	National	03/21	0.77
2019	National	03/20	0.93

NO_2 Fall-off with Distance from the Road

No diffusion tube NO_2 monitoring locations within Monmouthshire County Council required distance correction as none of the 4 locations that have been distance corrected in the past had concentrations greater than 36µg/m^3. Where distance corrections have been provided, this is for information only.

5.8 QA/QC of Automatic Monitoring

- Ricardo & Bureau Veritas completes the data management and Monmouthshire County Council – Environmental Health undertake the Local Site Operator (LSO) duties for the automatic monitoring site within the authority.
- Calibrations, audit and servicing are carried out every six months.

- Ricardo AEA undertake the Ratification process. The monitoring data presented within the APR is ratified.
- Live/historic data is available through the Welsh Air Quality Forum website https://airquality.gov.wales/

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

The type of PM_{10}/$PM_{2.5}$ monitor(s) utilised within Monmouthshire County Council are BAM and thus do not require the application of a correction factor.

Automatic Monitoring Annualisation

The automatic monitoring location within Monmouthshire County Council recorded data capture of greater than 75% therefore it was not required to annualise any monitoring data. In addition, any sites with a data capture below 33% do not require annualisation.

NO_2 Fall-off with Distance from the Road

No automatic NO_2 monitoring locations within Monmouthshire County Council required distance correction.

Appendix D: AQMA Boundary Maps

Figure D.1 – Chepstow AQMA

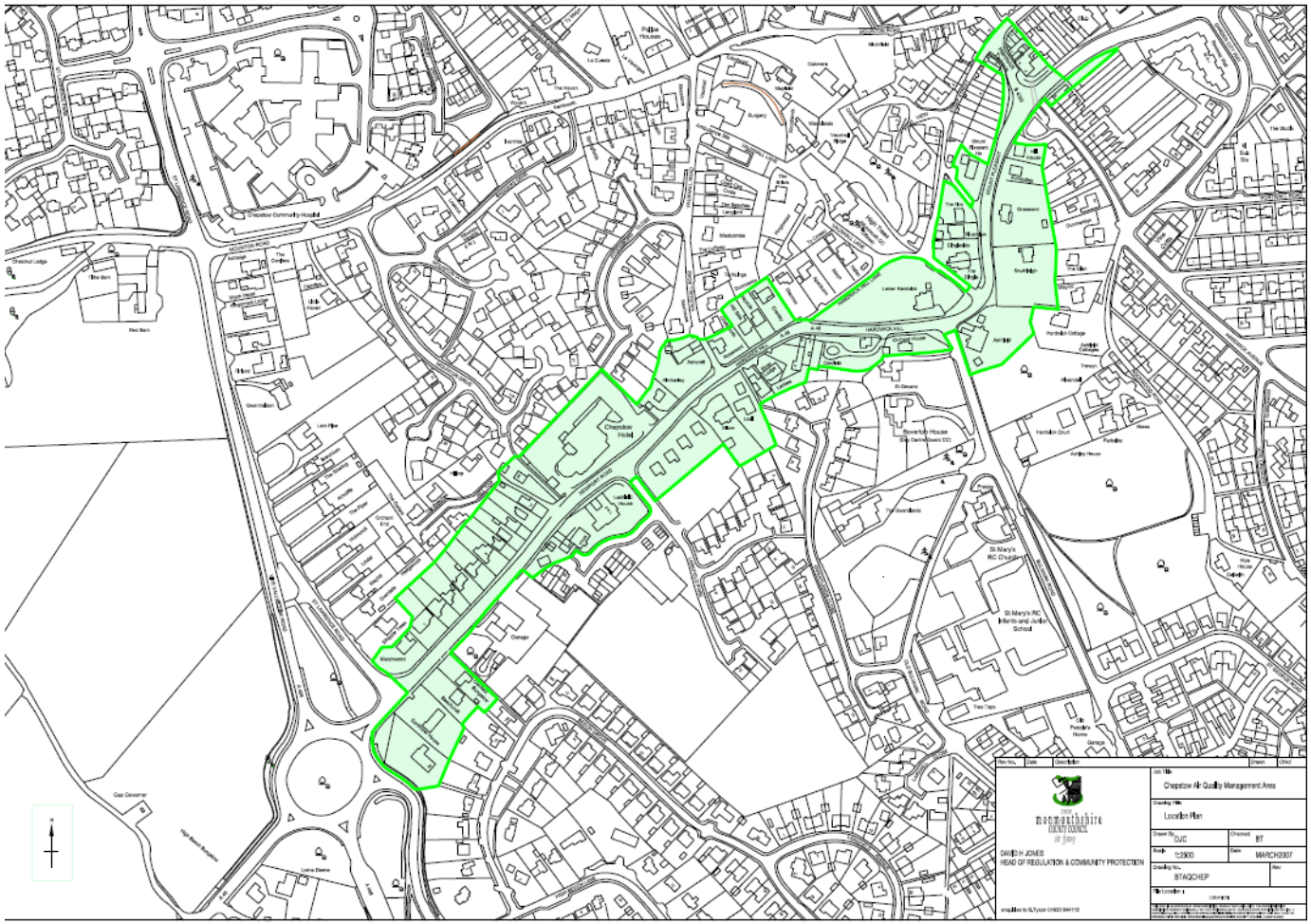
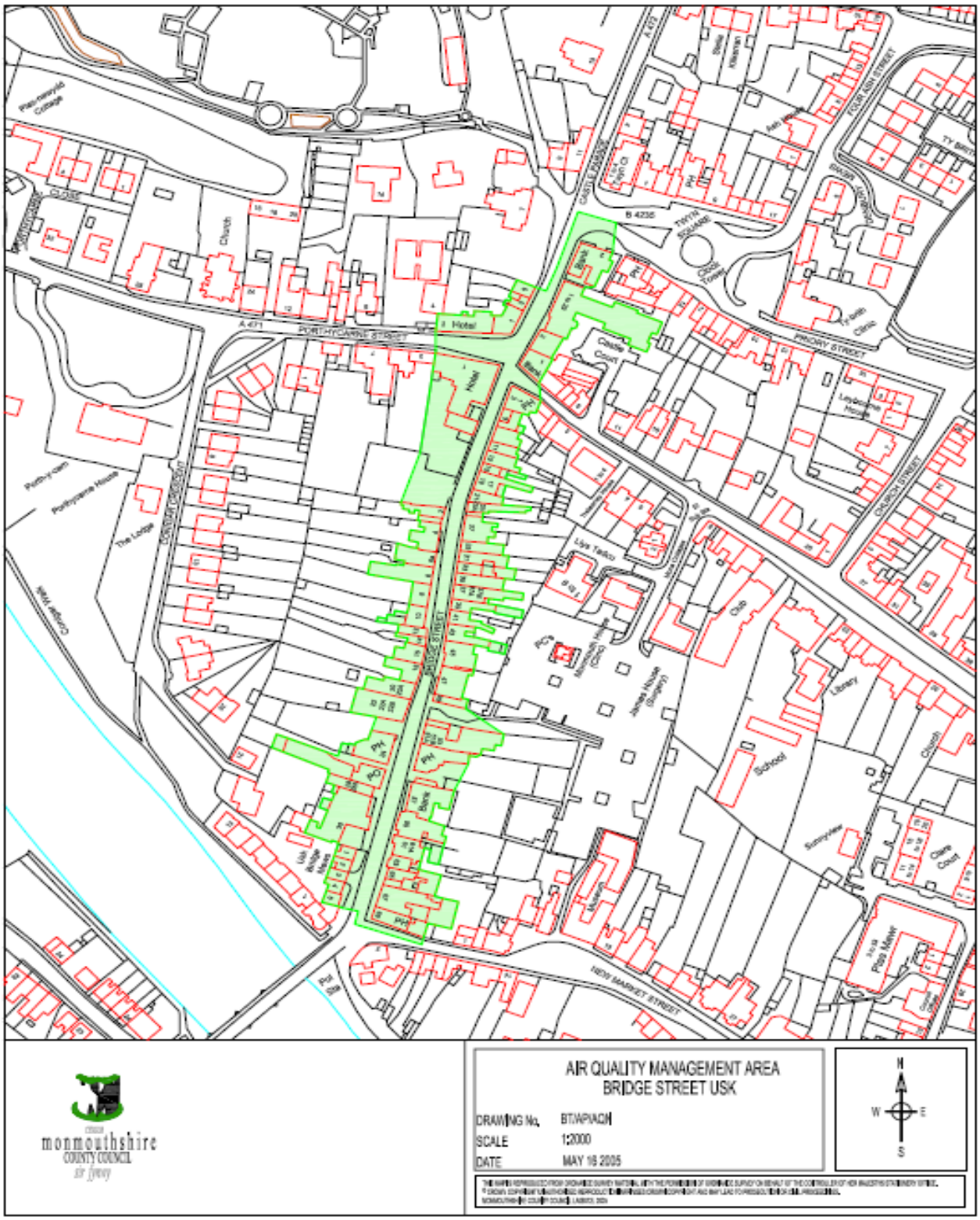


Figure D.2 – Usk AQMA



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
DMRB	Design Manual for Roads and Bridges – Air quality screening tool produced by Highways England
FDMS	Filter Dynamics Measurement System
LAQM	Local Air Quality Management
NO_2	Nitrogen Dioxide
NO_x	Nitrogen Oxides
PM_{10}	Airborne particulate matter with an aerodynamic diameter of 10µm (micrometres or microns) or less
$PM_{2.5}$	Airborne particulate matter with an aerodynamic diameter of 2.5µm or less
QA/QC	Quality Assurance and Quality Control
SO_2	Sulphur Dioxide