Newport City Council
Air Quality Action Plan

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

2023-2028

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Summary

This Air Quality Action Plan (AQAP) has been produced as part of Newport City Councils' statutory duties required by the Local Air Quality Management framework. It outlines the actions we will endeavor to take to improve air quality in Newport City Council between 2023 and 2028.

This action plan replaces the previous action plan which ran from 2008 and 2013.

This update of Newport City Councils AQAP for the period 2023 to 2028 builds upon the gradual progress that has been made towards achieving air quality that does not exceed air quality objectives anywhere in NCCs area.

Air pollution in Newport City Councils (NCCs) area is undergoing a transformation. The advent of COVID and associated lockdowns in early 2020 continues to show that that air quality impacts have not reverted to their 2019 levels and should continue their downward trends towards sustained compliance; perhaps due to changed working patterns, fuel prices and increasing modal change in transportation towards cleaner technologies such as electric cars, buses and even refuse vehicles. The councils five AQMAs centered around motorway junctions are all identified for revocation in view of ongoing sustained compliance and nitrogen dioxide trends which support this. In view of this, this AQAP is focused upon the six AQMAs that are not situated at M4 junctions; this being the AQMAs of Caerleon, Caerphilly Road, Cefn Road, Chepstow Road, George Street and Malpas Road. The Welsh Clean Air Advisory Panel stated in their report on the impacts of COVID-19 pandemic upon air quality on Wales that

"the COVID crisis has illustrated the role of societal change and behaviour in reducing air pollution and emphasises the importance of social sciences (such as social practice theory) to the air quality management process."

At the end of 2022 air quality in Newport was observed to be compliant with air quality standards across its six non-M4 based AQMAs. Where measures continue to be adopted the revocation of these AQMAs may be possible as early as 2025 if levels are observed to continue their trend.

Our duty towards NCC citizens through the Well Being of Future Generations Act links with this AQAP as does the newly adopted NCC Operational Climate Change Plan. Both Climate Change and LAQM work being inextricably linked with the improvement of air quality. The need for compliance with air quality objectives is envisaged as just the start of the air quality journey; as air quality improvements should be pursued beyond mere compliance with the best achievable air quality our aim in Newport wherever possible.

The measures identified within this AQAP are set against 2022 nitrogen dioxide levels and traffic counts commissioned in 2022. The ability of measures identified by communities and the council, to have additional impacts upon NO2 levels has been modelled where this is possible. Inevitably it is not possible to implement all measures at once due to available resources, however measures will be implemented wherever resources or opportunities allow between 2023-2028. Reassuringly there are already measures being implemented on an ongoing basis e.g. development of new active travel infrastructure, electrification of the Newport Bus fleet, electrification of the Newport City Council fleet, provision of green infrastructure, anti-idling actions and EV charging through the planning process, and

education and awareness projects relating to air quality with schools and communities.

Measures currently being worked on within AQMAs includes school travel plans, air quality education and monitoring in schools, plus the promotion of air quality messaging in communities through indicative sensors in public spaces and enabling AQMA groups to develop their own project ideas for funding bids in 2024.

Through the work of Air Quality Groups and Council Officers a range of measures are presented in Table 1 on the next page. Some are common to all AQMAs and others are bespoke for the AQMA concerned.

The councils Senior Scientific Officer will continue to work with communities living within AQMAs, and provide space for communities to develop their own interventions beyond those in the AQAP where resources external to those of NCC may arise. It is hoped that bringing together the aims of the AQAP, and communities in bespoke working will provide an inclusive range of air quality actions within each AQMA that can be taken forward.

Measures that are likely to contribute to emission reductions in each of the 6 AQMAs between 2023 -2028:

Measure Theme	Measure Approach in all AQMAs
Emissions from Transport	• **Promoting a cleaner vehicle fleet and alternatives** • **100% eBus services** • **ECO Stars haulage accreditation scheme update** • **Infrastructure projects where feasible** • **Green barrier (Caerphilly Road AQMA)**
Emissions from new development	• **Encourage EV charging as part of applications** • **Encourage Low Carbon heating as part of applications** • **Encourage Green infrastructure as part of applications** • **Encourage zero emission public transport access as part of applications** • **Updating Planning Guidance and Policy on Air Quality**
Education & Awareness	• **ECO Post air quality messaging monitors** • **Schools air quality monitoring learning initiative** • **Exploring walking hubs at school run times (Caerleon AQMA)** • **Maintaining Community Air Quality Groups**
Active Travel/Green Infrastructure	• **Promotion of Active Travel opportunities** • **Facilitate School Travel Plans** • **Promote School streets initiative** • **Promotion of green infrastructure opportunities**

In addition, the development control process will be used within AQMAs and throughout NCCs area to seek contributions from developers toward the improvement of air quality whether in the form of active measures or facilitating measures through s.106 contributions.

In this AQAP we outline how we plan to effectively tackle air quality issues within our control. However, we recognise that there are many air quality policy areas that are outside our influence (such as vehicle emissions standards agreed in Europe), but for which we may have useful evidence, and so we will continue to work with regional and central government on policies and issues beyond Newport City Council's direct influence.

The council will continue to work with regional and Welsh Government on air quality policies and issues. It will also continue work that is already being undertaken:

• Inspect all its permitted processes under Environmental Permitting (England and Wales) Regulations 2016, (EPR), to ensure compliance, that permits are updated as and when appropriate, and operation conditions are up to date with the latest guidance.

• Monitor nitrogen dioxide in its district to ensure air quality within the AQMAs and elsewhere does not deteriorate.

Responsibilities and Commitment

This AQAP was prepared by the Community & Environment department of Newport City Council with the support and agreement of the following officers, departments and external consultants:

Corporate Steering group:

- Steven Manning (Senior Scientific Officer)
- Matthew Cridland (Regulatory Services Manager, Environment & Community)
- Sylvia Gonzalez Lopez (Head of Environment and Public Protection)
- Steve Davies (Senior Strategy Manager) – Strategic Highways
- Richard Sexty (Education Transformation Manager) - Education
- Andrew Brooks (Highways Manager) - Highways
- Alistair Hopkins (Service Manager Transport) – Active Travel
- Ross Cudlipp (Climate Change Manager) – Climate Change
- Richard Cope (Transportation Manager) – Public Transport
- Laura Waldron (Programme Manager) – Climate Change
- Andrew Ferguson (Planning & Development Manager) - Regeneration

Community Air Quality Groups:

- Caerleon AQMA Air Quality Group
- Caerphilly Road and Cefn Road AQMAs Air Quality Group
- Chepstow Road, George Street and Malpas Road AQMAs Air Quality Group

All groups included community stakeholder reps from faith groups, schools, residents' groups and environmental groups. Additionally local councilors and cabinet members for environment and sustainability were involved in the groups.

External Consultants:

- AECOM (AQAP scoping, source apportionment and modelling)
- Air Quality Consultants (Annual Progress Reports)

This AQAP has been approved by:

Cllr Yvonne Forsey, Cabinet Member for Sustainability

This AQAP will be subject to an annual review/appraisal of progress and reporting to the Cabinet member for Environment. Progress each year will be reported in the Annual Progress Reports (APRs) produced by Newport City Council, as part of our statutory Local Air Quality Management duties.

If you have any comments on this AQAP please send them to Community & Environment at:

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1. Introduction

This report outlines the actions that Newport City Council will deliver between 2023 and 2028 to continue reducing concentrations of air pollutants and exposure to air pollution; thereby positively impacting on the health and quality of life of residents and visitors to the Newport City Council area.

It has been developed in recognition of the legal requirement on the local authority to work towards Air Quality Strategy (AQS) objectives under Part IV of the Environment Act 1995 and relevant regulations made under that part and to meet the requirements of the Local Air Quality Management (LAQM) statutory process.

NCC has taken up the Welsh Government challenge of achieving compliance with the nitrogen dioxide Air Quality Objective (AQO) that has been breached within its six non-M4 based AQMAs in the shortest possible time. The way in which this is taken forward will be dependent upon resources available to both the council, partners, and communities to implement air quality measures ranging from the simplest plantings to innovative engineered solutions where possible. Everyone's contribution counts at all scales.

This Plan will be reviewed every five years and progress on measures set out within this Plan will be reported on annually within Newport City Council's air quality Annual Progress Report (APR).

The work of Environment & Community through the Air Quality Groups serving the communities of the councils AQMAs will be an ongoing activity that aims to take things beyond sustained compliance towards the best achievable air quality for all.

Leader TBC

Councillor Yvonne Forsey, Cabinet Member for Climate Change & Biodiversity

Yvonne Forsey

2. Summary of Current Air Quality in Newport City Council

Most of Newport's 11 Air Quality Management Areas (AQMAs) have experienced continued improvement in observed NO_2 levels over the last 5-7 years.

Newport City Council's 2020 to 2022 Annual Progress Reports (Newport City Council, 2020) have shown that prevailing air quality continues to show improvements year on year.

Appendix A of this document contains air quality data for 2015 to 2020 for the 11 AQMAs and provides the current status of each reported at February 2022. Local monitoring data has been assessed to consider trends and locations of current exceedances of the air quality objectives. Overall, it is noted that the majority of the AQMAs have experienced some improvement in NO2 concentrations over the last 5-7 years, although exceedances remained in some AQMAs when considering 2019 data. Data is available for 2020 and 2021, and is presented, however, this data will have been impacted by the COVID-19 pandemic and is likely not representative of long-term trends.

As it has also been possible to obtain ratified data for diffusion tube monitoring during 2022 over the course of producing this plan; 2022 data has been used as the base year for undertaking modelling of measures and used as the descriptor year for current air quality. Surprisingly across many local authorities in the United Kingdom in 2022, continued year on year reduction in NO2 emissions has been observed within AQMAs. The annual average concentration of nitrogen dioxide for all diffusion tubes at residential receptors in 2022 stayed below the air quality objective of 40 µg/m3. This is the first time this has been observed in Newport's AQMAs across all monitoring locations and may represent the start of the sustained compliance journey which will end eventually with revocation of its AQMAs. Table 1 overpage shows the observed nitrogen dioxide annual averages for all monitoring locations run between 2018 and 2022.

The value of funding for measures that is accessible through Welsh Government LAQM grants remains important to NCC as achieving compliance over the shortest possible timescale and sustaining it is a priority. NCCs view is that sustained compliance needs to be demonstrated over a number of years where no greater than 90% of the AQO level of 40 µg/m3 is being observed and trends remain downward or flat i.e. 36 µg/m3 or less.

If the observed compliance in 2022 across all AQMAs continues for at least another 3 years then their revocation should be possible around 2025.

Please also refer to the latest APR from Newport City Council at https://www.newport.gov.uk/en/Transport-Streets/Pollution-and-noise-control/Air-quality-data-reports.aspx

Table 1 – 2022 NO2 monitoring data and previous 4 years.

Location	AQMA	Diffusion Tube ID	Site Type	Valid Data Capture for Monitoring Period (%)	Valid Data Capture 2022 (%)	NO_2 Annual Mean Concentration (µg/m^3)				
						2018	2019	2020	2021	2022
St Julian's (AURN)	AURN	AN1	Urban Background	61.9	61.9	19.0*	20	15	15.1	15.0**
14 High Street Caerleon	Caerleon	NCC8	Roadside	100	100	38.3	34.6	27.9	28.9	27.1
19 High Street (Caerleon)	Caerleon	NCC25C	Façade	100	100	**41.6**	**43.8**	26.9	29.2	28
15 High Street, Caerleon	Caerleon	NCC26B	Façade	91.7	91.7	**50.9**	**48.6**	35	35.4	33.4
18 High Street, Caerleon	Caerleon	NCC27B	Roadside	100	100	**41.6**	**40.5**	28.5	30.4	30.2
6 Castle Street, Caerleon	Caerleon	NCC35A	Roadside	91.7	91.7	25.6	25.9	22.7	23.2	22.3
1 Castle Street, Caerleon	Caerleon	NCC36A	Roadside	91.7	91.7	23.6	23	19.6	19.7	20
7 Castle Street (Caerleon)	Caerleon	NCC43A	Roadside	91.7	91.7	29.7	30.3	22.9	22.9	23.3
9 Castle Street (Caerleon)	Caerleon	NCC47A	Roadside	100	100	34.3	36.7	25.1	25.9	26.4
Carlton House, Carlton Terr_ High Street, Caerleon	Caerleon	NCC74	Roadside	100	100	23.5	24.9	17.5	19.3	18.1
Gwent Cottage	Caerleon	NCC79	Roadside	100	100	18.8	21.1	31.7	31.6	19.7
Charles Williams Primary School	Caerleon	NCC83	Roadside	83.3	83.3	14	14.9	11	12.2	12.9
5 Caerphilly Road	Caerphilly Rd	NCC30B	Roadside	83.3	83.3	28.9	30.5	22.7	23.7	22.1

Location	AQMA	Diffusion Tube ID	Site Type	Valid Data Capture for Monitoring Period (%)	Valid Data Capture 2022 (%)	NO_2 Annual Mean Concentration ($\mu g/m^3$)				
						2018	2019	2020	2021	2022
85 Caerphilly Road	Caerphilly Rd	NCC48D	Roadside	100	100	**44.9**	**42.5**	34.9	35	33.8
8 Caerphilly Road	Caerphilly Rd	NCC49C	Roadside	100	100	29.7	28.3	23.9	24.7	23.3
5 Cefn Road	Cefn Rd	NCC29C	Façade	83.3	83.3	**41**	**42.7**	31	32.4	37.5
69 Cefn Road	Cefn Rd	NCC33B	Façade	100	100	32.4	32.8	23.5	27.5	33
19 Cefn Road	Cefn Rd	NCC71A	Façade	100	100	39.8	37.8	28.1	34.9	29.4
69 Chepstow Road	Chepstow Rd	NCC1	Roadside	100	100	29.7	30.2	24.1	24.1	23.4
19 Caerleon Road	Chepstow Rd	NCC24C	Façade	100	100	31.1	35.8	26.3	27.5	28.9
155 Caerleon Road	Chepstow Rd	NCC28B	Roadside	83.3	83.3	33.7	34.2	28.4	29.6	26.4
9 Caerleon Road	Chepstow Rd	NCC50	Roadside	100	100	38.1	**41.4**	30.2	32.3	28.5
153/155 Chepstow Road	Chepstow Rd	NCC65	Roadside	91.7	91.7	**44**	**45**	31.9	33.6	30.1
109 Chepstow Road	Chepstow Rd	NCC66	Roadside	91.7	91.7	34.8	34.8	25.7	28.2	29.4
1 Livingstone Place	Chepstow Rd	NCC81	Roadside	83.3	83.3	34.5	39.5	27.8	28	29
73 George Street	George St	NCC12A	Façade	100	100	35.1	36.4	28.1	29.1	30.2
81 George Street	George St	NCC51	Façade	100	100	37.5	**41.1**	32.8	31.9	32.9
17 George Street	George St	NCC62	Façade	91.7	91.7	32.3	35.4	25.5	28	33.6
6 George Street	George St	NCC72A	Façade	91.7	91.7	33.5	33.6	27.5	28.3	28.8
158 Bassaleg Road	Glasllwch	NCC18C	Façade	100	100	39.5	27.8	22.4	20.9	19.8
Bassaleg Road (162/3)	Glasllwch	NCC41B	Façade	91.7	91.7	25.4	22.4	17.8	22.8	22.1
69 Glasllwch Crescent	High Cross	NCC2C	Façade	91.7	91.7	36.2	35.8	26.3	28.3	27.8

Location	AQMA	Diffusion Tube ID	Site Type	Valid Data Capture for Monitoring Period (%)	Valid Data Capture 2022 (%)	NO_2 Annual Mean Concentration (µg/m^3)				
						2018	2019	2020	2021	2022
67 Glasllwch Crescent	High Cross	NCC4B	Façade	100	100	34.8	33.5	25.4	25.3	25.9
64 Glasllwch Crescent	High Cross	NCC7B	Façade	100	100	27.6	29.2	21.1	23.4	22.1
Glasllwch Crescent	High Cross	NCC15	Roadside	100	100	22.5	23.4	24.3	22.5	20.8
48 Malpas Road	Malpas Rd	NCC14A	Roadside	100	100	37.6	40	25.9	28.6	28.8
4-6 Malpas Road	Malpas Rd	NCC64	Roadside	83.3	83.3	39.7	**41**	28.8	31.8	19.2
Buckland Cottage	Royal Oak	NCC31	Façade	100	100	36.7	35.6	29.9	26.6	25.7
153 Malpas Road	Shaftsbury	NCC6B	Roadside	100	100	34.6	31.2	25.7	24.4	22.6
179 Malpas Road	Shaftsbury	NCC17A	Façade	100	100	25.4	25.6	20.3	21	20.3
40 Denbigh Road	St Julians	NCC16A	Roadside	100	100	28.2	27.5	22.6	21.8	22.1
40 Denbigh Road	St Julians	1S1	Facade	91.7	91.7	-	-	-	20.6	17.1
Denbigh Road Lamp post	St Julians	1S2	Roadside	100	100	-	-	-	18.9	17.3
Denbigh Road Rail	St Julians	1S3	Roadside	100	100	-	-	-	20.6	19.4
41 Denbigh Road	St Julians	1S4	Facade	100	100	-	-	-	17.1	16.3
M4 Old Barn	WG	AN2	Roadside	70.2	70.2	**41**	36.5	28.3	32.4	29.2**
M4 Groundhog 1 (Old Barn)	WG	NCC21D, NCC23E	N/A	100	100	**54.6**	**48.5**	**46.7**	34.7	33.8
St. Julians School	AURN	NCC37, NCC38, NCC39	Background	91.7	91.7	18.6	18.5	14.4	13.5	13.3
13 Mill Street (Caerleon)	None	NCC3A	Façade	91.7	91.7	17.6	18	12.6	15	13.6

Location	AQMA	Diffusion Tube ID	Site Type	Valid Data Capture for Monitoring Period (%)	Valid Data Capture 2022 (%)	NO_2 Annual Mean Concentration (µg/m^3)				
						2018	2019	2020	2021	2022
276 Corporation Road	None	NCC5	Roadside	100	100	27.3	28.3	27	28	26.6
182 Corporation Road	None	NCC9D	Roadside	91.7	91.7	27.5	29.3	26.8	26.1	26.5
169 Caerleon Road	None	NCC11A	Roadside	100	100	31	32.3	25.2	26.4	25.3
Corporation Road Flats Crossing	None	NCC13A	Roadside	100	100	-	-	26.9	29.2	26.7
700 Corporation Road	None	NCC19A	Roadside	100	100	-	-	30	29.8	26.9
222 Corporation Road	None	NCC20C	Roadside	100	100	32.5	35.3	28.8	30.8	30.8
21 Bridge Street	None	NCC32E	Façade	91.7	91.7	28.2	28.6	21.2	22.6	22.2
The Priory, Caerleon	None	NCC34A	Façade	100	100	26.7	27.1	19.9	20.5	19.4
23 Bridge Street	None	NCC40B	Roadside	100	100	29.6	33.6	23.1	26.3	26.4
69 Cardiff Road (Bellevue Stores)	None	NCC42	Roadside	91.7	91.7	25.4	24	18.1	24.7	25.4
175/177 Corporation Road	None	NCC44B	Roadside	100	100	27.2	29.5	22.2	23	22.5
201 Corporation Road	None	NCC45B	Roadside	91.7	91.7	29.2	31.2	24	24.7	24.9
*148 Chepstow Road	None	NCC46B	Roadside	100	100	**44.4**	**48.1**	35	37.3	35.3
9 Station Road (Caerleon)	None	NCC52	Roadside	91.7	91.7	21	21	18.5	18.6	18.4
5 High Street (Caerleon)	None	NCC53	Roadside	100	100	19.9	22	15.6	16	15.2

Location	AQMA	Diffusion Tube ID	Site Type	Valid Data Capture for Monitoring Period (%)	Valid Data Capture 2022 (%)	NO_2 Annual Mean Concentration ($\mu g/m^3$)				
						2018	2019	2020	2021	2022
12 Eastfield Road	None	NCC54	Façade	100	100	-	-	-	8.9	7.7
52 College Glade	None	NCC55	Façade	91.7	91.7	-	-	-	9.7	9.7
30 Clytha Park Sq (Spar)	None	NCC57	Roadside	91.7	91.7	29.6	28.3	22.1	25.8	25.8
1 Caerau Road	None	NCC58	Roadside	91.7	91.7	37.6	38.4	29.4	30.4	30.4
99 Stow Hill	None	NCC59	Roadside	91.7	91.7	28.2	28.4	20.4	19.8	21.6
1 Victoria Place	None	NCC60	Roadside	100	100	34	31	22.2	23.6	24.1
41 Pant Road	None	NCC63	Reassigned to NCC84	100	100	-	-	-	-	27
1-17 Corporation Road	None	NCC67	Façade	100	100	30.3	34.6	26	25.9	23.1
Art College, Clarence Place	None	NCC68	Roadside	83.3	83.3	31.5	32.1	20.4	23.5	23.5
180 Caerleon Road	None	NCC69	Roadside	91.7	91.7	25.2	27	21.7	22.1	21.4
1 Queens Hill	None	NCC70	Façade	75	75	23.6	35.4	25.8	29.9	28.1
19 Goldcroft Common (Caerleon)	None	NCC75	Façade	100	100	15.4	19.2	12.8	12.9	12.2
34 Queens Hill	None	NCC77	Reassigned to NCC85	100	100	-	-	-	-	18.6
708 Corporation Road	None	NCC78	Façade	100	100	30.6	29.2	19.6	20.3	30.1
24 Bridge Street	None	NCC80	Façade	100	100	25	41.8	29.4	33.1	33.6
13 Queens Hill	None	NCC82	Façade	91.7	91.7	25.9	18.5	18.6	21	20.5
41 Pant Road	None	NCC84	Roadside	100	100	28.9	29	19.9	18.9	-
34 Queens Hill	None	NCC85	Façade	100	100		29.2	17.7	19.1	-

3. Newport City Council's Air Quality Priorities

The reason Newport City Council currently needs an Air Quality Action Plan is to achieve and maintain compliance with Air Quality Objectives. Newport is a compact city with a motorway running through it and arterial trunk roads that unavoidably experience heavy trafficking and when motorway incidents occur diverted traffic which exacerbates an already busy network. Opportunities to reduce transport related air quality pressure are sough wherever possible either directly or through indirect routes such as development control where air quality beneficial measures can be embedded at the planning stage and realised in built out sites through things like ULEV infrastructure, anti-idling schemes and green infrastructure.

Newport's air quality lends itself to city centre based AQMAs (Chepstow Road/Caerleon Road, George Street and Malpas Road), suburban AQMAs (Caerphilly Road and Cefn Road), and an AQMA in the settlement of Caerleon. Motorway junction based AQMAs have also been declared in 5 locations however these have seen improvements since 50mph probably in conjunction with some modal change, a transition to cleaner vehicles and EV and of course COVID anomalies in 2020 & 2021 which have brought about more home working and changed patterns of office attendance both in terms of days and the time of day; all of which combine to take pressure off air quality at these junctions.

The City is undergoing transformation from some of its industrial past to accommodate new communities such as the Glan Lyn development and its growth is ongoing in keeping with Welsh Government drivers for housing provision and the Well Being of Future Generations.

As mentioned, NCC has taken up Welsh Government's challenge of achieving compliance with those AQOs that are currently breached within its six non-M4 AQMAs in the shortest possible time. The way in which this is taken forward will be dependent upon resources available to both the council, its partners, and communities in order to implement air quality measures ranging from the simplest plantings to innovative engineered solutions where they can be funded. Please note that M4 based AQMAs are now identified for revocation chronologically in accordance with their sustained compliance measurement years.

Having a Sustainable Travel Strategy (STS) makes the need for improvements that impact on air quality applicable across all of Newport City Council and not just its AQMAs. In conjunction with the AQAP the STS forms a raft of policy and practice that is aimed at improving air quality on an ongoing basis.

The value of and engagement with communities and schools cannot be underestimated as it is at the root of behaviour change either through school children as future agents of change adopting investigation-based learning on air quality or established community groups and individuals feeling empowered through being given the tools to generate their own air quality-based projects.

The work of other corporate teams on themes like climate change, green infrastructure and active travel offer strong linkages with the priorities of this AQAP and may well lead on occasion or work in tandem with the AQAP.
Air Quality principal themes have been approved based upon other AQAP practice and the organisation of functional areas at NCC. These are shown with associated candidate measures in Table 1 on the next page.

Table 2 – Air Quality Themes and Candidate Measures by AQMA

Measure Theme	Measure Approach in all AQMAs
Emissions from Transport	• **Promoting a cleaner vehicle fleet and alternatives** • **100% eBus services** • **ECO Stars haulage accreditation scheme update** • **Infrastructure projects where feasible** • **Green barrier (Caerphilly Road AQMA)**
Emissions from new development	• **Encourage EV charging as part of applications** • **Encourage low energy heating as part of applications** • **Encourage Green infrastructure as part of applications** • **Encourage zero emission public transport access as part of applications** • **Updating Planning Guidance and Policy on Air Quality**
Education & Awareness	• **ECO Post air quality messaging monitors** • **Schools air quality monitoring learning initiative** • **Exploring walking hubs at school run times (Caerleon AQMA)** • **Maintaining Community Air Quality Groups**
Active Travel/Green Infrastructure	• **Promotion of Active Travel opportunities** • **Facilitate School Travel Plans** • **Promote School streets initiative** • **Promotion of green infrastructure opportunities**

3.1 Public Health Context

The public health aspects of air quality have always been a concern for environmental health practitioners engaged in air quality work and each year new bodies of work are released which shed light on the health impacts of air quality and reinforce the need for ongoing interventions to improve air quality e.g. The UK Air Quality Plan of 2017 which clarified and reinforced the mechanisms by which air quality impacts upon human health in plain language.

The evidence base now includes caselaw which has cited air quality as a contributory factor in the death of an individual for the first time. A landmark second inquest ruled that air pollution contributed to the death in London of a 9-year old, stating that:

"Air pollution was a significant contributory factor to both the induction and exacerbation of Ella's asthma. During the course of her illness, between 2010-2013, she was exposed to levels of NO2 and PM in excess of WHO Guidelines. The principle source of her exposure was traffic emissions."

World Health Organisation (WHO) air quality guide limits are now pushing the case with governments for more stringent limits around the world. Public Health Wales is working with Welsh Government and others to inform the development of new, tougher targets on air pollution. Increased public awareness about air pollution is also a key priority and they are currently reviewing and updating current resources of air pollution to include better, more specific messaging for different groups such as parents and the health community.' (Air Quality Wales 2020).

Newport City Council recognises the importance of engagement with communities in respect of health and air quality and has formed air quality groups of local stakeholders that cover the six non-M4 based AQMAs of Caerleon, Caerphilly Road, Cefn Road, Chepstow Road/Caerleon Road, George Street and Malpas Road.

Whatever the role, if any, air pollution is found to have in the spread of COVID-19, the pandemic has highlighted health and societal inequalities and inequities, including those relating to air quality. To address these, Public Health Wales is working with local authorities and academics as part of the Clean Air Advisory Panel that will make recommendations to Welsh Government on policies that will protect the most vulnerable from air pollution. Newport City Council has also been part of the 'Air Inequalities' project that has been hosted by the Environment Agency in the UK. And from this wider networks of community groups and air quality champions have been established that promote air quality messages and practice.

Even before COVID-19, Welsh Government had recognised the need to address the harms that are associated with the road traffic environment and pledged to cut the default speed limit from 30mph to 20mph where people live, work and play. There is evidence to suggest that the potential public health benefits of this will be significant and wide ranging, from reducing the number and severity of crashes, to reducing isolation, loneliness and community severance. There is also evidence that by encouraging 'smoother' driving, with less acceleration and braking, this change can have positive effects on air quality. In addition, it is also expected to encourage more people to walk and cycle, rather than using the car, which will also have the effect of improving air quality. The 20mph speed limits to be applied across Newport are likely to contribute to the health outcomes above.

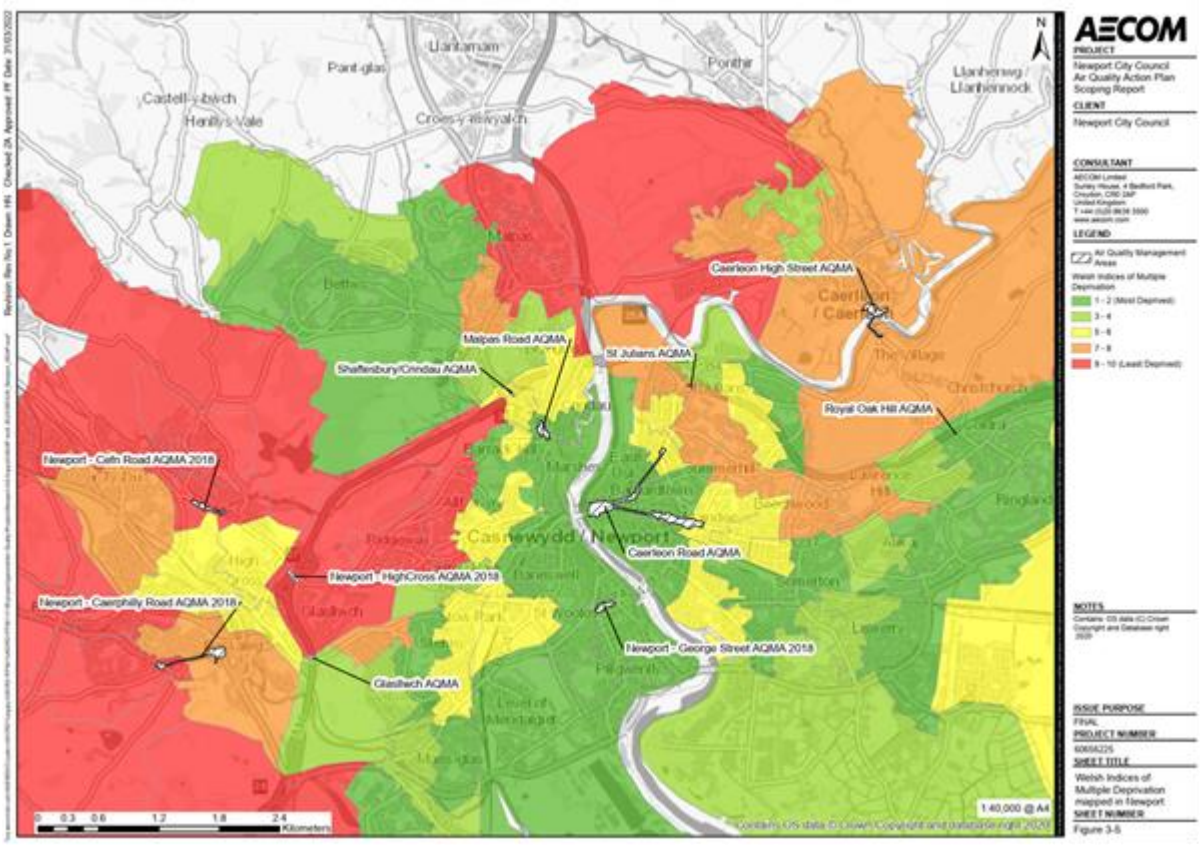
As recently as June 2022 the National Audit Office recognised the need for governmental expedience in tackling air quality after the unavoidable delays that have taken place as a result of the COVID Pandemic throughout 2020 & 2021. The passage of revised air quality legislation to tackle health impacts associated with nitrogen dioxide and particulates is currently taking place through Welsh Government and the regulatory requirements that arise from this should push forward the work that is done on air quality and raise the standards associated with it.

Tools are starting to be developed which could enable air quality practitioners to identify the potential health savings that can be made through reducing levels of nitrogen dioxide where they are elevated e.g. increase in life expectancy/years, reductions in occurrence of disease. Additionally, a health care financial saving for the NHS might be estimated where air quality improves which may in turn serve to validate measures taken to improve air quality at a variety of scales.

3.2 Community context

Newport has a diverse range of communities living within its boundary and this is also reflected within the AQMAs it has. Engaging with communities and understanding their lived experiences of air quality pressures is considered by Newport City Council to be a key part of good LAQM practice and the review and delivery of AQAPs. After all if you are not taking into consideration the views of the communities living with poor air quality who are you delivering LAQM for?

AQMAs in Newport include the least deprived and most deprived communities in Newport; and as such the council's treatment of air quality needs to be inclusive of all communities within AQMAs. It is recognised that air quality issues in Newport are not limited by geographic boundary or deprivation status; it being seen on the mapping below that AQMAs include people from the most deprived to least deprived groups. The implication being that where resources are limited there may be a case for tackling issues in the most deprived areas first; however, the aim of the AQAP is that all of the measures to reduce emissions that are currently in place and those which can be implemented have as wide an impact across all AQMAs as possible e.g. electric bus services.



As mentioned in 3.1 above, Newport City Council has engaged in the Environment Agency led Air Inequalities Project during 2020 to 2022 and this has resulted in improved networks of people and groups that are passionate about air quality and tackling inequalities in health and environmental exposure. Through the production of new AQAP it has been possible to form local air quality groups that serve the main 6 AQMAs. These groups provide a forum for local engagement regarding air quality issues that matter to people and it has been possible to discuss peoples lived experience of air quality in their neighbourhood. The councils senior scientific officer works with these groups to discuss work that is currently being done by the

council and takes on board the groups ideas for things that could potentially be delivered by the council or local communities. Annual grant applications Welsh Government have provided continuous real time monitoring for AQMA communities so the daily pattern of air quality levels can be observed and discussed with communities in terms of driver behaviours and ways to reduce peak time emissions and encourage alternatives to car use where possible. Grant aided travel plan and air quality monitoring learning for schools within AQMAs, is being rolled out during 23/24. This will further develop engagement and messaging with communities about what we all need to consider and do in relation to travel and air quality where we can.

School communities represent some of the most vulnerable receptors to poor air quality and NCC is committed to developing air quality interventions under the theme of Education & Awareness e.g. anti-idling schemes, school streets pilots, teaching resources and school travel plans. This will initially be across those schools within AQMAs but does not need to be limited to this in the longer term.

3.3 Wellbeing of Future Generations context

The Well Being of Future Generations Act forms an umbrella under which council all council activities are undertaken. This is no less the case with Air Quality and as such this AQAP is underpinned by the principles and guidance issued by the Future Generations Commissioner for Wales.

A good example of this being the document *Inequality in a Future Wales: Areas for action in work, climate, and demographic change (2021)* which identifies inequalities relating to climate change and the need for stronger transportation and active travel measures in a Climate Change setting which in turn as mentioned 3.4 below, is a local air quality setting as well.

In the document the Future Generations Commissioner for Wales states in the document *Transforming how we move around in Cardiff:*

“There is an opportunity to create more sustainable transport solutions for the growth of population and economy in Cardiff and I advise you collaborate with some 'unusual suspects' to understand the implications of planning this for the long term.”

“...consider how you encourage your own staff to make this shift, how you can reduce emissions in the way goods, services and people are moved, and how you can plan future infrastructure and housing in a way that enables people to use low-carbon transport, public transport, walk or cycle.”

Newport has similar opportunities to transform how people move around the area in emission reducing ways.

3.4 Climate Change context

Actions to address Climate Change also contribute positively to local air quality as both have a common aim of reducing emissions to atmosphere. Where the carbon dioxide emissions of transportation are being tackled in a climate change context there is an associated benefit for local air quality in terms of emissions of nitrogen dioxide as both are components of combustion engine emissions. Local emissions and global challenges are inextricably linked

and as such both Climate Change and Local Air Quality agendas need to be woven together for maximum impact.

NCC Declared Climate Emergency and have followed up with a draft Climate Change Plan (2022) which means that linkages can be developed between this AQAP and the Climate Change Plan. In doing so the measures identified by both Climate Change Plan and Local Air Quality work can be accounted for in terms of their climate change and local air quality benefits.

Closer working between Climate Change/Sustainability and Air Quality practitioners within NCC will enable stronger integrated investigations and problem solving to be achieved that addresses these inextricably linked areas.

3.5 Sustainable Travel Strategy context

Newport City Council approved a Sustainable Travel Strategy in 2019 which has a lot of parallels with this AQAP which are summarised below:

Table 3 - Sustainable Travel Strategy and AQAP parallels

Sustainable Travel Strategy Topics	Air Quality Action Plan Pillars
• Public Engagement/Schools	• Education & Awareness
• Transportation	• Emissions from Transportation
• Infrastructure/Active Travel	• Active Travel & Green Infrastructure
• Planning/Construction	• Emissions from New Development

As part of taking forward this AQAP it may be possible to incorporate elements of the STS which do not at present form part of the AQAP e.g. noise. This is further reinforced in the revision to TAN11 Planning advice note which brings together air quality, soundscape, biodiversity, and ecosystems. This was exemplified through the 2022 Clean Air Day event in Newport which included a guided environmental walk for school children actively observing air quality, noise and biodiversity and writing this up as part of school projects.

3.6 Biodiversity and Ecosystems

As mentioned in 3.5 and below in 3.7, biodiversity and ecosystems are a crucial element of the air quality and environmental space. This being exemplified within the revised TAN11 planning advice note through the integration of biodiversity and air quality in Planning policy for Wales. Green Spaces and Infrastructure have a valuable role to play in providing air quality beneficial environments and through new development it has also been possible for NCC to request air quality beneficial plantings and species to underpin this valuable addition to local environments. Existing green space and ecosystems within NCC are also valued and need to be managed and considered such that they are not prejudiced by any air quality pressures that currently exist. The aim of this AQAP to achieve compliance within AQOs may also be applicable to the ongoing maintenance of existing and new green space/infrastructure and opportunities that may arise here. In some cases, green infrastructure may be a measure in its own right in contributing towards the compliance that is being sought in our AQMAs.; something which has already featured in air quality grant bids and will in the future.

3.7 Planning and Policy context

The Local Transport Plan is due to be replaced by a regional Transport Plan and as such this AQAP needs to feed into regional transport messaging.

The place of air quality in s.106 planning obligations is something that this AQAP makes a commitment to pursue. Updating the NCC Planning SPG on air quality should further facilitate this. Where relevant requests are envisaged for the updating of monitoring equipment and local air quality action planning/measures. This in turn will continue to contribute towards achieving sustained air quality objective compliance.

The Planning SPG in respect of air quality needs updating to reflect current practice in terms of air quality assessment and measure requests in relation to new development.

As part of NCCs updating of its Local Development Plan the opportunity exists to Existing core policy that includes Air Quality and need for development of stand alone AQ Core Policy as part of new LDP

s.106 requests to be developed in line with air quality measures identified for existing AQMAs in AQAP; and embedded in updated SPG.

AQ SPG in place which specifies grounds for AQA and is under review with regard to incorporating s.106 and baseline air quality measure contributions towards reducing emissions for all developments irrespective of AQMA status.

Pending revision to TAN 11 brings air quality into a planning policy setting for new development which builds upon the approaches taken by NCC as an LPA. It also brings closer together the areas of climate change and air quality such that unified approach to planning and air quality/climate change could be developed.

3.8 Pending Legislation Context

Pending legislation in the form of The Environment (Air Quality and Soundscapes) (Wales) Bill 2023 has the potential to improve the air quality landscape as follows.

It will aim-to improve air quality and reduce the impacts of air pollution on human health, biodiversity, the natural environment, and the economy.

The Bill also aims to facilitate improvements in the quality of the air environment at a Wales-wide level, at a local and regional level and throughout society.

It will contribute to Welsh Government's response to the climate and nature emergencies, alongside efforts to reduce inequalities.

The Bill includes changes to existing legislation which will streamline, strengthen and complement existing processes to make them more effective and accessible.

The Bill can be summarised as doing the following:

- provide a framework for setting national air quality targets;
- amend existing legislation relating to:
    - the national air quality strategy,
    - local air quality management,
    - smoke control,
    - clean air zones/low emission zones; and
    - vehicle idling;
- place a duty on Welsh Ministers to promote awareness of air pollution; and
- place a duty on Welsh Ministers to publish a national soundscapes strategy.

It is hoped that the advent of new legislation will provide opportunities to push for improvements in air quality in new domains e.g. vehicle idling as well as strengthening existing ones e.g. LAQM and Smoke Control.

3.9 Other contexts

There are inevitably more areas that are applicable to air quality than those above and as such it we have highlighted those which link with LAQM work. It is recognised that Natural Resources Wales have a strong interest in air quality through their work streams which include ecosystem protection and environmental permitting of processes.

NRW identify in their State of Natural Resources Report (SoNaRR) for Wales 2020: "*Poor air quality is one of the largest environmental risks to ecosystems and health in Wales. The majority of air pollutants have declined in Wales in recent decades; however, concentrations of ammonia, a form of nitrogen, and ozone are trending upwards and impacting on ecosystems. Legislative, technological, infrastructure, market forces and changes in society's behaviour will all be needed to improve air quality in Wales." SoNaRR for Wales 2022.*

3.10 Source Apportionment

The AQAP measures presented in this report are intended to be targeted at pollution from the predominant sources of emissions within Newport City Council's area for LAQM purposes i.e. emissions from transportation.

A source apportionment exercise was carried out by Newport City Council in 2022 by AECOM. This was undertaken using 2019 diffusion tube data for AQMAs and traffic counts for 2019 or recent traffic counts one normalised to 2019 for each AQMA. This identified that within the respective AQMAs, the percentage source contributions as shown on the following pages. A copy of the full source apportionment study can be found at the following link

Air quality data & reports | Newport City Council

The figures below provide source apportionment for each of the AQMAs.

Figure 1 – Source Apportionment Caerleon, High Street

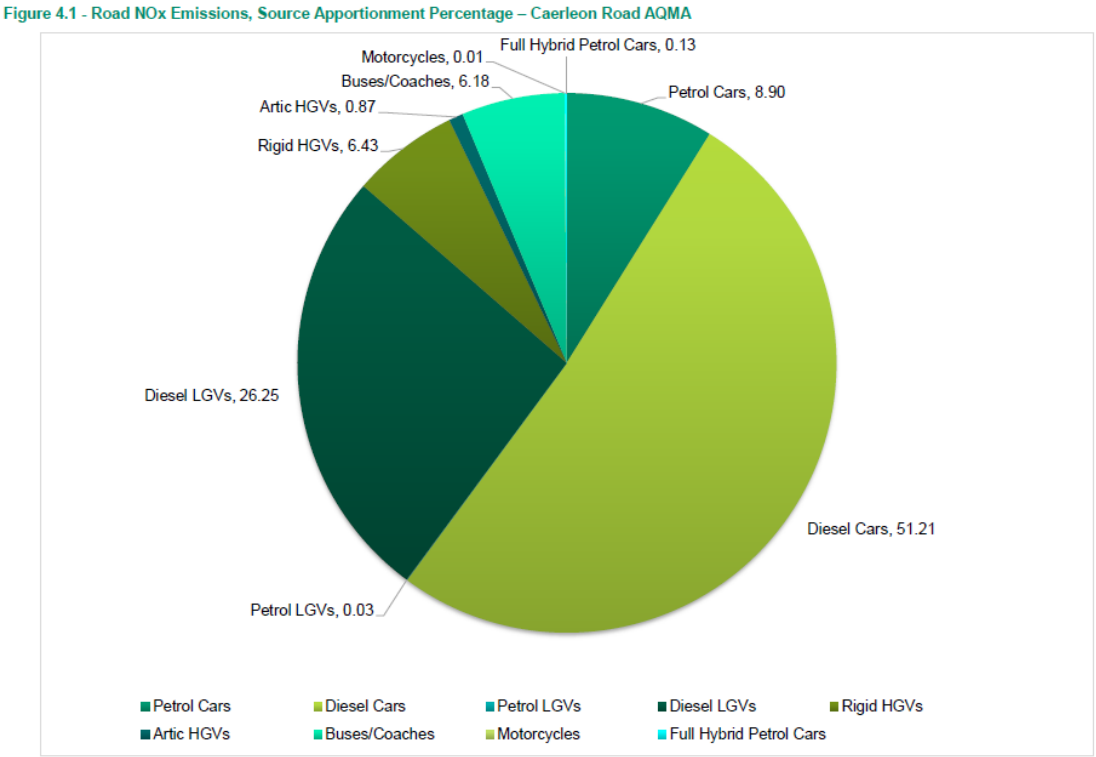


Figure 2 – Source Apportionment Caerphilly Road

Figure 4.2 - Road NOx Emissions, Source Apportionment Percentage – Caerphilly Road AQMA

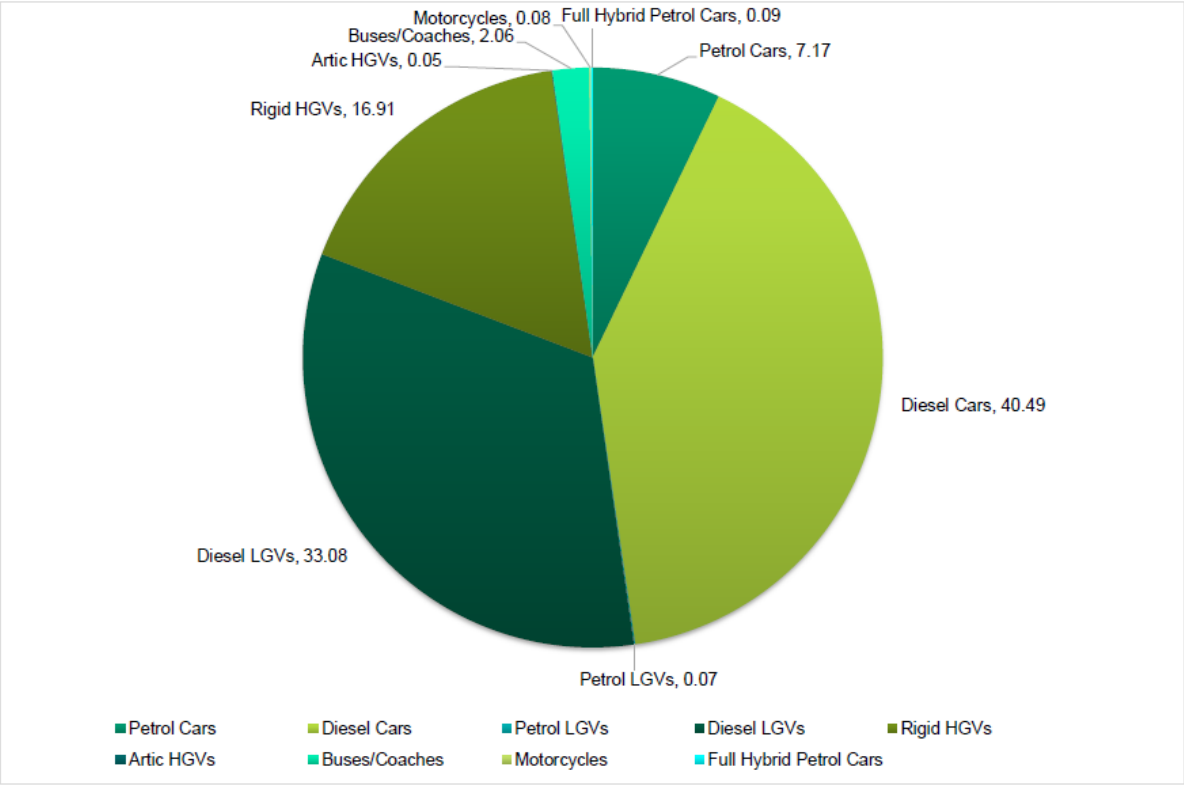


Figure 3 – Source Apportionment Cefn Road

Figure 4.3 - Road NOx Emissions, Source Apportionment Percentage – Cefn Road AQMA

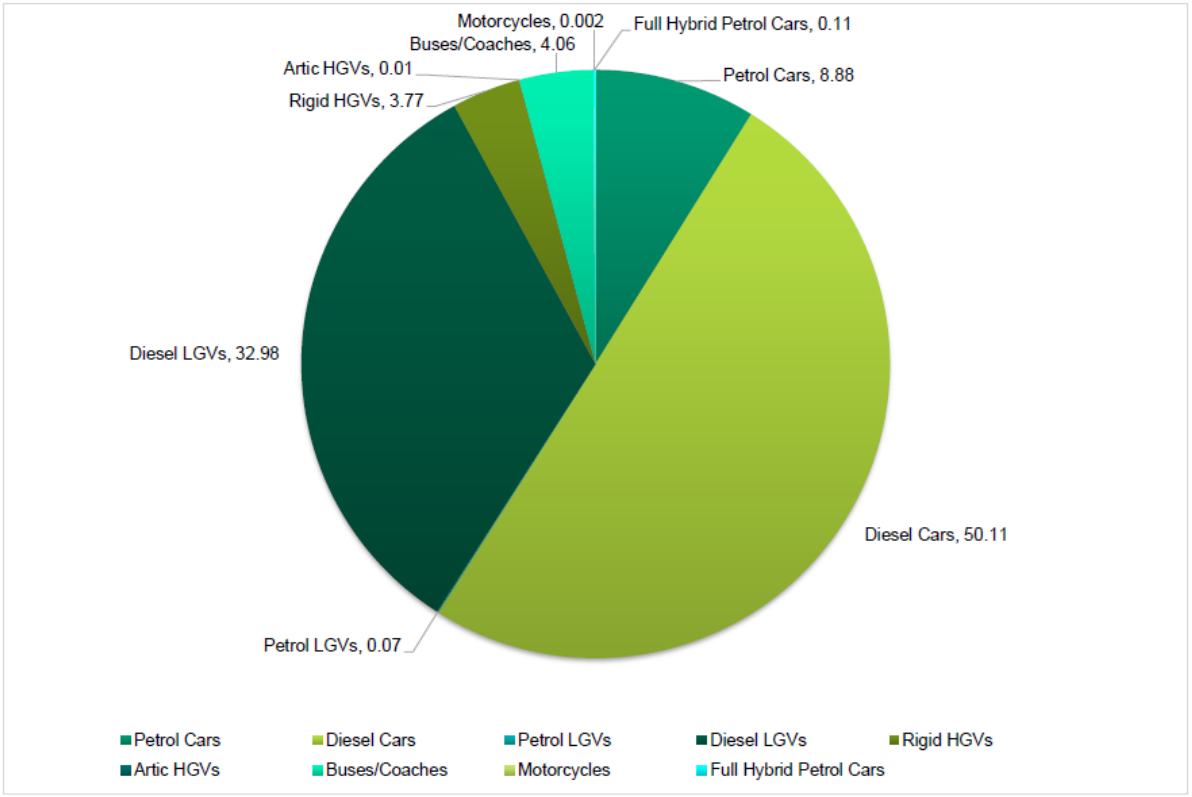


Figure 4 - Chepstow Road/Caerleon Road

Figure 4.4 - Road NOx Emissions, Source Apportionment Percentage – Chepstow Road AQMA

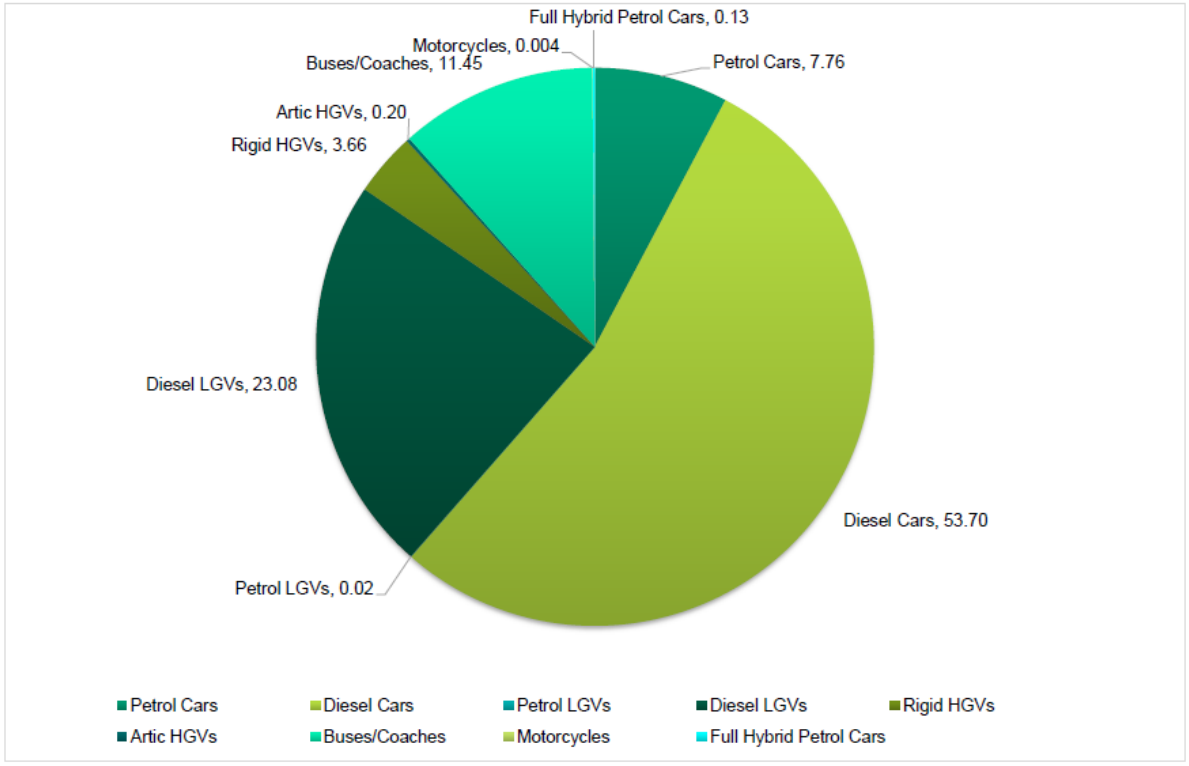


Figure 5 – Source Apportionment George Street

Figure 4.5 - Road NOx Emissions, Source Apportionment Percentage - George Street AQMA

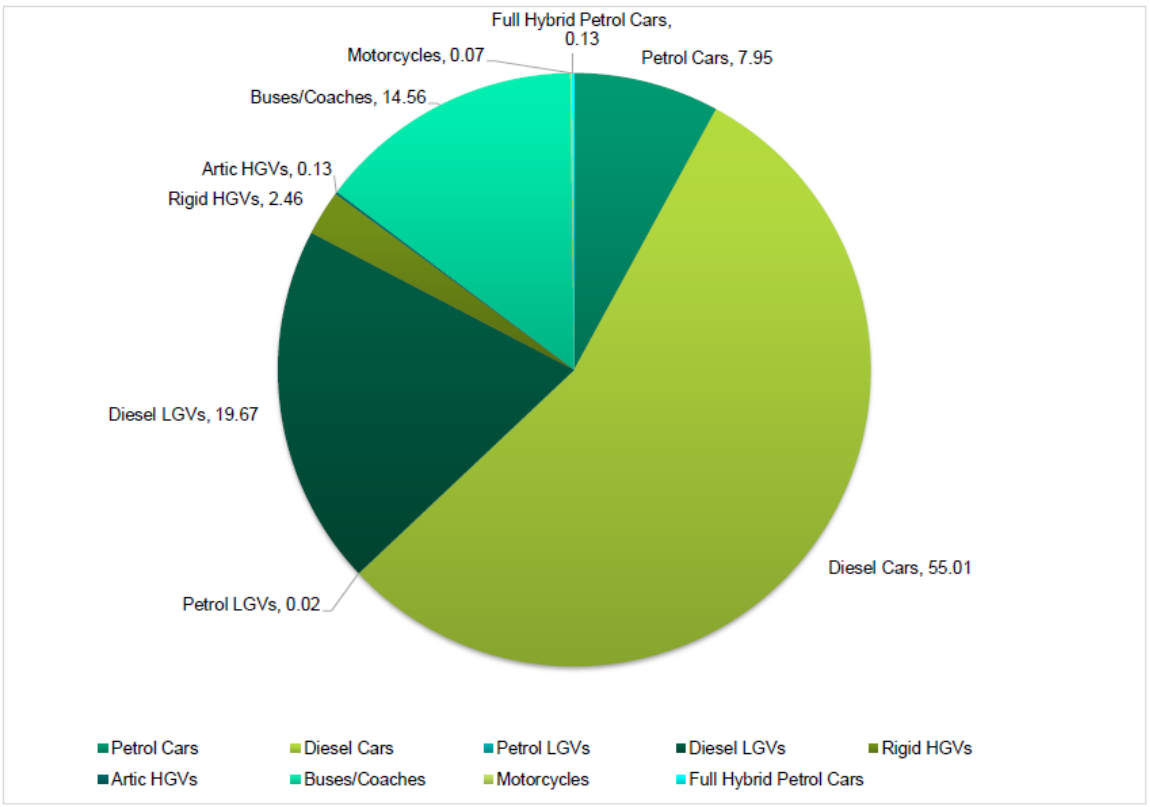
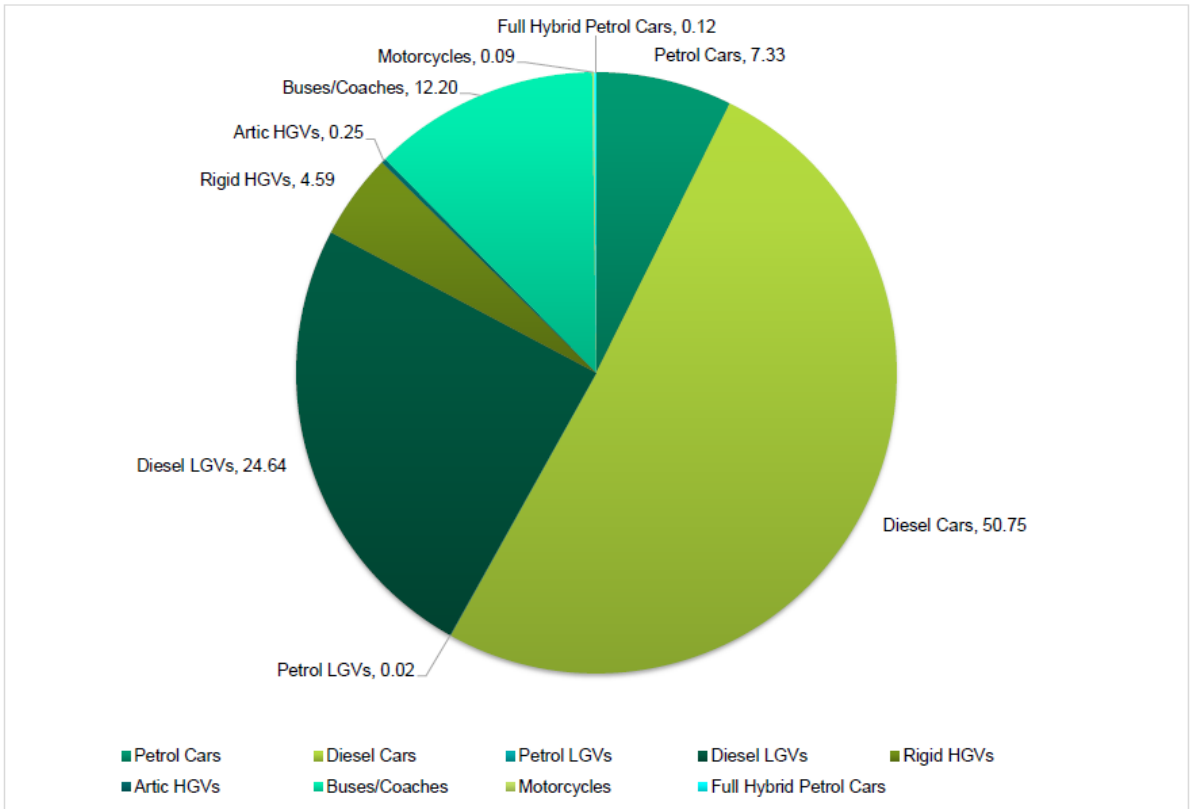


Figure 6 – Source Apportionment Malpas Road

Figure 4.6 - Road NOx Emissions, Source Apportionment Percentage - Malpas Road AQMA



3.10.1 Findings

- Diesel cars typically account for the greatest proportion of road NOx emissions. Within the six AQMAs, diesel cars account for between 40.5% and 55% of road NOx emissions. The range of measures considered within this AQAP not only cover things that will contribute towards mitigating the impacts from existing diesel cars but consider the ongoing fleet transformation towards cleaner and zero emission vehicles.

- Diesel LGVs are the second-largest contributor of road NOx emissions, accounting for between 19.7% and 33.1% of total road NOx emissions within the AQMAs.

- The source apportionment for Caerphilly Road indicates a high contribution of road NOx due to rigid HGVs relative to the other AQMAs. This is likely to be associated with accessibility of Junction 28 of the M4. In relation to HGVs there is the ECO Stars fleet accreditation scheme that aims to reduce fuel use and provide AQMA routing advice.

- The AQMAs at Chepstow Road/Caerleon Road, George Street and Malpas Road show larger contributions to total road NOx emissions from buses and coaches than for the other AQMAs. The transition of the local Newport bus fleet from ICE to 100% electric will benefit these AQMAs.

- In terms of NO2 concentrations, the local road user contribution to total monitored NO2 concentrations within the AQMAs range between 50% and 77.3%.

- Of the local road user contribution to NO2 concentrations, diesel cars and LGVs are the most significant sources, typically collectively accounting for more than 50% of the total monitored NO2.

- Local background contributions vary, with the lowest being 16.7% in Caerleon, and up to 43.4% in the Malpas Road AQMA. This would indicate a lower contribution of local road sources to the ambient concentration monitored in the Malpas Road AQMA, which may make NO2 concentration reductions through direct intervention harder to achieve.

3.11 Required Reduction in Emissions (based upon 2019 data)

This was looked at by AECOM during 2022 an AQAP scoping report (Air quality data & reports | Newport City Council) and determined in accordance with the methodology outlined within technical guidance provided (LAQM.TG(16) (Box 7.6:Calculated Reduction in Road NOx Emissions)) and the results are presented below for 2019 data in the absence of 2022 data at the time:

Caerleon AQMA

In the Caerleon AQMA, a reduction of **21.1 µg/m^3 (26%) in road NO$_x$** was required to comply with the annual mean NO_2 AQO (see Table). This was the NOx level which equated to **reducing 48.6 µg/m^3 N02 to 40 µg/m^3** based on 2019 data.

Table 4 : Required NOx Reduction for Caerleon AQMA

Parameter	Value
Monitoring Site	NCC26B
Maximum NO_2 Concentration in 2019 for AQMA (µg/m^3)	48.6
(X,Y)	(334500,190500)
Background NO_2 Concentrations for 1km x 1km grid square (µg/m^3)	11.0
Monitored Road NOx (µg/m^3)	81.1
Target Road NOx (µg/m^3)	60.0
NOx Reduction Required (µg/m^3)	21.1
NOx Reduction Required (%)	26.0

Malpas Road AQMA

In the Malpas AQMA, **a reduction of 2.3 µg/m^3 (5.3%) in road NOx** was required to comply with the annual mean NO_2 AQO (see table below). This was the NOx level which equated to **reducing 41 µg/m^3 N02 to 40 µg/m^3** based on 2019 data.

Table 5 : Required NOx Reduction for Malpas Road AQMA

Parameter	Value
Monitoring Site	NCC64
Maximum NO_2 Concentration in 2019 for AQMA (µg/m^3)	41.0
(X,Y)	(330500,189500)
Background NO_2 Concentrations for 1km x 1km grid square (µg/m^3)	20.5
Monitored Road NOx (µg/m^3)	42.9
Target Road NOx (µg/m^3)	40.6
NOx Reduction Required (µg/m^3)	2.3
NOx Reduction Required (%)	5.3

Chepstow Road/ Caerleon Road AQMA

In the Chepstow Road / Clarence Place / Caerleon Road AQMA, **a reduction of 19.5 µg/m^3 (28.0%) in road NOx** was required to comply with the annual mean NO_2 AQO, (see table below). This was the NOx level which equated to **reducing 48.1 µg/m^3 N02 to 40 µg/m^3** based on 2019 data.

Table 6 : Required NOx Reduction for Chepstow Road /Caerleon Road AQMA

Parameter	Value
Monitoring Site	NCC46B
Maximum NO_2 Concentration in 2019 for AQMA (µg/m^3)	48.1
(X,Y)	(332500,188500)
Background NO_2 Concentrations for 1km x 1km grid square (µg/m^3)	15.8
Monitored Road NOx (µg/m^3)	69.8
Target Road NOx (µg/m^3)	50.3
NOx Reduction Required (µg/m^3)	19.5
NOx Reduction Required (%)	28.0

Cefn Road AQMA

In the Cefn Road AQMA, a reduction of **6.4 µg/m^3 (10.0%) in road NOx** was required to comply with the annual mean NO_2 AQO (see table below)). This was the NOx level which equates to reducing **42.7 µg/m^3 N02 to 40 µg/m^3** based on 2019 data.

Table 7 : Required NOx Reduction for Cefn Road AQMA

Parameter	Value
Monitoring Site	NCC29C
Maximum NO_2 Concentration in 2019 for AQMA (µg/m^3)	42.7
(X,Y)	(327500,188500)
Background NO_2 Concentrations for 1km x 1km grid square (µg/m^3)	12.1
Monitored Road NOx (µg/m^3)	64.2
Target Road NOx (µg/m^3)	57.8
NOx Reduction Required (µg/m^3)	6.4
NOx Reduction Required (%)	10.0

Caerphilly Road AQMA

In the Caerphilly Road AQMA, a reduction of **2.4 µg/m^3 (8.9%) in road NOx was required** to comply with the annual mean NO_2 AQO (see table below). This was the NOx level which equated to **reducing 42.4 µg/m3 N02 to 40 µg/m3** based on 2019 data.

Table 8: Required NOx Reduction for Caerphilly Road AQMA

Parameter	Value
Monitoring Site	NCC48D
Maximum NO_2 Concentration in 2019 for AQMA (µg/m^3)	42.4
(X,Y)	(327500,186500)
Background NO_2 Concentrations for 1km x 1km grid square (µg/m^3)	11.7
Monitored Road NOx (µg/m^3)	64.3
Target Road NOx (µg/m^3)	58.6
NOx Reduction Required (µg/m^3)	5.7
NOx Reduction Required (%)	8.9

George Street AQMA

In the George Street AQMA, a **reduction of 2.6 µg/m^3 (4.9%) in road NOx is required** to comply with the annual mean NO_2 AQO (see Table below). This is the NOx level which equates to **reducing 41.1 µg/m3 N02 to 40 µg/m3**.

Table 9 : Required NOx Reduction for George Street AQMA

Parameter	Value
Monitoring Site	NCC51
Maximum NO_2 Concentration in 2019 for AQMA (µg/m^3)	41.1
(X,Y)	(331500,187500)
Background NO_2 Concentrations for 1km x 1km grid square (µg/m^3)	15.9
Monitored Road NOx (µg/m^3)	52.6
Target Road NOx (µg/m^3)	50.0
NOx Reduction Required (µg/m^3)	2.6
NOx Reduction Required (%)	4.9

Royal Oak Hill AQMA

Based on the NO_2 concentrations from 2019 a NO_x reduction is not required with concentrations less than 40 µg/m^3, however concentrations will still need to achieve 10% below the AQO before sustained compliance and revocation can be considered.

Glasllwch AQMA

As previously mentioned above with the Royal Oak Hill AQMA, a NO_x reduction is not required with concentrations less than40 µg/m^3, however considering the fluctuating concentrations, the AQMA would still benefit from measures to reduce concentrations to an as part of maintaining sustained compliance where this occurs. This AQMA will be identified for revocation where sustained compliance is observed.

St Julian’s AQMA

No exceedances of the annual mean NO_2 AQO were recorded in the vicinity of the AQMA, and as such, no required NO_x reductions are required to be calculated. This AQMA was previously identified for revocation in view of sustained compliance.

High Cross AQMA

No exceedances of the annual mean NO_2 AQO were recorded in the vicinity of the AQMA, and as such, no required NO_x reductions are required to be calculated. This AQMA will be identified for revocation where sustained compliance is observed.

Shaftesbury AQMA

No exceedances of the annual mean NO_2 AQO were recorded in the vicinity of the AQMA, and as such, no required NO_x reductions are required to be calculated. This AQMA will be identified for revocation where sustained compliance is observed.

3.12 Dispersion Modelling

A range of measures that could be applied to roads in AQMA localities have been identified through officer work and the contributions of air quality groups to the measure's discussion. The choice of measures is also based upon what could reasonably be modelled given other highways projects such as implementation of Burns Report in areas like Old Green, which is in continuity with the AQMAs of Malpas Road, Chepstow Road and George Street.

The table below shows the range of measures available for modelling within each AQMA.

Measures potentially applicable in Caerleon and modelling has looked at the impact of increased EV uptake upon levels experienced within the AQMA, as well as the impact of electric bus fleets going from 50% to 100% service provision. An engineered street canyon solution was looked at in the form of the RoadVent system however the physical constraints of the street canyon locality and a lack of research funding have meant this option is not currently being considered and modelling not undertaken.

Table 10 – Modelled Measures in this AQAP

Measure	AQMA	Caerleon	Caerphilly Road	Cefn Road	Chepstow Road/Caerleon Road	George Street	Malpas Road
Emissions from Transport		+ 5% increase in EV composition of fleet + 100% eBus services impact + combined impact of all measures.	+ 5% increase in EV composition of fleet 100% eBus services impact + 20mph impact +Green Barrier at 85 Caerphilly Road + combined impact of all measures.	+ 5% increase in EV composition of fleet + 100% eBus services impact + 20mph impact + combined impact of all measures.	5% increase in EV composition of fleet + 100% eBus services impact + combined impact of all measures.	+ 5% increase in EV composition of fleet + 100% eBus services impact + 20mph impact + combined impact of all measures.	5% increase in EV composition of fleet + 100% eBus services impact + 20mph impact + combined impact of all measures.

Modelling for the Caerphilly Road AQMA has included looking at the potential benefits of a green barrier on the AQO for NO2 in the 85 Caerphilly Road locality.

Dispersion Modelling

Modelled scenarios for each of the six AQMAs were undertaken by AECOM during July to October 2023. Modelling measures on their own and together should provide some indicative idea of the sort of level of emissions reduction that could be achieved/is currently taking place. Unfortunately not all measures are capable of modelling so Newport City Council is reliant upon research and development information that is available for other measures in terms of their efficacy and potential application.

Cost benefit considerations for all measures including those modelled are also provided in section 5.

Modelled measure scenarios were categorised as shown in Table 11 below.

Table 11 - Measures to be modelled for each AQMA

No.	Caerleon High Street	Caerphilly Road	Cefn Road	Chepstow Road/Caerleon Road	George Street	Malpas Road
MS1	Changing flow and number of vehicles (assumed to be a 5% upgrade to EV).					
MS2	100% eBus services impact.					
MS3	-	20mph impact	20mph impact	-	20mph impact	20mph impact
MS4	-	Green barrier	-	-	-	-
MS5	Combined scenario (includes measures 1&2 above)	Combined scenario (includes measures 1,2,3 & 4 above)	Combined scenario (includes measures 1,2 & 3 above)	Combined scenario (includes measures 1,2 and 4 above)	Combined scenario (includes measures 1,2 & 3 above)	Combined scenario (includes measures 1,2 and 3 above)
MS6	-	Combined scenario (excluding 20mph zones)	Combined scenario (excluding 20mph zones)	-	Combined scenario (excluding 20mph zones)	Combined scenario (excluding 20mph zones)

The scope of the modelling was as follows:

- Selection of potentially sensitive receptors for inclusion in the assessment.
- Quantitative assessment of potential impacts from specified AQAP measures as a result of changes in road traffic emissions.
- Interpolation of years not explicitly assessed; and
- Calculation of road NOx reductions required to achieve compliance in each AQMA.

Dispersion modelling was carried out using the ADMS-Roads 5 model to predict changes in nitrogen dioxide (NO2) concentrations at selected existing sensitive receptors, as all six AQMAs are declared for exceedances of the annual mean Air Quality Strategy (AQS) objective for this pollutant. Modelling was carried out for a base year 2022 and a future base year of 2024. 2019 was also modelled as a ‘worst case’ baseline.

Dispersion modelling was then undertaken to determine the potential impact of selected measures to improve air quality in each AQMA. This is in keeping with paragraph 2.85 of LAQM.TG(22) , which states an AQAP should contain quantification of the emission impacts of measures as a minimum. Several implementable measures were chosen that would be relevant to each AQMA area.

Traffic Data was sourced from Automatic Number Plate Recognition (ANPR) camera surveys undertaken by AECOM in 2022. Department for Transport (DfT) TEMPro factors provided by AECOM traffic consultants were used to factor this data to 2019, 2022 and 2024 as relevant. At locations for which this data was unavailable, appropriate DfT traffic count data was chosen.

Traffic data was processed into a 24-hour Average Annual Daily Traffic (AADT) format for the following scenarios:

- 2019 Baseline;
- 2022 Baseline (used in model verification); and
- 2024 Baseline.

Measure Scenarios

To model the chosen measures, the traffic data and model input parameters were altered to reflect the proposed changes at each AQMA based on professional judgement of feasible intervention levels. Table 12 summaries the changes made to the traffic data for each measure scenario.

Table 11 – Measure Scenario Data Changes

No.	Caerleon High Street	Caerphilly Road	Cefn Road	Chepstow Road	George Street	Malpas Road
MS1	Altered fleet composition for all roads in EFT input. 5% was removed proportionally from %Petrol Car and % Diesel Car and added to % Battery EV Cars					
MS2	Altered fleet composition for all roads in EFT input. % Bus and Coach was removed and added to % FCEV Bus (Fuel Cell Electric Vehicle buses was chosen as the most appropriate proxy for electric buses)					
MS3	-	Speed altered to 20mph (32.2 kph) for all roads	Speed altered to 20mph (32.2 kph) for all roads	-	Speed altered to 20mph (32.2 kph) for all roads	Speed altered to 20mph (32.2 kph) for all roads
MS4	-	Green barrier modelled at Caerphilly Road using an ADMS nbr file (No change to traffic flow)	-	-	-	-
MS5	Combined Scenario (MS1, MS2)	Combined Scenario (MS1, MS2, MS3, MS4)	Combined Scenario (MS1, MS2, MS3)	Combined Scenario (MS1, MS2)	Combined Scenario (MS1, MS2, MS3)	Combined Scenario (MS1, MS2, MS3)
MS6	-	Combined Scenario (MS1, MS2, MS4)	Combined Scenario (MS1, MS2)	-	Combined Scenario (MS1, MS2)	Combined Scenario (MS1, MS2)

Measure scenario 1 (**MS1**) models the expected upgrade to Electric Vehicles (EV) from petrol and diesel cars. Measure Scenario 2 (**MS2**) models a change in the bus fleet to a 100% eBus service. Measure Scenario 3 (**MS3**) models a proposed 20mph speed limit on all roads in the AQMA to which this is applicable. Measure Scenario 4 (**MS4**) individually models the construction of a green barrier at Caerphilly Road. Measure Scenario 5 (**MS5**) is a combined scenario representing all changes from scenarios MS1-MS4. Measure Scenario 6 (**MS6**) is a combined scenario representing all changes from MS5 except the 20mph speed limit, to show maximum levels of reduction thought feasible.

A street canyon was also modelled in Caerleon High Street AQMA, at Rd_31, Rd_34 and Rd_39, on the corner of Castle Street and High Street. Receptors that were chosen within each AQMA are shown in Figure 2 to Figure 8 in the full modelling report which can be found at the following link UPLOAD MODELLING APPENDIX TO WEBSITE. The full report also includes details of verification work and model performance which has not been reproduced here.

To determine the compliance of an AQMA with air quality standards for NO2, a value of 36 µg/m3 has been referenced, as this is the criteria that would be used when revoking an AQMA. The definition of compliance is set out in the technical guidance as concentrations below 10% of the objective. Therefore, this value was used when analysing model results.

Limitations

As with any dispersion modelling study, there are inherent limitations and assumptions of which the reader should be aware when interpreting the results. The key limitations that apply to these results are as follows:

- The traffic data are limited to the roads surveyed, or for which there were DfT count points available. This meant in some cases, the full road network within an AQMA could not be modelled with count data.
- The projections of traffic data are inherently limited by COVID-19, which affected travel behaviour during the periods assessed.
- The 20mph scenario (MS3) would ideally be modelled with more detailed traffic modelling (paramics or similar) to capture the alterations in driving behaviour associated with this measure. The methodology applied suggests detrimental impacts from a reduced speed of traffic speed, where in reality it could likely lead to traffic calming, a smoother drive profile, and therefore less emissions. These impacts are notwithstanding the overriding road safety benefits of imposing 20mph limits.
- Data for all the measures scenarios would ideally be derived from traffic modelling to predict impacts such as wider traffic diversions. As a model was not available for this study, assumptions applied have therefore been based on professional judgement of what could be achievable in air quality terms with maximum implementation, rather than what is deemed to be likely in a real world setting.

Model Results

Caerleon High Street AQMA

The results of the Caerleon High Street model are shown in Table 13 and Table 14. The results indicate there are small decreases in concentrations from the 2022 and 2024 base NO_2 concentrations likely upon implementation of the measures. All modelled concentrations are well below the AQS objective value of 40 µg/m^3 as well as below 36 µg/m^3, which is 10% below the AQO objective.

For 2022 decreases of between -0.1 µg/m^3 and -0.8 µg/m^3 are predicted at receptors for the MS1 scenario. Decreases of between -0.1 µg/m^3 and -1.7 µg/m^3 can be seen in MS2. The results of MS5 show decreases of between -0.2 µg/m^3 and -1.8 µg/m^3, indicating the combination of measures leads to a greater decrease.

For 2024, decreases of between -0.1 µg/m^3 and -0.7 µg/m^3 are predicted at receptors relative to the 2024 baseline concentration in MS1. Decreases of between -0.1 µg/m^3 and -0.7 µg/m^3 are also shown for MS2. The greatest decrease is also shown at R9 for both scenarios, located on the High Street. MS5 shows decreases of -0.1 µg/m^3 and -1.5 µg/m^3, indicating the combination of measures leads to greater decreases in predicted concentration than each individual measure.

Table 13 – Caerleon High Street AQMA Results (NO_2, µg/m^3), 2019 and 2022

Receptor	2019 Base	2022 Base	2022 MS1 (5% EV)	2022 MS2 (100% eBus)	2022 MS5 (Combined)
R1	16.6	14.6	14.4	14.2	14.1
R2	31.2	27.4	26.8	26.0	26.0
R3	14.6	12.6	12.4	12.3	12.2
R4	22.3	19.4	19.1	18.6	18.5
R5	16.4	14.3	14.1	13.9	13.8
R6	16.0	13.8	13.7	13.5	13.4
R7	12.3	10.7	10.7	10.6	10.6
R8	13.4	11.7	11.6	11.5	11.4
R9	25.5	30.7	29.9	28.9	28.9
R10	32.9	13.6	13.4	13.2	13.2
R11	16.2	14.1	13.9	13.7	13.7
R12	15.3	13.4	13.2	13.1	13.0
R13	18.0	15.5	15.2	15.0	14.9
R14	14.8	12.9	12.8	12.7	12.6
R15	14.8	12.9	12.8	12.6	12.6
R16	19.7	17.1	16.8	16.5	16.4

R17	16.0	13.8	13.6	13.4	13.3
R18	15.7	13.6	13.4	13.2	13.2
R19	14.5	12.6	12.4	12.3	12.2
R20	16.0	13.9	13.7	13.5	13.5
R21	17.4	15.0	14.8	14.5	14.5
R22	15.3	13.3	13.2	13.0	12.9
R23	17.8	15.4	15.2	14.9	14.9
R24	13.1	11.4	11.4	11.3	11.2
R25	24.5	20.9	20.5	19.9	19.8

Table 14 - Caerleon High Street AQMA Results (NO_2, µg/m^3), 2024

Receptor	2024 Base	2024 MS1 (5% EV)	2024 MS2 (100% Ebus)	2024 MS5 (Combined)
R1	13.4	13.3	13.3	13.0
R2	25.3	24.7	24.7	24.1
R3	11.6	11.5	11.5	11.3
R4	17.8	17.5	17.5	17.1
R5	13.1	13.0	13.0	12.8
R6	12.7	12.6	12.6	12.4
R7	9.9	9.9	9.9	9.8
R8	10.8	10.7	10.7	10.6
R9	28.2	27.5	27.4	26.7
R10	12.5	12.4	12.4	12.2
R11	13.0	12.8	12.8	12.6
R12	12.3	12.2	12.2	12.0
R13	14.2	14.0	14.0	13.7
R14	11.9	11.8	11.8	11.6
R15	11.9	11.8	11.8	11.6
R16	15.7	15.5	15.4	15.1
R17	12.7	12.6	12.6	12.4
R18	12.6	12.4	12.4	12.2
R19	11.6	11.5	11.5	11.3
R20	12.8	12.6	12.6	12.4
R21	13.8	13.6	13.6	13.3
R22	12.3	12.1	12.1	11.9
R23	14.1	14.0	13.9	13.7
R24	10.5	10.5	10.5	10.3
R25	19.2	18.8	18.8	18.3

Caerphilly Road AQMA

The results of the Caerphilly Road AQMA model results are shown in Table 14 and Table 15. The results indicate that within the modelled scenarios there are some decreases and some increases in concentrations from the 2022 and 2024 base NO_2 concentrations likely upon implementation of the measures, dependent on scenario. Concentrations above 36 µg/m^3 are modelled at two receptors in 2019, R60 and R64. R60 is located on 79 Caerphilly Road and R64 is located on 7 Caerphilly Road. For 2022 and 2024, all modelled concentrations are well below the AQS objective value of 40 µg/m^3 and 36 µg/m^3.

For 2022, the results indicated a decrease of between -0.1 µg/m^3 and -0.6 µg/m^3 in MS1. Decreases of between -0.2 µg/m^3 and -1.1 µg/m^3 for MS2. MS3 shows small increases in

concentrations, between 0.4 µg/m^3 and 4.2 µg/m^3. MS4 shows decreases of between -0.1 µg/m^3 and -5.2 µg/m^3. For MS5, the greatest decrease is -0.9 µg/m^3 (R60) and the greatest increase is 2.8 µg/m^3 (R57). For MS6, decreases of between -0.3 µg/m^3 and -1.2 µg/m^3 are shown.

For 2024, the results indicated a decrease of between -0.1 µg/m^3 and -0.5 µg/m^3 in MS1. Decreases of between -0.03 µg/m^3 and -0.3 µg/m^3 are predicted in MS2. MS3 shows small increases in concentrations, between 0.3 µg/m^3 (R48) and 3.5 µg/m^3 (R55). R55 is located on the A467, which is a large dual carriageway and the speed for this link was modelled at 50 mph. This indicates that slowing the traffic to this degree on a road link of this type would negatively impact NO_2 concentration and could lead to increases. MS4 shows decreases of between -0.1 µg/m^3 and -4.5 µg/m^3. The greatest decrease is seen at R60, the receptor that is placed directly behind the Green Barrier on Caerphilly Road. By contrast, R48, the receptor on the opposite side of the road, and without a barrier shows a smaller decrease of -0.1 µg/m^3. MS5 shows a mixture of increases and decreases. The largest increase is 2.4 µg/m^3 (R57). The largest decrease is -4.8 µg/m^3 and also shown at R60, behind the green barrier. This is confirmed by MS6, which does not include the 20mph limit and shows decreases of between -0.2 µg/m^3 and -0.9 µg/m^3.

Table 15 – Caerphilly Road AQMA Results (NO_2, µg/m^3), 2019 and 2022

Receptor	2019 Base	2022 Base	2022 MS1 (5% EV)	2022 MS2 (100% Ebus)	2022 MS3 (20mph limit)	2022 MS4 (Green Barrier)	2022 MS5 (Combined)	2022 MS6 (Combined)
R42	13.8	11.4	11.3	11.2	11.8	11.2	11.5	11.1
R43	21.3	15.9	15.7	15.5	17.2	15.8	16.6	15.4
R44	25.1	18.3	18.0	17.7	20.0	18.2	19.2	17.6
R45	23.1	17.0	16.7	16.4	18.4	16.8	17.7	16.3
R46	25.3	18.5	18.1	17.9	20.2	18.3	19.4	17.8
R48	25.3	18.8	18.5	18.3	19.2	18.7	18.5	18.2
R49	17.0	14.4	14.3	14.1	15.3	14.3	14.8	14.0
R50	22.5	18.0	17.8	17.6	19.2	17.9	18.6	17.5
R51	26.8	20.8	20.5	20.2	22.5	20.6	21.7	20.1
R52	26.4	20.6	20.2	20.0	21.9	20.4	21.1	19.8
R53	15.0	12.9	12.8	12.7	13.5	12.7	13.1	12.5
R54	24.1	18.6	18.3	18.0	20.4	18.4	19.5	17.9
R55	31.6	26.0	25.6	25.2	30.2	25.8	28.8	25.0
R56	16.7	15.1	15.0	14.9	16.1	14.9	15.5	14.7
R57	31.7	26.2	25.7	25.4	30.4	26.0	29.0	25.2
R58	19.5	16.9	16.6	16.5	18.8	16.7	18.1	16.3
R59	27.7	24.1	23.6	23.2	28.1	23.9	26.8	23.1
R60	*39.3*	27.9	27.3	26.8	28.3	22.7	27.1	26.7
R61	35.3	25.4	24.9	24.5	28.3	25.3	27.0	24.4
R62	25.4	19.9	19.6	19.4	21.3	19.7	20.4	19.2
R63	24.7	20.5	20.1	19.9	23.4	20.3	22.3	19.7
R64	*37.0*	27.2	26.7	26.2	29.1	27.0	27.8	26.1

*Note: Values in bold exceed the AQS objective value.

*Note: Values in *italic* are above the compliance value of 36 µg/m^3

Table 16 – Caerphilly Road AQMA Results (NO_2, µg/m^3), 2024

Receptor	2024 Base	2024 MS1 (5% EV)	2024 MS2 (100% Ebus)	2024 MS3 (20mph limit)	2024 MS4 (Green Barrier)	2024 MS5 (Combined)	2024 MS6 (Combined)
R42	10.3	10.3	10.3	10.7	10.2	10.5	10.1
R43	14.3	14.0	14.2	15.4	14.1	14.8	13.8
R44	16.3	16.0	16.2	17.7	16.2	17.1	15.8
R45	15.2	14.9	15.0	16.4	15.0	15.8	14.7
R46	16.4	16.1	16.3	17.9	16.3	17.3	15.9
R48	16.7	16.4	16.6	17.0	16.6	16.5	16.2
R49	13.0	12.8	12.9	13.6	12.8	13.2	12.6
R50	16.1	15.9	16.0	17.1	16.0	16.6	15.7
R51	18.5	18.2	18.4	20.0	18.4	19.3	18.0
R52	18.3	18.0	18.2	19.5	18.1	18.8	17.7
R53	11.6	11.5	11.6	12.1	11.5	11.8	11.3
R54	16.5	16.3	16.4	18.0	16.4	17.4	16.0
R55	23.2	22.7	23.0	26.6	22.9	25.5	22.4
R56	13.6	13.5	13.6	14.4	13.4	14.0	13.3
R57	23.3	22.8	23.1	26.8	23.1	25.7	22.5
R58	15.1	14.9	15.0	16.7	14.9	16.1	14.7
R59	21.3	20.9	21.2	24.7	21.2	23.7	20.6
R60	24.6	24.0	24.3	24.9	20.1	19.8	23.6
R61	22.5	22.0	22.3	24.9	22.3	23.9	21.7
R62	17.7	17.5	17.6	18.9	17.6	18.2	17.2
R63	18.2	17.9	18.1	20.6	18.0	19.8	17.6
R64	24.1	23.6	23.8	25.6	23.9	24.6	23.2

Cefn Road

The results indicate there some decreases and some increases in concentrations from the 2022 and 2024 base NO2 concentrations upon implementation of the measures, dependent on scenario. Concentrations above 36 µg/m3 are modelled at two receptors in 2019, R70 and R71. R70 is located at 49 Cefn Road and R71 is located at 9 Cefn Road. For 2022 and 2024, all modelled concentrations are below the AQS objective value of 40 µg/m3 and 36 µg/m3.

For 2022, decreases of between -0.1 µg/m3 and -2.8 µg/m3 are seen in MS1. MS2 shows decreases of between -0.2 µg/m3 and -4.1 µg/m3. MS3 shows increases and decreases. The greatest increase is 1.4 µg/m3 (R73) and the greatest decrease is -1.6 µg/m3 (R70). MS5 shows both increases and decreases at receptors with the greatest increase being 0.2 µg/m3 and the greatest decrease being -4.5 µg/m3. MS6 shows decreases of between -0.6 µg/m3 and -4.0 µg/m3.

For 2024, decreases of between -0.1 µg/m3 and -2.6 µg/m3 are seen in MS1. MS2 shows decreases of between -0.1 µg/m3 and -2.5 µg/m3. MS3 shows increases and decreases. The greatest increase is 1.2 µg/m3 (R73) and the greatest decrease is - 2.6 µg/m3 (R70). R73 is on High Cross Road, the average speed modelled on this link in the baseline was 30mph. R70 is located on Cefn Road. MS5 shows decreases and increases, with the greatest being 0.3 µg/m3. The greatest decrease is at R70 (-3.6 µg/m3). MS6 shows decreases of between -0.4 µg/m3 and -4.0 µg/m3. This indicates that the exclusion of the 20mph limit removed any increases in concentrations. The results of the Cefn Road AQMA model results are shown in Table17 and Table 18.

Table 17 – Cefn Road AQMA Results (NO_2, µg/m^3), 2019 and 2022

Receptor	2019 Base	2022 Base	2022 MS1 (5% EV)	2022 MS2 (100% Ebus)	2022 MS3 (20mph limit)	2022 MS5 (Combined)	2022 MS6 (Combined exc. MS3)
R65	18.9	16.1	16.0	15.9	16.6	16.0	15.7
R66	23.0	19.6	19.4	19.2	20.5	19.6	18.9
R67	21.9	18.7	18.5	18.2	19.6	18.8	18.0
R68	17.9	15.7	15.5	15.2	16.6	15.8	15.1
R69	14.0	12.2	12.2	12.1	12.3	12.0	11.9
R70	*38.0*	33.3	32.5	31.2	33.8	30.8	30.5
R71	*39.4*	34.5	33.7	32.4	35.1	31.9	31.5
R73	25.3	22.1	21.6	21.0	23.5	22.1	20.9
R74	23.8	20.4	20.2	19.8	21.6	20.6	19.6

*Note: Values in *italic* are above the compliance value of 36 µg/m^3

Table 18 – Cefn Road AQMA Results (NO_2, µg/m^3), 2024

Receptor	2024 Base	2024 MS1 (5% EV)	2024 MS2 (100% Ebus)	2024 MS3 (20mph limit)	2024 MS5 (Combined)	2024 MS6 (Combined exc. MS3)
R65	14.5	14.4	14.4	14.9	14.4	14.1
R66	17.6	17.4	17.5	18.4	17.7	17.1
R67	16.8	16.6	16.6	17.5	16.9	16.3
R68	14.3	14.1	14.2	15.1	14.5	13.8
R69	11.2	11.1	11.1	11.3	11.0	11.0
R70	30.1	29.3	29.5	30.5	28.3	28.0
R71	31.2	30.4	30.5	31.7	29.3	28.9
R73	20.0	19.6	19.7	21.2	20.2	19.2
R74	18.3	18.1	18.2	19.4	18.6	17.7

Chepstow Road/Caerleon Road AQMA

The results of the Chepstow Road AQMA model results are shown in 19 and 20.

The results indicate there some decreases and some increases in concentrations from the 2022 and 2024 base NO_2 concentrations upon implementation of the measures, dependent on scenario. All modelled concentrations are well below the AQS objective value of 40 µg/m^3 and 36 µg/m^3.

For 2022, decreases of between -0.1 µg/m^3 and -0.5 µg/m^3 are shown in MS1. For MS2, there are decreases of between -0.2 µg/m^3 to -1.6 µg/m^3. MS5 shows decreases of between -0.4 µg/m^3 and -1.9 µg/m^3.

For 2024, decreases of between -0.1 µg/m^3 and -0.5 µg/m^3 are shown in the MS1 scenario. For MS2 relative decreases of between -0.1 µg/m^3 and -0.8 µg/m^3 are shown. MS5 shows decreases of between -0.4 µg/m^3 and -1.6 µg/m^3 (R31). This indicates that the measures in combination result in a greater decrease in concentration than any single measure.

Table 19 – Chepstow Road/Caerleon Road AQMA Results (NO_2, µg/m^3), 2019 and 2022

Receptor	2019 Base	2022 Base	2022 MS1 (5% EV)	2022 MS2 (100% Ebus)	2022 MS5 (Combined)
R26	25.1	23.9	23.6	22.7	22.5
R27	26.7	25.0	24.6	23.6	23.4
R28	26.0	24.3	24.0	23.1	22.9
R29	18.3	17.3	17.2	17.1	16.7
R30	25.0	23.4	23.1	22.4	22.1
R31	29.9	28.4	27.9	26.8	26.5
R32	18.6	17.6	17.5	17.3	17.1
R33	23.2	22.1	21.9	21.3	21.1
R34	25.9	24.5	24.2	23.4	23.2
R35	25.9	24.2	23.9	23.2	23.0
R36	22.6	21.6	21.4	20.8	20.6
R37	24.7	21.6	21.4	20.8	20.6
R38	26.9	23.6	23.3	22.5	22.3
R39	25.6	24.0	23.7	22.9	22.6
R40	23.9	22.9	22.6	21.8	21.6
R41	26.1	24.5	24.1	23.2	22.9

Table 20 – Chepstow Road/Caerleon Road AQMA Results (NO_2, µg/m^3), 2024

Receptor	2024 Base	2024 MS1 (5% EV)	2024 MS2 (100% Ebus)	2024 MS5 (Combined)
R26	22.8	22.4	22.0	21.5
R27	23.9	23.5	23.1	22.5
R28	23.2	22.9	22.5	22.0
R29	16.0	16.0	15.9	15.5
R30	22.3	22.0	21.8	21.1
R31	27.4	26.9	26.6	25.8
R32	16.3	16.2	16.2	15.9
R33	21.0	20.7	20.6	20.1
R34	23.5	23.1	22.9	22.4
R35	23.2	22.8	22.6	22.1
R36	20.5	20.2	20.1	19.6
R37	20.2	20.0	19.7	19.4
R38	22.3	21.9	21.6	21.2
R39	22.9	22.6	22.3	21.7
R40	21.7	21.4	21.0	20.41
R41	23.3	23.0	22.6	22.0

George Street AQMA

The results of the George Street AQMA model results are shown in Table 21 and Table 22.

The results indicate there are some decreases and some increases in concentrations from the 2022 and 2024 base NO_2 concentrations upon implementation of the measures, dependent on scenario.

All modelled concentrations are well below the AQS objective value of 40 µg/m^3. Modelled concentrations are above 36 µg/m^3 at R79, in the 2019 baseline, and in scenario MS3 in 2022 and MS3 in 2024. This is also the case at R81 for MS3 in 2022. R79 is located at 64 George Street and R81 is located at 51 George Street.

For 2022, there are predicted decreases of between -0.2 µg/m^3 and -0.8 µg/m^3 in MS1. For MS2, decreases are shown between -0.6 µg/m^3 to -3.0 µg/m^3. In MS3, increases of between 0.7 µg/m^3 and 3.9 µg/m^3 are predicted. For MS5, only small decreases are predicted, between -0.3 µg/m^3 and -0.7 µg/m^3. For MS6, decreases at receptors are predicted between -0.9 µg/m^3 and -3.4 µg/m^3.

For 2024, decreases of between -0.2 µg/m^3 and -0.8 µg/m^3 are shown in MS1. For MS2, decreases between -0.3 µg/m^3 and -1.6 µg/m^3 are predicted. Increases are shown at receptors for the MS3 scenario, between 0.7 µg/m^3 to 3.9 µg/m^3 which would be attributed to the prevailing 30mph/40mph speeds being reduced on what is a very busy section of arterial

road. Like previous AQMAs, MS5 results show both increases and decreases. The largest increase is 0.3 µg/m^3 (R79) and the largest decrease is -0.5 µg/m^3 (R82 and R83). Decreases are predicted at receptors for MS6, between -0.8 µg/m^3 (R85) and -4.6 µg/m^3 (R79). The greatest decreases are shown for MS6, the combination of measures excluding the 20mph impacts.

Table 21 – George Street AQMA Results (NO_2, µg/m^3), 2019 and 2022

Receptor	2019 Base	2022 Base	2022 MS1 (5% EV)	2022 MS2 (100% Ebus)	2022 MS3 (20mph limit)	2022 MS5 (Combined)	2022 MS6 (Combined excl. MS3)
R75	28.4	26.4	25.9	24.6	28.8	26.1	24.3
R76	22.8	21.3	21.0	20.2	22.7	21.0	20.0
R77	20.0	18.6	18.4	17.9	19.5	18.2	17.6
R78	30.6	28.6	28.0	26.4	31.3	28.2	26.1
R79	*37.7*	35.2	34.4	32.2	*39.2*	34.9	31.9
R81	35.1	32.6	31.9	30.0	*36.1*	32.3	29.6
R82	24.6	23.2	22.8	21.8	24.9	22.5	21.2
R83	23.1	20.9	20.6	19.7	22.5	20.2	19.1
R84	30.9	29.3	28.7	27.0	32.1	28.8	26.7
R85	19.1	17.7	17.5	17.1	18.4	17.2	16.8

*Note: Values in *italic* are above the compliance value of 36 µg/m^3

Table 22 – George Street AQMA Results (NO_2, µg/m^3), 2024

Receptor	2024 Base	2024 MS1 (5% EV)	2024 MS2 (100% Ebus)	2024 MS3 (20mph limit)	2024 MS5 (Combined)	2024 MS6 (Combined excl. MS3)
R75	25.7	25.2	24.7	28.1	25.8	24.0
R76	20.6	20.2	19.9	21.9	20.4	19.4
R77	17.7	17.5	17.3	18.6	17.5	16.9
R78	28.0	27.4	26.8	30.7	28.0	25.3
R79	34.7	33.9	33.1	*38.6*	35.0	30.1
R81	32.1	31.4	30.6	35.5	32.3	28.5
R82	22.4	22.1	21.7	24.1	22.0	20.7
R83	20.3	20.0	19.6	21.9	19.9	18.7
R84	28.7	28.0	27.4	31.5	28.7	25.6
R85	16.8	16.6	16.5	17.5	16.5	16.0

*Note: Values in *italic* are above the compliance value of 36 µg/m^3

Malpas Road AQMA

The results of the Malpas Road AQMA model results are shown in Table 23 and Table 24.

The results indicate there are some decreases and some increases in concentrations from the 2022 and 2024 base NO_2 concentrations upon implementation of the measures, dependent on scenario. All modelled concentrations are well below the AQS objective value of 40 µg/m^3 and 36 µg/m^3

For 2022, there are decreases in concentration between -0.1 µg/m^3 and -0.5 µg/m^3 in MS1. For MS2, decreases are shown between -0.2 µg/m^3 to -1.9 µg/m^3. In MS3, increases of between 0.4 µg/m^3 and 2.5 µg/m^3 are predicted. For MS5, both increases and decreases are estimated. The largest increase is 0.4 µg/m^3 (R97) and the largest decrease is -0.3 µg/m^3 (R86). For MS6, decreases at receptors are predicted between -0.4 µg/m^3 and -2.2 µg/m^3.

For 2024, decreases of between -0.1 µg/m^3 and -0.5 µg/m^3 are shown in MS1. For MS2, decreases between -0.1 µg/m^3 and -1.0 µg/m^3 are predicted at receptors. As in other AQMAs, predicted concentrations at receptors increase relative to the baseline as a result of the MS3 scenario. Increases of between 0.4 µg/m^3 (R87) and 2.5 µg/m^3 (R86) are shown. The average speed modelled for this road link is 30mph in the baseline. The MS5 combined scenario resulted in both decreases and increases predicted at receptors. The greatest increase shown is 0.5 µg/m^3 and the greatest decrease predicted is -0.1 µg/m^3. For MS6, decreases of between -0.3 µg/m^3 and -1.8 µg/m^3 are shown at receptors. This indicates that the combined scenario without the lowered speed limit results in greater predicted decreases in concentrations, as with previous AQMAs.

Table 23 – Malpas Road AQMA Results (NO_2, µg/m^3), 2019 and 2022

Receptor	2019 Base	2022 Base	2022 MS1 (5% EV)	2022 MS2 (100% Ebus)	2022 MS3 (20mph limit)	2022 MS5 (Combined)	2022 MS6 (Combined exc. MS3)
R86	28.8	27.0	26.5	25.1	29.5	26.7	24.8
R87	16.8	14.7	14.6	14.5	15.1	14.5	14.2
R88	19.6	18.3	18.2	18.0	19.0	18.2	17.7
R89	20.1	17.8	17.7	17.4	18.6	17.8	17.3
R90	19.3	17.2	17.1	16.9	17.8	17.2	16.8
R91	26.0	23.8	23.6	23.0	25.4	24.1	22.9
R92	33.1	30.0	29.5	28.4	32.5	30.3	28.3
R93	32.0	28.7	28.2	27.2	30.9	28.9	27.1
R94	28.3	25.7	25.4	24.6	27.3	25.8	24.5
R95	28.0	25.3	25.0	24.2	26.8	25.4	24.1
R96	22.0	20.4	20.3	20.0	21.2	20.5	19.9
R97	27.0	24.5	24.3	23.6	26.4	25.0	23.5

Table 24 – Malpas Road AQMA Results (NO_2, µg/m^3), 2024

Receptor	2024 Base	2024 MS1	2024 MS2 (100% Ebus)	2024 MS3 (20mph limit)	2024 MS5 (Combined)	2024 MS6 (Combined exc. MS3)
R86	26.3	25.8	25.3	28.8	26.4	24.5
R87	13.5	13.5	13.5	13.9	13.4	13.1
R88	16.8	16.7	16.6	17.4	16.8	16.3
R89	16.2	16.1	16.0	16.8	16.2	15.7
R90	15.6	15.5	15.5	16.1	15.7	15.3
R91	21.5	21.2	21.1	22.9	21.9	20.7
R92	27.1	26.7	26.4	29.4	27.6	25.8
R93	25.9	25.5	25.2	27.9	26.3	24.7
R94	23.2	22.9	22.7	24.6	23.5	22.3
R95	22.8	22.5	22.3	24.2	23.0	21.9
R96	18.3	18.2	18.1	19.0	18.5	18.0
R97	22.2	21.9	21.7	23.8	22.7	21.4

3.13 AQMA Compliance

Baseline modelled concentrations for 2019, 2022 and 2024 were compliant with the AQS objective value (40 µg/m3). As sustained compliance is sought, the figure of 36 ug/m3 is also applicable which is 10% below the AQS objective; modelled concentrations are also compliant with this value.

Three values above the compliance value of 36 µg/m3 were modelled at R60 in Caerphilly Road, R71 in Cefn Road AQMA and R79 in George Street AQMA in 2019. Table 23 shows the interpolated NO2 base concentrations (between 2019 and 2024) from the receptor within each AQMA that has the highest predicted concentration for the 2022 base. **This indicates an overall decreasing trend in concentrations, and that compliance is reached in all AQMAs by 2022.**

Table 25 – Interpolated NO_2 concentrations (µg/m^3) for 2019-2024 at selected receptors

AQMA	Receptor	2019	2020	2021	2022	2023	2024
Caerleon High Street	R9	35.1	33.6	32.2	30.7	29.4	28.2
Caerphilly Road	R60	*39.3*	35.5	31.7	27.9	26.3	24.6
Cefn Road	R71	*39.7*	*38.2*	*36.8*	35.3	33.6	31.9
Chepstow/Caerleon Road	R31	29.9	29.4	28.9	28.4	27.9	27.4
George Street	R79	*37.7*	*36.9*	*36.0*	35.2	35.0	34.7
Malpas Road	R92	33.2	32.1	31.0	30.0	28.5	27.1

*Note: Concentrations above the AQS objective value (40 µg/m^3) are shown in bold. 2019, 2022 and 2024 data are as modelled, 2020, 2021 and 2023 interpolated.
*Note: Values in *italic* are above the compliance value of 36 µg/m^3

Table 26 shows the actual measured levels for each AQMA diffusion tube in the vicinity of modelled receptors in Table 24 for comparison of modelled and actual results, with the exception of 2023 & 2024.

Table 26 – Recorded NO_2 concentrations (µg/m^3) for 2019-2024 at selected diffusion tube sites closest to selected modelled receptors in Table 24

AQMA	Tube location	2019	2020	2021	2022	2023	2024
Caerleon High Street	9 Castle Street	36.7	25.1	25.9	26.4		
Caerphilly Road	85 Caerphilly Road	**42.5**	34.9	35.0	33.8		
Cefn Road	69 Cefn Road	32.8	23.5	27.5	33.0		
Chepstow Road/Caerleon Road	9 Caerleon Road	**41.4**	30.2	32.3	28.5		
George Street	73 George Street	36.4	28.1	29.1	30.2		
Malpas Road	4-6 Malpas Road	**41**	28.8	31.8	19.2		

*Note: Concentrations above the AQS objective value (40 µg/m^3) are shown in bold.
*Note: Values in *italic* are above the compliance value of 36 µg/m^3

3.14 Review of ongoing reductions required

Based upon a review of 2019 data in section 3.11 it was established what reductions in emissions were theoretically required. With the advent of 2022 data (judged to be the first year of post COVID data that can be relied upon as representative of a return to 'normality') the required reductions appear to be of less relevance given the fact that levels across all AQMAs have shown compliance during 2022. It might appear that the urgency with which air quality needs to be improved has slowed down. This is not considered to be the case as demonstrating sustained compliance in subsequent years requires similar results or lower. All measure types will be considered where they are feasible to implement as part of an ongoing effort to reduce emissions.

3.15 Key Priorities for Air Quality in Newport City Council

Newport City Council's priorities for air quality are driven by the range of interventions that can be applied in different settings in order to provide air quality solutions that are acceptable to communities. Through consultation with Air quality Groups and Corporate Departments within NCC it is has been possible to identify measures which can potentially be applied and are relevant to local communities. These broadly fall into categories shown below which are expanded upon:

3.16 Emissions from Transport

Measures which directly impact upon traffic emissions such as traffic schemes and engineered solutions and fleet transition to cleaner technology are covered within this area and expanded upon within section 5 AQAP Measures. Measures which encourage travel alternatives to those which cause emissions are included here e.g. Active Travel routes and schemes, cycle schemes, electric car share schemes are covered within this area and expanded upon within section 5 AQAP Measures.

3.17 Emissions from new Development

Measures which can be applied to new development such as EV charging, ASHP and photovoltaics are covered within this area and expanded upon within section 5 AQAP Measures. This is principally achieved through the planning consultation process and imposition of requirements upon developers through planning conditions and informatives.

3.18 Education & Awareness

This area includes awareness campaigns that encourage reduced usage or smarter usage of vehicles which cause emissions. It is also focuses upon the importance of air quality messaging in the educational setting of schools. Initiatives such as Clean Air Day also fall within this area.

3.19 Active Travel & Green Infrastructure

Green infrastructure not only enhances well-being within urban areas but provides a tangible contribution towards improving air quality where air quality beneficial species are used in plantings. Its combined effects for communities cannot be underestimated and as such GI is seen as an integral part of the range of measures that should be applied across AQMAs. Opportunities to include air quality beneficial species within new development will be sought by NCC and in existing areas where GI is being considered, the use of air quality beneficial species will be expected.

Table 27 on the next page draws together the key priorities and expresses them for each AQMA as a set of measures that can be considered.

Table 27 – Council Key Priorities and Measures

Measure Theme	Measure Approach in all AQMAs
Emissions from Transport	• Promoting a cleaner vehicle fleet and alternatives • 100% eBus services • ECO Stars haulage accreditation scheme update • Infrastructure projects where feasible • Green barrier (Caerphilly Road AQMA)
Emissions from new development	• Encourage EV charging as part of applications • Encourage Low Carbon heating as part of applications • Encourage Green infrastructure as part of applications • Encourage zero emission public transport access as part of applications • Updating Planning Guidance and Policy on Air Quality
Education & Awareness	• ECO Post air quality messaging monitors • Schools air quality monitoring learning initiative • Exploring walking hubs at school run times (Caerleon AQMA) • Maintaining Community Air Quality Groups
Active Travel/Green Infrastructure	• Promotion of Active Travel opportunities • Facilitate School Travel Plans • Promote School streets initiative • Promotion of green infrastructure opportunities

4. Development and Implementation of Newport City Council AQAP

4.1 Consultation and Stakeholder Engagement

In developing/updating this AQAP, we have worked with other local authorities, agencies, businesses and the local community to improve local air quality. Schedule 11 of the Environment Act 1995 requires local authorities to consult the bodies listed in Table . In addition, we have undertaken the following stakeholder engagement:

- *6 Community AQ Groups consultations serving non M4 AQMAs.*
- *Public Services Board Consultation Meeting*
- *NCC Website based consultation across Newport*

The response to our consultation stakeholder engagement is given in Appendix B.

Table 28 – Consultations Undertaken

Yes/No	Consultee
Yes	Welsh Government
Yes	Natural Resources Wales
Yes	Newport City Council Infrastructure
Yes	Newport City Council Planning & Regeneration
Yes	Newport City Council Education
Yes	Cardiff City Council, Caerphilly County Borough Council, Monmouthshire County Council, Torfaen Council
Yes	Public Health Wales
Yes	Public Services Board Sustainable Travel Group
Yes	Newport City Council Air Quality Groups
Yes	Newport Citizens Panel
Yes	Newport City Council Website Consultation

4.2 AQMA Groups

The formation of quarterly meeting air quality groups with local stakeholders from each associated AQMA, was a key part of developing this AQAP. Air Quality Groups were formed early in the AQAP process and each stage of the process presented and discussed/consulted upon at relevant times wherever possible e.g., source apportionment, measures ideas and modelling of measures. Engaging with and local people for whom the AQMA and local air quality is part of their lived experience is essential in obtaining representative views and ideas on the sort of measures that can be reasonably considered for a given AQMA.

Currently there are three Air Quality Groups comprising stakeholders from the following AQMAs:

- Caerleon
- Chepstow Road, George Street & Malpas Road
- Caerphilly Road & Cefn Road

Members of the air quality groups include residents, civic groups, environmental groups, local charities, ward councillors, faith groups, retail & commerce and schools. New members from within the AQMAs the groups serve are always welcome and can contact Environment & Community at :

air.quality@newport.gov.uk

4.3 Steering Group

The composition of the NCC AQAP steering group was as follows:

- Steven Manning (Senior Scientific Officer)
- Matthew Cridland (Regulatory Services Manager, Environment & Community)
- Sylvia Gonzalez Lopez (Head of Environment and Public Protection)
- Steve Davies (Senior Strategy Manager) – Strategic Highways
- Richard Sexty (Education Transformation Manager) - Education
- Andrew Brooks (Highways Manager) - Highways
- Alistair Hopkins (Service Manager Transport) – Active Travel
- Ross Cudlipp (Climate Change Manager) – Climate Change
- Richard Cope (Transportation Manager) – Public Transport
- Laura Waldron (Programme Manager) – Climate Change
- Andrew Ferguson (Planning & Development Manager) – Regeneration

Members of the group served to provide input and a source of internal consultation to stages of the action planning process wherever possible e.g., source apportionment, measures ideas and modelling of measures.

5. AQAP Measures

Tables 5.1 to 5.12 shows the Newport City Council AQAP measures by AQMA. It contains:

- a list of the actions that are or could, where adopted, contribute to emissions reductions as part of the plan
- the AQMAs to which they apply
- the responsible individual and departments/organisations who could deliver this action subject to wider consideration/feasibility
- notional cost of implementing each action
- expected benefit in terms of pollutant emission and/or concentration reduction
- the potential timescale for implementation
- how progress will be monitored
- Measures listed in subsequent sections are drawn from Table 26 (Council Key Priorities & Measures) and due to the nature of the AQAP being a living document, may be subject to review at any time where council consideration of new information dictates this should happen.

NB: Please see future APRs for regular annual updates on implementation of these measures where they are taken forward. These can be found at the following link:

https://www.newport.gov.uk/en/Transport-Streets/Pollution-and-noise-control/Air-quality-data-reports.aspx

Table 5.1 to 5.11 measures have been selected from a number of sources for each of the AQMAs and are based upon a range or criteria depending upon whether they are ongoing measures which are starting to have an impact or ideas for future measures for which their feasibility will need to be assessed in detail where considered. The indicative rankings for measures which are shown are intended for use in future discussions regarding their potential implementation. All of the measures identified in this AQAP have arisen from Air Quality Groups or Council Officers.

Any proposed measures which are not already funded or being implemented will require funding streams to be identified and as such would need to be the subject of bids to funding organisations. In view of the requirement for varying levels of funding there will inevitably be some uncertainty over how soon some measures can be brought forward where they are feasible. Lower cost measures will be attractive in terms of their accessibility however this needs to be considered against the level of emission reduction achieved which sometimes can be lower. Newport City Council is conscious of this and will endeavor to implement as many of the top priority measures as possible within each of the AQMAs wherever it can be shown to be feasible to do so.

5.1 – Air Quality Action Plan Measures – Caerleon AQMA

Measure No.	Measure	AQMA	EU Category	EU Classification	Lead Authority	Planning Phase	Implementation Phase	Key Performance Indicator	Target Pollution Reduction in the AQMA	Progress to Date	Estimated Completion Date	Comments
1	100% eBus services	Caerleon	Promoting low emission transport	Other	Newport Bus/NCC	TBC	Ongoing	Public awareness confirmed through panel and questionnaire responses	36 µg/m3 or better at AQO breach location Modelled reductions of -0.1 to -1.7 µg/m3	Ongoing expansion of fleet	2024/25	
2	ECO Stars accreditation scheme including AQMA routing awareness	Caerleon	Freight & Delivery Management	Route Management Plans/ Strategic routing strategy for HGV's	NCC/AQG	Current	Spring 2024	ECO Stars: Update view on fuel savings compared with previous years.	36 µg/m3 or better at AQO breach location	Funding obtained	Spring 2024	LAQM Grant funded, and work being commissioned
3	Community walking hubs for school runs	Caerleon	Promoting Travel alternatives	Promotion of walking	Local Schools	New year 2023	None currently	Percentage walking change on school run travel	36 µg/m3 or better at AQO breach location	Initial contact with NCC Highways	n/a	Idea currently being explored by AQ Group
4	Schools Air Quality Monitoring Learning	Caerleon	Public Information	Other	NCC	Scoping January 2023	Support officer to go into Schools September 2023	Tying air quality into curriculum activities	36 µg/m3 or better at AQO breach location	Funding obtained	January 2024	LAQM Grant funded, and work being commissioned
6	AQMA Schools Travel Plans	Caerleon	Promoting Travel Alternatives	Other	NCC	Scoping January 2023	September 2023 – end March 2024	School travel plan participation	36 µg/m3 or better at AQO breach location	Funding obtained	January 2024	LAQM Grant for school Traffic surveys where STP being done
7	Emission reduction from new development	Caerleon,	Promoting Low Emission Transport	Other	Local Planning Authority	Ongoing	Ongoing on a development-by-development basis	Adoption of measures e.g. anti idling, EV charging, low emission boilers etc.	36 µg/m3 or better at AQO breach location	Ongoing requests	Ongoing	
8	Infrastructure projects where feasible	Caerleon	Traffic Management	Other	NCC	Undertaken	n/a	AQO compliance at location of breach	36 µg/m3 or better at AQO breach location	Feasibility	n/a	None currently feasible

5.2 – Cost benefit Analysis for Measures Proposed in Caerleon AQMA

Measure No.	Cost benefit (cost x [pollution reduction + exposure reduction] = score)					
	Measure	**Cost** 1 = >£1m 2 = £250k-1m 3 = £50k - 250k 4 = £10k - £50k 5 = <£10k	**Air pollution reduction** 10 = greatest air quality gain 1 = least air quality gain	**Exposure reduction** 10 = greatest exposure reduction 1 = least exposure reduction	**Score = cost x benefit**	**Rank** **1 = most cost benefit effective**
1	100% eBus services	1	7	7	14	6
2	ECO Stars accreditation scheme including AQMA routing awareness	5	4	4	40	4
3	Community walking hub for school runs	5	7	7	70	1
4	Schools Air Quality Monitoring Learning	5	5	5	50	3
5	AQMA Schools Travel Plans	5	6	6	60	2
6	Emission reduction from new development	3	4	4	24	5
7	Infrastructure projects where feasible	1	7	7	14	6

5.3 – Air Quality Action Plan Measures – Caerphilly Road AQMA

Measure No.	Measure	AQMA	EU Category	EU Classification	Lead Authority	Planning Phase	Implementation Phase	Key Performance Indicator	Target Pollution Reduction in the AQMA	Progress to Date	Estimated Completion Date	Comments
1	100% eBus services	Caerphilly Road	Promoting low emission transport	Other	Newport Bus/NCC	TBC	Ongoing	Public awareness confirmed through panel and questionnaire responses	36 µg/m3 or better at AQO breach location Modelled reductions of -0.1 to -1.7 µg/m3	Ongoing expansion of fleet	2024/25	
2	ECO Stars accreditation scheme including AQMA routing awareness	Caerphilly Road	Freight & Delivery Management	Route Management Plans/ Strategic routing strategy for HGV's	NCC/AQG	Current	Spring 2024	ECO Stars: Update view on fuel savings compared with previous years.	36 µg/m3 or better at AQO breach location	Funding obtained	Spring 2024	LAQM Grant funded, and work being commissioned
3	20mph speed limit	Caerphilly Road	Traffic management	Reduction of speed limits	WG/NCC	Ongoing	September 2023	Pedestrian safety and potential air quality reductions	36 µg/m3 or better at AQO breach location	Implementation by Welsh Gov.	September 2023	Welsh Government 20mph initiative.
4	Emission reduction from new development	Caerphilly Road	Promoting Low Emission Transport	Other	Local Planning Authority	Ongoing	Ongoing on a development-by-development basis	Adoption of measures e.g. anti idling, EV charging, low emission boilers etc.	36 µg/m3 or better at AQO breach location	Ongoing requests	Ongoing	
5	Schools Air Quality Monitoring Learning	Caerphilly Road	Public Information	Other	NCC	Scoping January 2023	Support officer to go into Schools September 2023	Tying air quality into curriculum activities	36 µg/m3 or better at AQO breach location	Funding obtained	January 2024	LAQM Grant funded, and work being commissioned
6	AQMA Schools Travel Plans	Caerphilly Road	Promoting Travel Alternatives	Other	NCC	Scoping January 2023	September 2023 – end March 2024	School travel plan participation	36 µg/m3 or better at AQO breach location	Funding obtained	January 2024	LAQM Grant for school Traffic surveys where STP being done
7	Green wall/emission barrier	Caerphilly Road	Traffic Management	Other	WG/NCC	Spring 23'	n/a	Expedited reduction in N02 at 85 Caerphilly Road	36 µg/m3 or better at AQO breach location	n/a	n/a	Potential subject of future LAQM grant subject to Highways constraints
8	Infrastructure projects where feasible	Caerphilly Road	Traffic Management	Other	NCC	Undertaken	n/a	AQO compliance at location of breach	36 µg/m3 or better at AQO breach location	Feasibility	n/a	None currently identified

5.4 – Cost benefit Analysis for Measures Proposed in Caerphilly Road AQMA

Measure No.	Cost benefit (cost x [pollution reduction + exposure reduction] = score)					
	Measure	**Cost** 1 = >£1m 2 = £250k-1m 3 = £50k - 250k 4 = £10k - £50k 5 = <£10k	**Air pollution reduction** 10 = greatest air quality gain 1 = least air quality gain	**Exposure reduction** 10 = greatest exposure reduction 1 = least exposure reduction	**Score = cost x benefit**	**Rank** **1 = most cost benefit effective**
1	100% eBus services	1	7	7	14	6
2	ECO Stars accreditation scheme including AQMA routing awareness	5	4	4	40	4
3	20mph speed limit	1	5	5	10	7
4	Emission reduction from new development	3	4	4	24	5
5	Schools Air Quality Monitoring Learning	5	5	5	50	3
6	AQMA Schools Travel Plans	5	6	6	60	2
7	Green wall/emission barrier	4	8	8	64	1
8	Infrastructure projects where feasible	1	7	7	14	6

5.5 – Air Quality Action Plan Measures – Cefn Road AQMA

Measure No.	Measure	AQMA	EU Category	EU Classification	Lead Authority	Planning Phase	Implementation Phase	Key Performance Indicator	Target Pollution Reduction in the AQMA	Progress to Date	Estimated Completion Date	Comments
1	100% eBus services	Cefn Road	Promoting low emission transport	Other	Newport Bus/WG	TBC	Ongoing	Public awareness confirmed through panel and questionnaire responses	36 µg/m3 or better at AQO breach location Modelled reductions of -0.1 to -1.7 µg/m3	Ongoing expansion of fleet	2024/25	
2	ECO Stars accreditation scheme including AQMA routing awareness	Cefn Road	Freight & Delivery Management	Route Management Plans/ Strategic routing strategy for HGV's	NCC/AQG	Current	Spring 2024	ECO Stars: Update view on fuel savings compared with previous years.	36 µg/m3 or better at AQO breach location	Funding obtained	Spring 2024	LAQM Grant funded, and work being commissioned
3	20mph speed limit	Cefn Road	Traffic management	Reduction of speed limits	WG/NCC	Ongoing	September 2023	Pedestrian safety and potential air quality reductions	36 µg/m3 or better at AQO breach location	Implementation by Welsh Gov.	September 2023	Welsh Government 20mph initiative.
4	Emission reduction from new development	Cefn Road	Promoting Low Emission Transport	Other	Local Planning Authority	Ongoing	Ongoing on a development-by-development basis	Adoption of measures e.g. anti idling, EV charging, low emission boilers etc.	36 µg/m3 or better at AQO breach location	Ongoing requests	Ongoing	
5	Schools Air Quality Monitoring Learning	Cefn Road	Public Information	Other	NCC	Scoping January 2023	Support officer to go into Schools September 2023	Tying air quality into curriculum activities	36 µg/m3 or better at AQO breach location	Funding obtained	January 2024	LAQM Grant funded, and work being commissioned
6	AQMA Schools Travel Plans	Malpas Road	Promoting Travel Alternatives	Other	NCC	Scoping January 2023	September 2023 – end March 2024	School travel plan participation	36 µg/m3 or better at AQO breach location	Funding obtained	January 2024	LAQM Grant for school Traffic surveys where STP being done
7	Infrastructure projects where feasible	Cefn Road	Traffic Management	Other	NCC	Undertaken	n/a	AQO compliance at location of breach	36 µg/m3 or better at AQO breach location	Feasibility	n/a	

5.6 – Cost benefit Analysis for Measures Proposed in Cefn Road AQMA

Measure No.	Cost benefit (cost x [pollution reduction + exposure reduction] = score)					
	Measure	**Cost** 1 = >£1m 2 = £250k-1m 3 = £50k - 250k 4 = £10k - £50k 5 = <£10k	**Air pollution reduction** 10 = greatest air quality gain 1 = least air quality gain	**Exposure reduction** 10 = greatest exposure reduction 1 = least exposure reduction	**Score = cost x benefit**	**Rank** **1 = most cost benefit effective**
1	100% eBus services	1	7	7	14	5
2	ECO Stars accreditation scheme including AQMA routing awareness	5	4	4	40	3
3	20mph speed limit	1	5	5	10	6
4	Emission reduction from new development	3	4	4	24	4
5	Schools Air Quality Monitoring Learning	5	5	5	50	2
6	AQMA Schools Travel Plans	5	6	6	60	1
7	Infrastructure projects where feasible	1	7	7	14	5

5.7- Air Quality Action Plan Measures – Chepstow Road AQMA

Measure No.	Measure	AQMA	EU Category	EU Classification	Lead Authority	Planning Phase	Implementation Phase	Key Performance Indicator	Target Pollution Reduction in the AQMA	Progress to Date	Estimated Completion Date	Comments
1	100% eBus services	Chepstow Road	Promoting low emission transport	Other	Newport Bus/WG	TBC	Ongoing	Public awareness confirmed through panel and questionnaire responses	36 µg/m3 or better at AQO breach location Modelled reductions of -0.1 to -1.7 µg/m3	Ongoing expansion of fleet	2024/25	
2	ECO Stars accreditation scheme including AQMA routing awareness	Chepstow Road	Freight & Delivery Management	Route Management Plans/ Strategic routing strategy for HGV's	NCC/AQG	Current	Spring 2024	ECO Stars: Update view on fuel savings compared with previous years.	36 µg/m3 or better at AQO breach location	Funding obtained	Spring 2024	LAQM Grant funded, and work being commissioned
3	20mph speed limit	Chepstow Road	Traffic management	Reduction of speed limits	WG/NCC	Ongoing	September 2023	Pedestrian safety and potential air quality reductions	36 µg/m3 or better at AQO breach location	Implementation by Welsh Gov.	September 2023	Welsh Government 20mph initiative.
4	Emission reduction from new development	Chepstow Road	Promoting Low Emission Transport	Other	Local Planning Authority	Ongoing	Ongoing on a development-by-development basis	Adoption of measures e.g. anti idling, EV charging, low emission boilers etc.	36 µg/m3 or better at AQO breach location	Ongoing requests	Ongoing	
5	Schools air quality monitoring learning	Chepstow Road	Public Information	Other	NCC	Scoping January 2023	Support officer to go into Schools September 2023	Tying air quality into curriculum activities	36 µg/m3 or better at AQO breach location	Funding obtained	January 2024	LAQM Grant funded, and work being commissioned
6	AQMA Schools Travel Plans	Malpas Road	Promoting Travel Alternatives	Other	NCC	Scoping January 2023	September 2023 – end March 2024	School travel plan participation	36 µg/m3 or better at AQO breach location	Funding obtained	January 2024	LAQM Grant for school Traffic surveys where STP being done
7	Infrastructure projects where feasible	Chepstow Road	Traffic Management	Other	NCC	Undertaken	n/a	AQO compliance at location of breach	36 µg/m3 or better at AQO breach location	Feasibility	n/a	

5.8 - Cost benefit Analysis for Measures Proposed in Chepstow Road AQMA

Measure No.	Cost benefit (cost x [pollution reduction + exposure reduction] = score)					
	Measure	**Cost** 1 = >£1m 2 = £250k-1m 3 = £50k - 250k 4 = £10k - £50k 5 = <£10k	**Air pollution reduction** 10 = greatest air quality gain 1 = least air quality gain	**Exposure reduction** 10 = greatest exposure reduction 1 = least exposure reduction	**Score = cost x benefit**	**Rank** **1 = most cost benefit effective**
1	100% eBus services	1	7	7	14	5
2	ECO Stars accreditation scheme including AQMA routing awareness	5	4	4	40	3
3	20mph speed limit	1	5	5	10	6
4	Emission reduction from new development	3	4	4	24	4
5	Schools Air Quality Monitoring Learning	5	5	5	50	2
6	AQMA Schools Travel Plans	5	6	6	60	1
7	Infrastructure projects where feasible	1	7	7	14	5

5.9 - Air Quality Action Plan Measures – George Street AQMA

Measure No.	Measure	AQMA	EU Category	EU Classification	Lead Authority	Planning Phase	Implementation Phase	Key Performance Indicator	Target Pollution Reduction in the AQMA	Progress to Date	Estimated Completion Date	Comments
1	100% eBus services	George Street	Promoting low emission transport	Other	Newport Bus/WG	TBC	Ongoing	Public awareness confirmed through panel and questionnaire responses	36 µg/m3 or better at AQO breach location Modelled reductions of -0.1 to -1.7 µg/m3	Ongoing expansion of fleet	2024/25	
2	ECO Stars accreditation scheme including AQMA routing awareness	George Street	Freight & Delivery Management	Route Management Plans/ Strategic routing strategy for HGV's	NCC/AQG	Current	Spring 2024	ECO Stars: Update view on fuel savings compared with previous years.	36 µg/m3 or better at AQO breach location	Funding obtained	Spring 2024	LAQM Grant funded, and work being commissioned
3	20mph speed limit	George Street	Traffic management	Reduction of speed limits	WG/NCC	Ongoing	September 2023	Pedestrian safety and potential air quality reductions	36 µg/m3 or better at AQO breach location	Implementation by Welsh Gov.	September 2023	Welsh Government 20mph initiative.
4	Emission reduction from new development	George Street	Promoting Low Emission Transport	Other	Local Planning Authority	Ongoing	Ongoing on a development-by-development basis	Adoption of measures e.g. anti idling, EV charging, low emission boilers etc.	36 µg/m3 or better at AQO breach location	Ongoing requests	Ongoing	
5	Schools air quality monitoring learning	George Street	Public Information	Other	NCC	Scoping January 2023	Support officer to go into Schools September 2023	Tying air quality into curriculum activities	36 µg/m3 or better at AQO breach location	Funding obtained	January 2024	LAQM Grant funded, and work being commissioned
6	AQMA Schools Travel Plans	George Street	Promoting Travel Alternatives	Other	NCC	Scoping January 2023	September 2023 – end March 2024	School travel plan participation	36 µg/m3 or better at AQO breach location	Funding obtained	January 2024	LAQM Grant for school Traffic surveys where STP being done
7	Infrastructure projects where feasible	George Street	Traffic Management	Other	NCC	Undertaken	n/a	AQO compliance at location of breach	36 µg/m3 or better at AQO breach location	Feasibility	n/a	

5.10 – Cost benefit Analysis for Measures Proposed in George Street AQMA

Measure No.	Cost benefit (cost x [pollution reduction + exposure reduction] = score)					
	Measure	**Cost** 1 = >£1m 2 = £250k-1m 3 = £50k - 250k 4 = £10k - £50k 5 = <£10k	**Air pollution reduction** 10 = greatest air quality gain 1 = least air quality gain	**Exposure reduction** 10 = greatest exposure reduction 1 = least exposure reduction	**Score = cost x benefit**	**Rank 1 = most cost benefit effective**
1	100% eBus services	1	7	7	14	5
2	ECO Stars accreditation scheme including AQMA routing awareness	5	4	4	40	3
3	20mph speed limit	1	5	5	10	6
4	Emission reduction from new development	3	4	4	24	4
5	Schools air quality monitoring learning	5	5	5	50	2
6	AQMA Schools Travel Plans	5	6	6	60	1
7	Infrastructure projects where feasible	1	7	7	14	5

5.11 - Air Quality Action Plan Measures – Malpas Road AQMA

Measure No.	Measure	AQMA	EU Category	EU Classification	Lead Authority	Planning Phase	Implementation Phase	Key Performance Indicator	Target Pollution Reduction in the AQMA	Progress to Date	Estimated Completion Date	Comments
1	100% eBus services	Malpas Road	Promoting low emission transport	Other	Newport Bus/WG	TBC	Ongoing	Public awareness confirmed through panel and questionnaire responses	36 µg/m3 or better at AQO breach location Modelled reductions of -0.1 to -1.7 µg/m3	Ongoing expansion of fleet	2024/25	
2	ECO Stars accreditation scheme including AQMA routing awareness	Malpas Road	Freight & Delivery Management	Route Management Plans/ Strategic routing strategy for HGV's	NCC/AQG	Current	Spring 2024	ECO Stars: Update view on fuel savings compared with previous years.	36 µg/m3 or better at AQO breach location	Funding obtained	Spring 2024	LAQM Grant funded, and work being commissioned
3	20mph speed limit	Malpas Road	Traffic management	Reduction of speed limits	WG/NCC	Ongoing	September 2023	Pedestrian safety and potential air quality reductions	36 µg/m3 or better at AQO breach location	Implementation by Welsh Gov.	September 2023	Welsh Government 20mph initiative.
4	Emission reduction from new development	Malpas Road	Promoting Low Emission Transport	Other	Local Planning Authority	Ongoing	Ongoing on a development-by-development basis	Adoption of measures e.g. anti idling, EV charging, low emission boilers etc.	36 µg/m3 or better at AQO breach location	Ongoing requests	Ongoing	
5	Schools air quality monitoring learning	Malpas Road	Public Information	Other	NCC	Scoping January 2023	Support officer to go into Schools September 2023	Tying air quality into curriculum activities	36 µg/m3 or better at AQO breach location	Funding obtained	January 2024	LAQM Grant funded, and work being commissioned
6	AQMA Schools Travel Plans	Malpas Road	Promoting Travel Alternatives	Other	NCC	Scoping January 2023	September 2023 – end March 2024	School travel plan participation	36 µg/m3 or better at AQO breach location	Funding obtained	January 2024	LAQM Grant for school Traffic surveys where STP being done
7	Infrastructure projects where feasible	Malpas Road	Traffic Management	Other	NCC	Undertaken	n/a	AQO compliance at location of breach	36 µg/m3 or better at AQO breach location	Feasibility	n/a	

5.12 – Cost benefit Analysis for Measures Proposed in Malpas Road AQMA

Measure No.	Cost benefit (cost x [pollution reduction + exposure reduction] = score)					
	Measure	**Cost** 1 = >£1m 2 = £250k-1m 3 = £50k - 250k 4 = £10k - £50k 5 = <£10k	**Air pollution reduction** 10 = greatest air quality gain 1 = least air quality gain	**Exposure reduction** 10 = greatest exposure reduction 1 = least exposure reduction	**Score = cost x benefit**	**Rank 1 = most cost benefit effective**
1	100% eBus services	1	7	7	14	5
2	ECO Stars accreditation scheme including AQMA routing awareness	5	4	4	40	3
3	20mph speed limit	1	5	5	10	6
4	Emission reduction from new development	3	4	4	24	4
5	Schools air quality monitoring learning	5	5	5	50	2
6	AQMA Schools Travel Plans	5	6	6	60	1
7	Infrastructure projects where feasible	1	7	7	14	5

5.13 Taking Things Forward

Moving forward the AQAP measures identified for each AQMA will form the framework for working with communities and local air quality with a view to delivering bespoke measures in each AQMA. Extending the aims and practice of the AQAP beyond AQMAs and across Newport is an aspiration that can be hopefully realised as well in the future through an Air Quality Strategy for Newport City Council.

Many of the measures identified in this AQAP are already works in progress and their contribution towards reducing emissions is reasonably certain. Those which have yet to be considered will be looked at on a priority basis within each AQMA and where they can be initiated in tandem with other measures they will be subject to resources (staff and financial) and prevailing air quality data.

Once compliance has been achieved with the prevailing nitrogen dioxide AQO this does not need to mean a cessation of the drive to improve nitrogen dioxide levels to a point which could be as low as reasonably practicable (ALARP). Best achievable air quality should be an aim in Newport wherever possible.

Another piece of work which could stem from this AQAP is the estimation of the health benefits associated with the implementation of measures which bring about reductions in emissions and service cost savings this equates to. Such an exercise could provide a health context which is linked to the implementation of measures. Such a piece of work would need to be led by Newport City Council and Public Health Wales. New air quality project ideas are constantly being proposed and will hopefully add to the diversity of work that can be done with AQMA communities.

This AQAP will be reviewed no later than 2028; however, should there be any significant legislative changes or guidance in respect of standards to be achieved for air quality in Wales prior to 2028, it will be necessary to update this AQAP or produce an amending document to support it.

Appendix A:

Air Quality Prior to 2022

From an AQAP scoping report conducted in February 2022 the following was observed. To understand the range and extent of the air quality problem in Newport, the current status of all eleven AQMAs has been reviewed. Local monitoring data has been assessed to consider trends and locations of current exceedances of the air quality objectives.

Overall it is noted that the majority of the AQMAs have experienced a slight improvement in NO2 concentrations over the last 5-7 years, although exceedances remain in some AQMAs when considering 2019 data. Data is available for 2020 and 2021, and is presented below, however, these data will have been impacted by the COVID-19 pandemic and is likely not representative of long-term trends.

It is noted in NCC's latest APR (Newport City Council, 2020) that background air quality continues to show a marginal improvement.

Trends in AQMAs

For each respective AQMA, a review of Newport's APRs (Newport City Council, 2015 – 2019) has been conducted to consider trends in annual mean NO_2 concentrations and to describe the current AQMA contexts. 2019 was chosen for this work as the baseline year for modelling purposes and calculation of pollutant reductions required hence in AQMA trends it is 2019 values that have been highlighted. It is recognised that higher values have been observed in years prior to 2019. The highest values observed in 2019 are discussed in the following sections.

Ambient air quality concentration data has also been reviewed from Defra's national Pollution Climate Mapping modelling as provided on the UK Ambient Air Quality Interactive Map[1]. Roadside concentrations along the A4042, A4051, A468 and M4 have been modelled by Defra, which includes estimates of roadside NO_2 (2018-2020) concentrations. Modelled roadside concentrations are included for each AQMA where applicable. These modelled values have been combined with monitoring data to form an overall air quality assessment of these roads. The modelled 2020 levels therefore reflect the reductions in monitored levels due to the Covid-19 pandemic.

[1] https://uk-air.defra.gov.uk/data/gis-mapping/

Caerleon AQMA

The Caerleon AQMA covers a number of properties along either side of the High Street in Caerleon, with a one-way system in place through the narrow streets.

Table 0-1: Annual Mean NO_2 Concentrations between 2015 and 2021 within and around the Caerleon AQMA

Site ID	Type	(X,Y)	Annual Mean NO_2 Concentrations (µg/m³)						
			2015	2016	2017	2018	2019	2020	2021
NCC8	Roadside	(334105,190478)	-	34.1	29.9	38.3	34.6	27.9	29.6
NCC10D	Façade	(334208,190186)	**40.3**	38.2	37.0	30.6	-	19.6	20.8
NCC25C	Façade	(334182,190422)	31.3	27.7	28.7	**41.6**	**43.8**	26.9	29.9
NCC26B	Roadside	(334136,190458)	39.6	34.5	37.4	**50.9**	**48.6**	35.0	36.4
NCC27B	Roadside	(334143,190454)	-	21.2	21.5	**41.6**	**41.7**	28.5	28.9
NCC35A	Roadside	(334232,190463)	38.9	**41.1**	37.5	25.6	25.9	22.7	23.8
NCC36A	Roadside	(334260,190479)	-	39.8	**41.0**	23.6	23.0	19.6	20.2
NCC43A	Roadside	(334212,190446)	20.1	21.8	20.3	29.7	30.3	22.9	23.5
NCC47A	Roadside	(334199,190431)	30.9	32.7	25.5	34.3	36.7	25.1	26.6
NCC73A	Roadside	(334123,190374)	-	26.1	27.7	25.9	18.5	-	-
NCC74	Façade	(334140,190392)	-	26.7	37.3	23.5	24.9	17.5	19.8
NCC77A	Roadside	(334195,190186)	-	25.6	25.7	15.8	29.2	-	-
NCC3A*	Façade	(334092,190822)	-	39.0	32.6	17.6	18.0	12.6	15.4
NCC34A*	Façade	(334010,190532)	**48.0**	**49.3**	**42.3**	26.7	27.1	19.9	21.0
NCC52*	Roadside	(333880,190970)	-	**50.8**	**50.1**	21.0	21.0	18.5	19.1
NCC53*	Roadside	(333598,190556)	-	32.8	31.6	19.9	22.0	15.6	16.4
NCC54A*	Roadside	(334279,190593)	39.1	**42.2**	39.3	16.2	16.5	-	9.2
NCC76B*	Roadside	(334279,190593)	-	-	-	-	-	11.0	-
NCC76C*	Roadside	(334085,190587)	-	-	-	-	-	-	12.5

*Notes: * Not located in AQMA but locations are in close proximity of the AQMA*

Exceedances of the NO_2 annual mean AQO of 40 µg/m³ are shown in bold.

Annual mean NO_2 concentrations in this AQMA have remained above the AQO for a number of years, with most of the exceedances found along Caerleon High Street. As shown in Table 0-1 and Figure 0-1, the 2019 concentrations were exceeded at three locations along the High Street and Castle Street (NCC25C, NCC26B & NCC27B). These locations experienced either a small increase or remained at the 2018 levels. The highest NO_2 concentration recorded in this AQMA was **48.6 µg/m³ in 2019**, with a similar figure also recorded in 2018 (50.9 µg/m³). The concentrations to the southern side of the High Street were found to be close to the AQO at NCC47A (36.7 µg/m³). Concentrations at monitoring locations outside of the AQMA have been well below the AQO since 2018.

Figure 0-1: Caerleon High Street AQMA Designation and Monitoring Locations

AECOM

PROJECT
Newport City Council Air Quality Action Plan Scoping Report

CLIENT
Newport City Council

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LEGEND
2019 Annual Mean NO_2 Concentrations ($\mu g/m^3$)
- <24.0
- 24.1 - 28.0
- 28.1 - 32.0
- 32.1 - 36.0
- 36.1 - 40.0
- >40.0
- Sites monitored for NO_2 in other years
- Air Quality Management Areas - Not influenced by M4

NOTES
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ISSUE PURPOSE
FINAL

PROJECT NUMBER
60656225

SHEET TITLE
Caerleon High Street AQMA Designation and Monitoring Locations

SHEET NUMBER
Figure 2-1

Revision: Rev No.1 Drawn: HN Checked: ZA Approved: PF Date: 30/03/2022

Malpas Road AQMA

The Malpas Road AQMA covers a number of residential properties along both sides of Malpas Road in the vicinity of the junction with Redland Street. This AQMA has traffic fed from the M4 from the north and is located about 350m away from the Shaftesbury AQMA, which is directly influenced by the M4.

Table 0-2: Annual Mean NO_2 Concentrations between 2015 and 2021 within and around the Malpas Road AQMA

Site ID	Type	(X,Y)	Annual Mean NO_2 Concentrations (µg/m³)						
			2015	2016	2017	2018	2019	2020	2021
NCC14A	Roadside	(330834,189310)	**41.1**	38.0	37.3	37.6	**40.0**	25.9	29.4
NCC64	Roadside	(330891,189199)	-	37.7	32.3	39.7	**41.0**	28.8	32.6
NCC63*	Roadside	(330743,189444)	-	25.8	28.7	28.9	29.0	19.9	19.4

*Notes: * Not located in AQMA but locations are in close proximity of the AQMA*

Exceedance of the NO_2 annual mean AQO of 40 µg/m³ are shown in bold.

As shown in Table 0-2, annual mean NO_2 concentrations in the Malpas Road AQMA have fluctuated around the AQO between 2015 and 2019. The highest recorded concentration in **2019 was 41.0 µg/m³** (NCC64), with the other site in the AQMA (NCC14A) also at the AQO value. As shown in Figure 0-2, NCC63 is located outside of the current AQMA boundary along Malpas Road towards the M4. This site displays consistent concentrations that are below the AQO for NO_2.

Vehicle emissions from the two A-roads are likely to contribute to the NO_2 concentrations recorded in the AQMA with A4051 Malpas Road, and A4042, which runs along the AQMA to the east. Modelled roadside concentrations of NO_2 are presented in Table 0-3. The modelled roadside concentrations for these A-roads are approximately in the range of 33 µg/m³ to 35 µg/m³ for 2018 and 2019. Monitoring site NCC63 displays similar measured concentrations of NO_2 to those modelled concentrations on the A4051 Malpas Road, which is outside of the AQMA. This highlights the specific issues resulting from the canyon effect leading to higher emissions in the AQMA.

Table 0-3: Annual Mean Modelled Roadside Concentrations

Road	Located within/near AQMA	Annual Mean Roadside Concentrations (µg/m³)		
		2018	2019	2020
A4042	Malpas Road AQMA	-	33.3	19.1
A4051	Shaftesbury AQMA Malpas Road AQMA	34.4	34.6	24.2

Figure 0-2: Malpas Road AQMA Designation and Monitoring Locations

Chepstow Road / Caerleon Road AQMA

This AQMA covers a number of houses to the east of Clarence Place to Caerleon Road and to the north-east of Clarence Place to Chepstow Road.

Table 0-4: Annual Mean NO_2 Concentrations between 2015 and 2021 within and around the Chepstow Road / Clarence Place / Caerleon Road AQMA

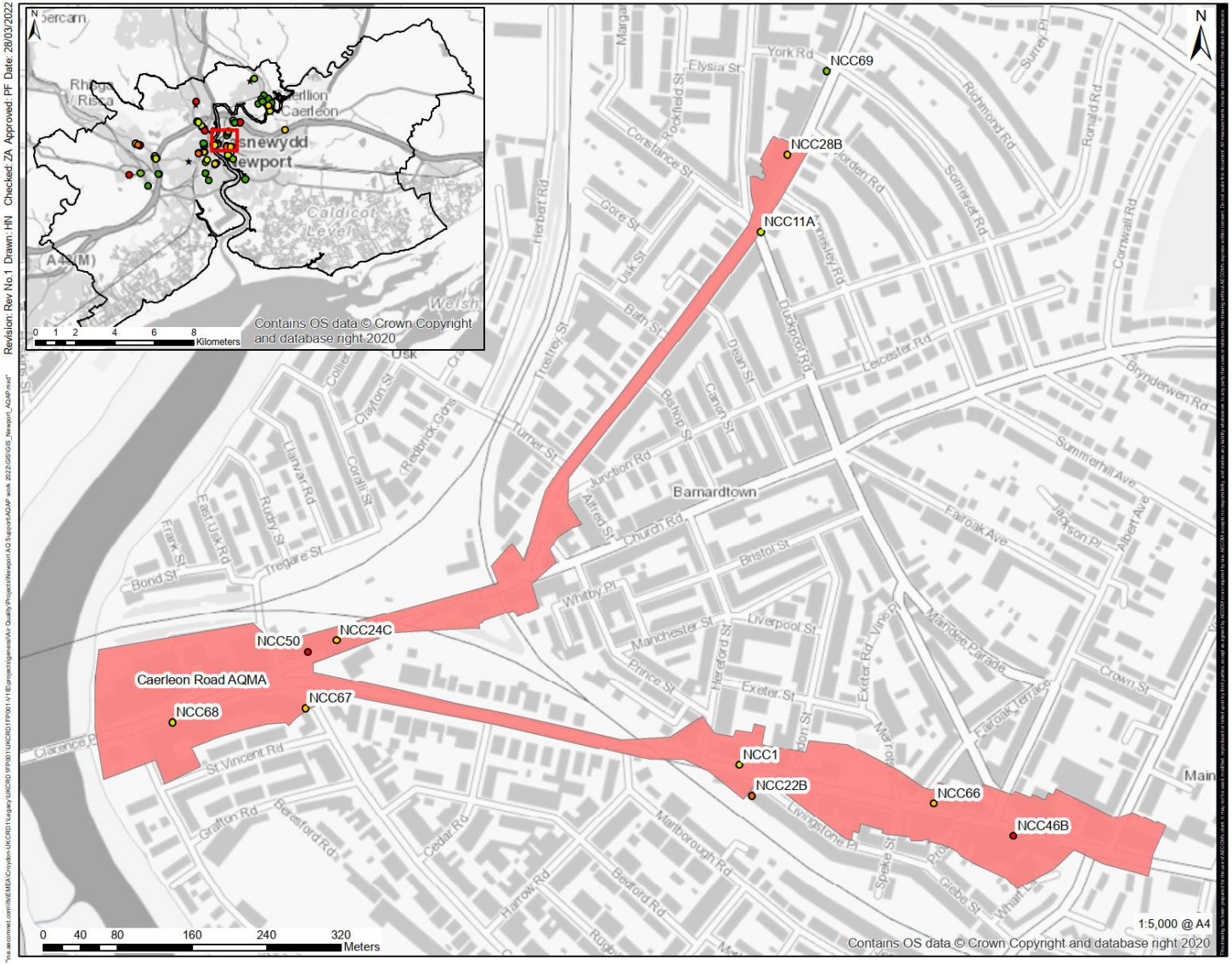
Site ID	Type	(X,Y)	Annual Mean NO_2 Concentrations (µg/m^3)						
			2015	2016	2017	2018	2019	2020	2021
NCC1	Roadside	(331995,188415)	34.4	36.0	32.2	29.7	30.2	24.1	24.7
NCC11A	Roadside	(332018,188987)	19.5	20.7	19.5	31.0	32.3	25.2	27.1
NCC22B	Roadside	(332091,188382)	**40.5**	**43.8**	**40.4**	34.5	39.5	27.8	28.7
NCC28B	Roadside	(332047,189070)	32.3	39.7	36.0	33.7	34.2	28.4	30.3
NCC46B	Roadside	(332290,188339)	-	-	-	**44.4**	**48.1**	35.0	38.2
NCC50	Roadside	(331531,188536)	**48.9**	**44.4**	**50.5**	38.1	**43.5**	30.2	33.1
NCC66	Roadside	(332204,188374)	-	24.4	33.8	34.8	34.8	25.7	28.9
NCC67	Façade	(331529,188476)	-	34.2	32.0	30.3	34.6	26.0	26.6
NCC68	Roadside	(331386,188461)	-	**46.1**	**43.2**	31.5	32.1	20.4	24.1
NCC69*	Roadside	(332089,189160)	-	**47.4**	**49.2**	25.2	27.0	21.7	22.6

*Notes: * Not located in AQMA but locations are in close proximity of the AQMA*

Exceedance of the NO_2 annual mean AQO of 40 µg/m^3 are shown in bold.

As shown in Table 0-4 and Figure 0-3, the annual mean NO_2 concentrations around the centre and east of the AQMA towards the branch of Chepstow Road from Caerleon Road exceeded the AQO in 2019. Concentrations at monitoring sites NCC22B, NCC46B and NCC50 are all either close to or above the AQO, with the highest concentration found at NCC46B (**48.1 µg/m^3**). Concentrations in the previous five years have displayed a general decrease at most locations, with the exception of the three sites mentioned above.

Figure 0-3: Chepstow Road / Clarence Place / Caerleon Road AQMA Designation and Monitoring Locations



Cefn Road AQMA

The Cefn Road AQMA covers a small area including a stretch of residential properties between Cefn Road/Ruskin Avenue junction up to and including 116 Cefn Road.

Table 0-5: Annual Mean NO_2 Concentrations between 2015 and 2021 within and around the Cefn Road AQMA

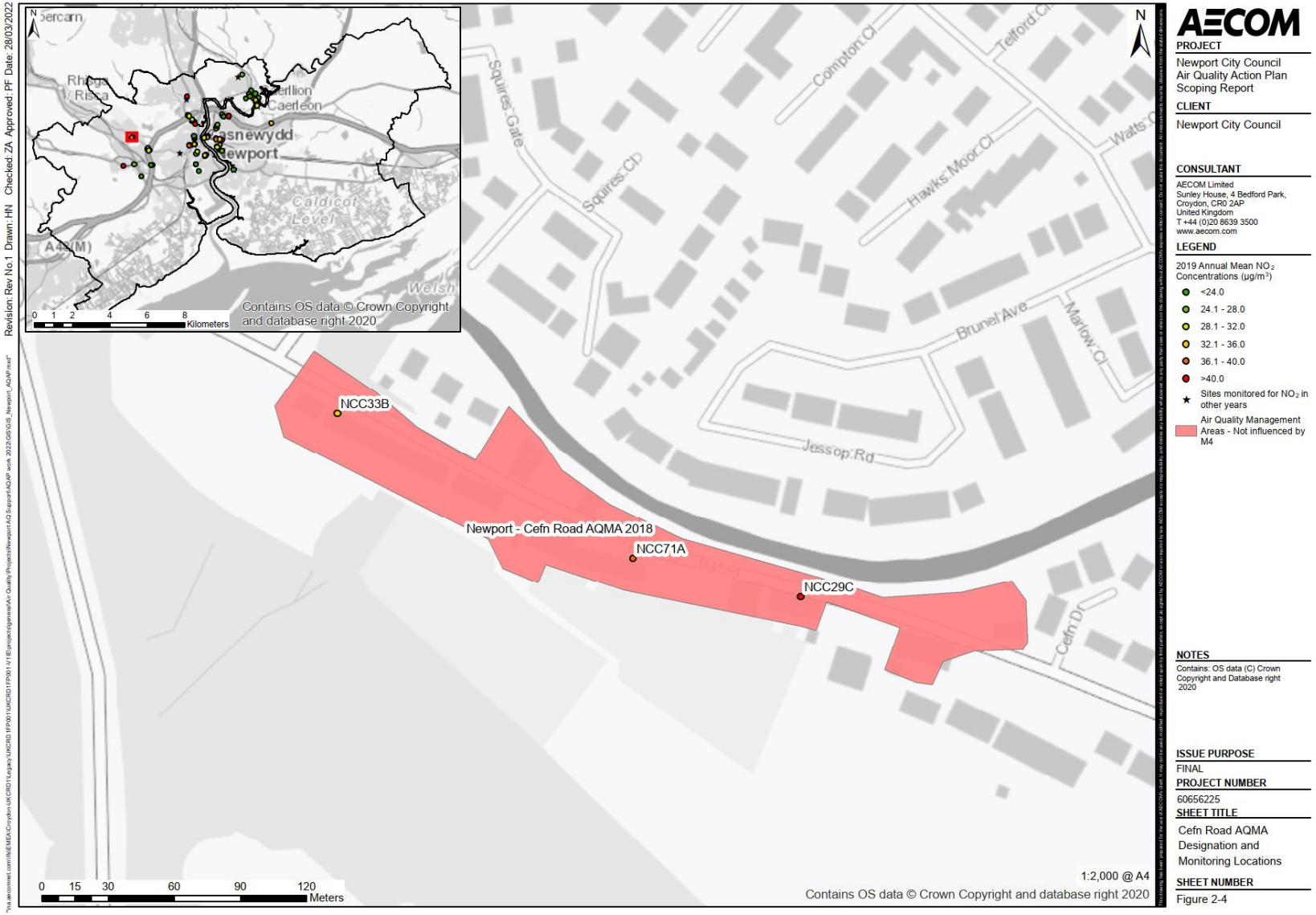
Site ID	Type	(X,Y)	Annual Mean NO_2 Concentrations ($\mu g/m^3$)						
			2015	2016	2017	2018	2019	2020	2021
NCC29C	Roadside (Façade)	(327600,188468)	**61.8**	**56.6**	**55.8**	**41.0**	**42.7**	31.0	33.2
NCC33B	Roadside (Façade)	(327390,188551)	**56.3**	**54.1**	**51.1**	32.4	32.8	23.5	28.2
NCC71A	Roadside (Façade)	(327524,188485)	-	39.8	39.5	39.8	37.8	28.1	35.8

Notes: Exceedance of the NO_2 annual mean AQO of 40 $\mu g/m^3$ are shown in bold.

NO_2 annual means in excess of 60 $\mu g/m^3$, indicating a potential exceedance of the NO_2 hourly mean AQS objective are shown in bold and underlined.

In Table 0-5 and Figure 0-4, the annual mean NO_2 concentrations have declined considerably from 2015 to 2019, from levels around 60 $\mu g/m^3$ to levels around or below the AQO at two monitoring locations. Concentrations at the façade location (NCC33B) have dropped below the AQO, while levels at site NCC29C located on a façade have remained above the AQO until 2019. The 2019 annual mean concentration was **42.7 $\mu g/m^3$**, showing a slight increase from 41.0 $\mu g/m^3$ recorded in 2018. Concentrations measured at the other location (NCC71A) in the centre of the AQMA have remained consistently just below the AQO and has shown little change between 2016 and 2019. It should be noted despite the impacts of COVID-19 during 2020, the NO_2 concentration in 2021 (35.8 $\mu g/m^3$) at this site is more in line with 2019 levels.

Figure 0-4: Cefn Road AQMA Designation and Monitoring Locations



Caerphilly Road AQMA

The Caerphilly Road AQMA encompasses an area extending either side of the M4 including residential properties from Forge Road Roundabout to 93 Caerphilly Road.

Table 0-6: Annual Mean NO_2 Concentrations between 2015 and 2021 within and around the Caerphilly Road AQMA

Site ID	Type	(X,Y)	Annual Mean NO_2 Concentrations (µg/m³)						
			2015	2016	2017	2018	2019	2020	2021
NCC48D	Roadside	(327053,186943)	-	-	-	**44.9**	**42.4**	34.9	35.9
NCC49C	Roadside	(327631,187043)	33.6	32.3	30.7	29.7	28.3	23.9	25.4
NCC56A*	Roadside	(328015,186383)	23.7	25.5	22.5	18.8	21.1	-	-

*Notes: * Not located in AQMA but locations are in close proximity of the AQMA*

Exceedance of the NO_2 annual mean AQO of 40 µg/m³ are shown in bold.

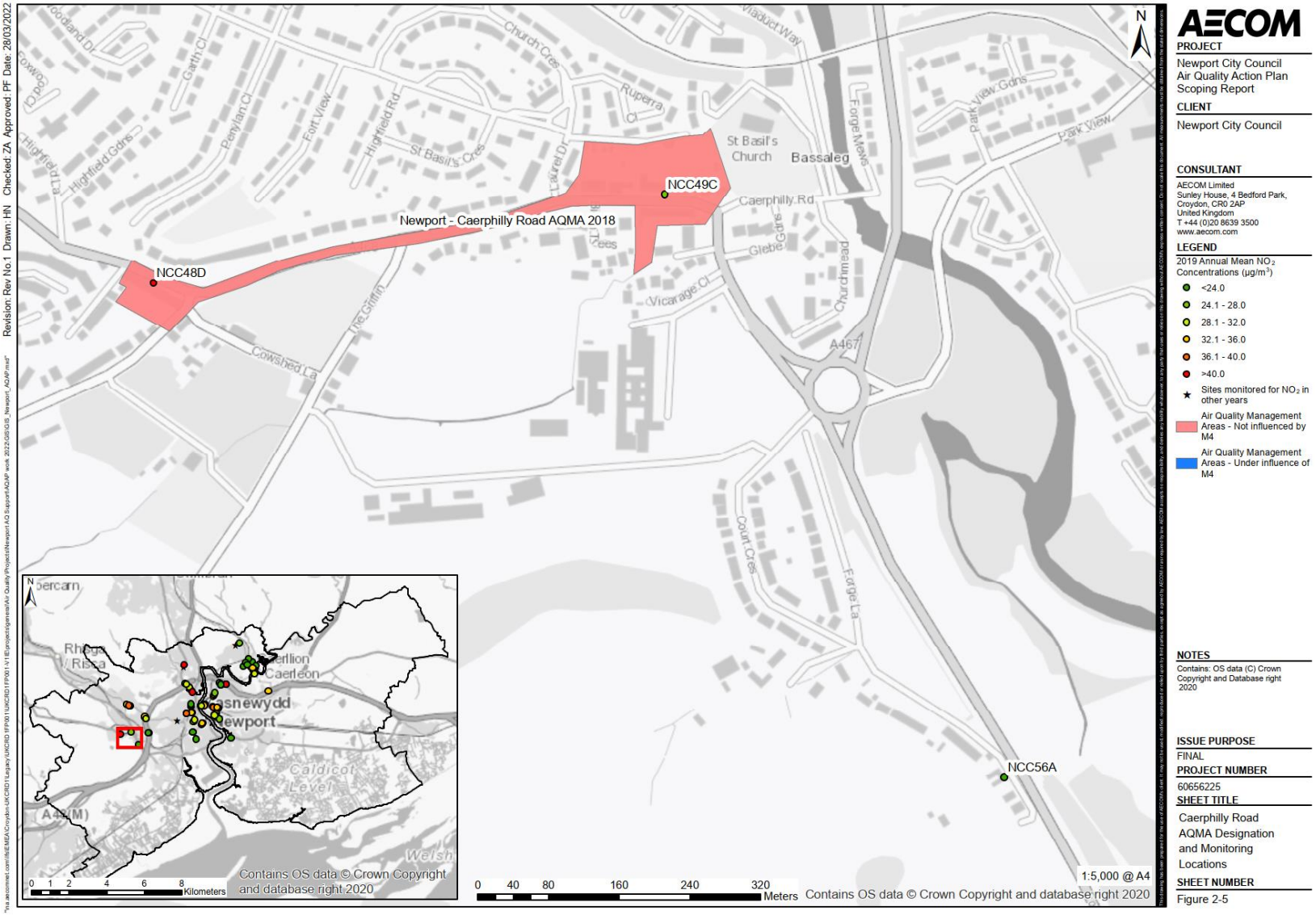
As shown in Table 0-6 and Figure 0-5, the annual mean NO_2 concentrations from 2015 to 2019 at NCC49C have complied with the AQO. Monitoring at site NCC48D commenced in 2018 and levels were above the AQO during 2018 and 2019. The concentration measured here was **42.4 µg/m³ in 2019**, showing a small decrease from 44.9 µg/m³ in 2018. The other monitoring location closest to the AQMA at site NCC56A has remained well below the AQO and the site was removed in 2019.

The modelled roadside NO_2 concentrations along the A468 which runs through the AQMA are low, as shown in Table 0-7. These coincide with the concentrations seen at site NCC56A, however NCC48D is located on part of the road with a significant gradient that may explain why the concentrations seen are higher.

Table 0-7: Annual Mean Modelled Roadside Concentrations

Road	Located within/near AQMA	Annual Mean Roadside Concentrations (µg/m³)		
		2018	2019	2020
A468	Caerphilly Road AQMA	20.8	20.3	15.2

Figure 0-5: Caerphilly Road AQMA Designation and Monitoring Locations



George Street AQMA

The George Street AQMA encompasses George Street between George Street / Commercial Road Junction to the George Street / Lower Dock Street Junction.

Table 0-8: Annual Mean NO_2 Concentrations between 2015 and 2021 within and around the George Street AQMA

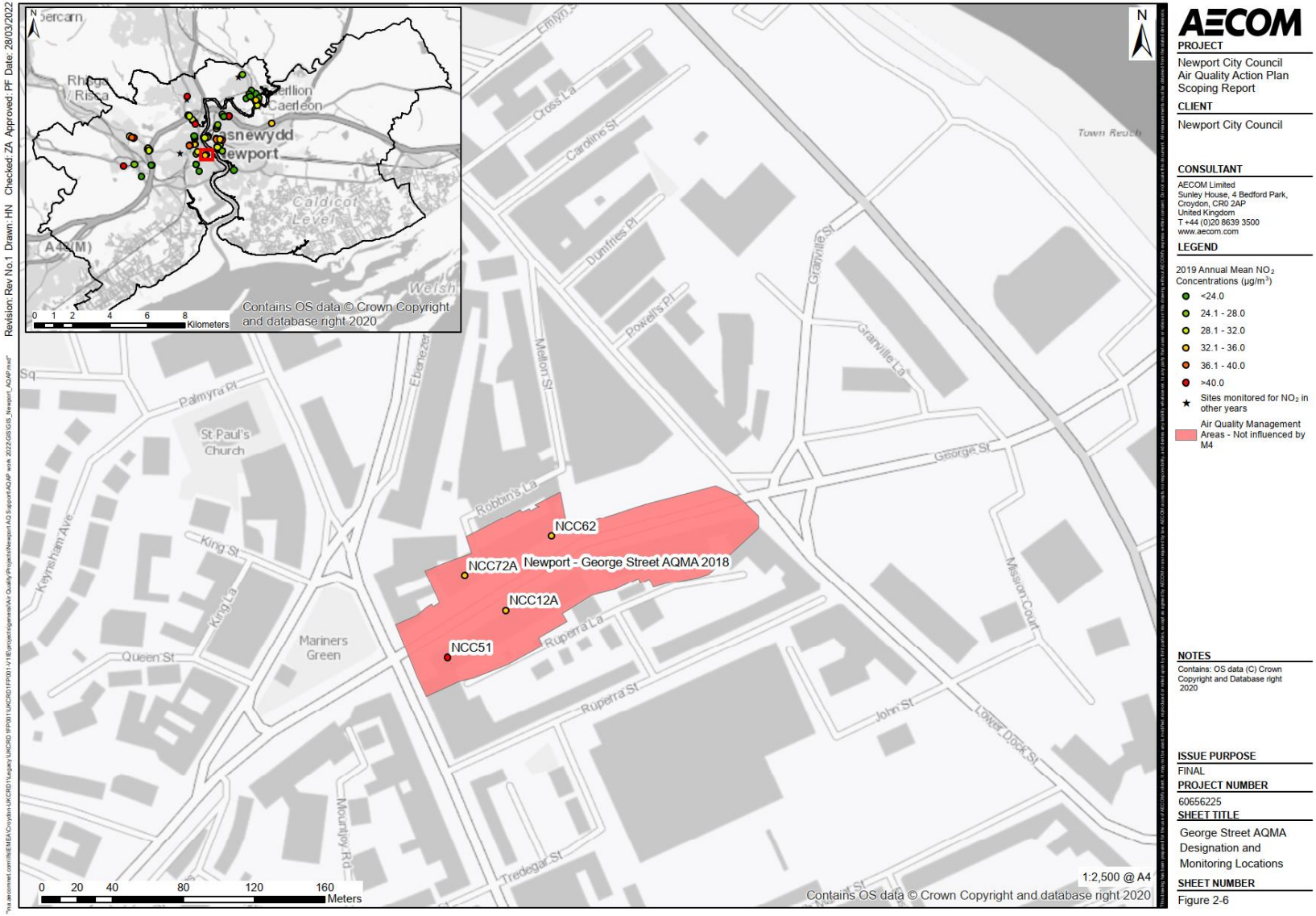
Site ID	Type	(X,Y)	Annual Mean NO_2 Concentrations (µg/m^3)						
			2015	2016	2017	2018	2019	2020	2021
NCC12A	Façade	(331428,187498)	-	36.9	36.7	35.1	36.4	28.1	29.9
NCC51	Façade	(331395,187472)	38.5	37.0	36.4	37.5	**41.1**	32.8	32.7
NCC62	Façade	(331454,187540)	-	35.6	37.2	32.3	35.4	25.5	28.7
NCC72A	Façade	(331405,187518)	-	29.4	28.5	33.5	33.6	27.5	29.0

*Notes: * Not located in AQMA but locations are in close proximity of the AQMA*

Exceedance of the NO_2 annual mean AQO of 40 µg/m^3 are shown in bold.

As shown in Table 0-8 and Figure 0-6, the annual mean NO_2 concentrations from 2015 at these four monitoring sites within the AQMA are below but close to the AQO until 2019 when concentrations at site NCC51was **41.1 µg/m^3**. Concentrations at sites NCC12A and NCC62 in the AQMA have fluctuated around 36 µg/m^3, which is within 10% of the AQO, while levels at NCC72A have increased between 2015 and 2019.

Figure 0-6: George Street AQMA Designation and Monitoring Locations



Royal Oak Hill AQMA

The Royal Oak Hill AQMA includes a single property which located adjacently to the M4 motorway just west of where Royal Oak Hill crosses the motorway.

Table 0-9: Annual Mean NO_2 Concentrations between 2015 and 2021 within and around the Royal Oak Hill AQMA

Site ID	Type	(X,Y)	Annual Mean NO_2 Concentrations (µg/m³)						
			2015	2016	2017	2018	2019	2020	2021
NCC31	Façade	(334943,189238)	-	**44.4**	32.6	36.7	35.6	29.9	27.2

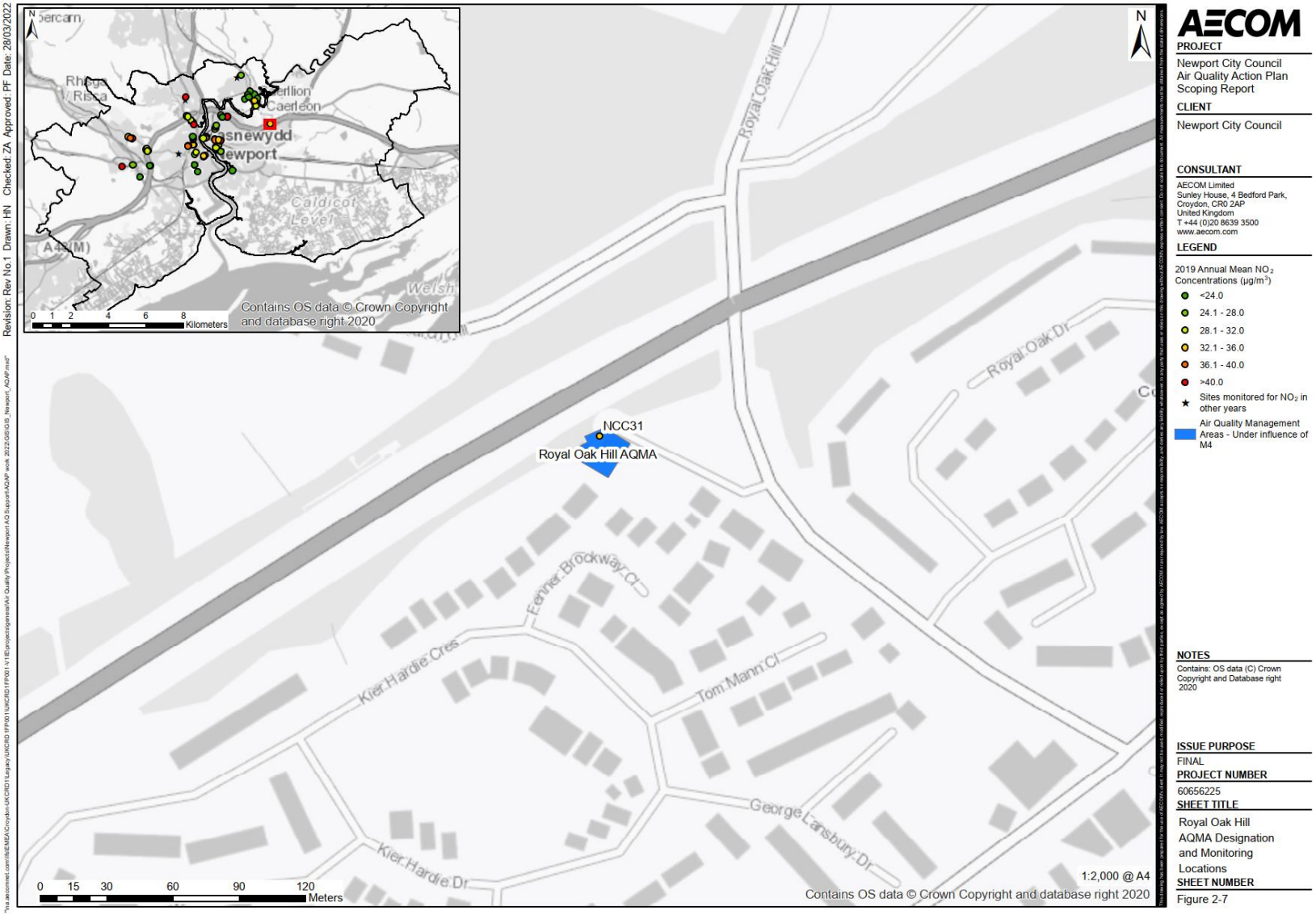
Notes: Exceedance of the NO_2 annual mean AQO of 40 µg/m³ are shown in bold.

As shown in **Table 0-9** and **Figure 0-7**, annual mean NO_2 concentrations in this AQMA have remained below the AQO since 2016 when the concentrations were 44.4 µg/m³. In recent years, the NO_2 concentrations have remained around 35 – 36 µg/m³, within 10% of the AQO. Road traffic emissions on the M4 is considered to be the main source of the high concentrations. This is reinforced by the modelled roadside concentrations, displayed in **Table 0-10**, on the M4 in 2019 of 37.8 µg/m³, which is approximately located 15m away from the residential property.

Table 0-10: Annual Mean Modelled Roadside Concentrations

Road	Located within/near AQMA	Annual Mean Roadside Concentrations (µg/m³)		
		2018	2019	2020
M4	Royal Oak Hill AQMA	-	37.8	24.8

Figure 0-7: Royal Oak Hill AQMA Designation and Monitoring Locations



Glasllwch AQMA

The Glasllwch AQMA covers an area extending either side of the M4, which includes two residential properties, located south of the Junction 27 off Bassaleg Road.

Table 0-11: Annual Mean NO_2 Concentrations between 2015 and 2021 within and around the Glasllwch AQMA

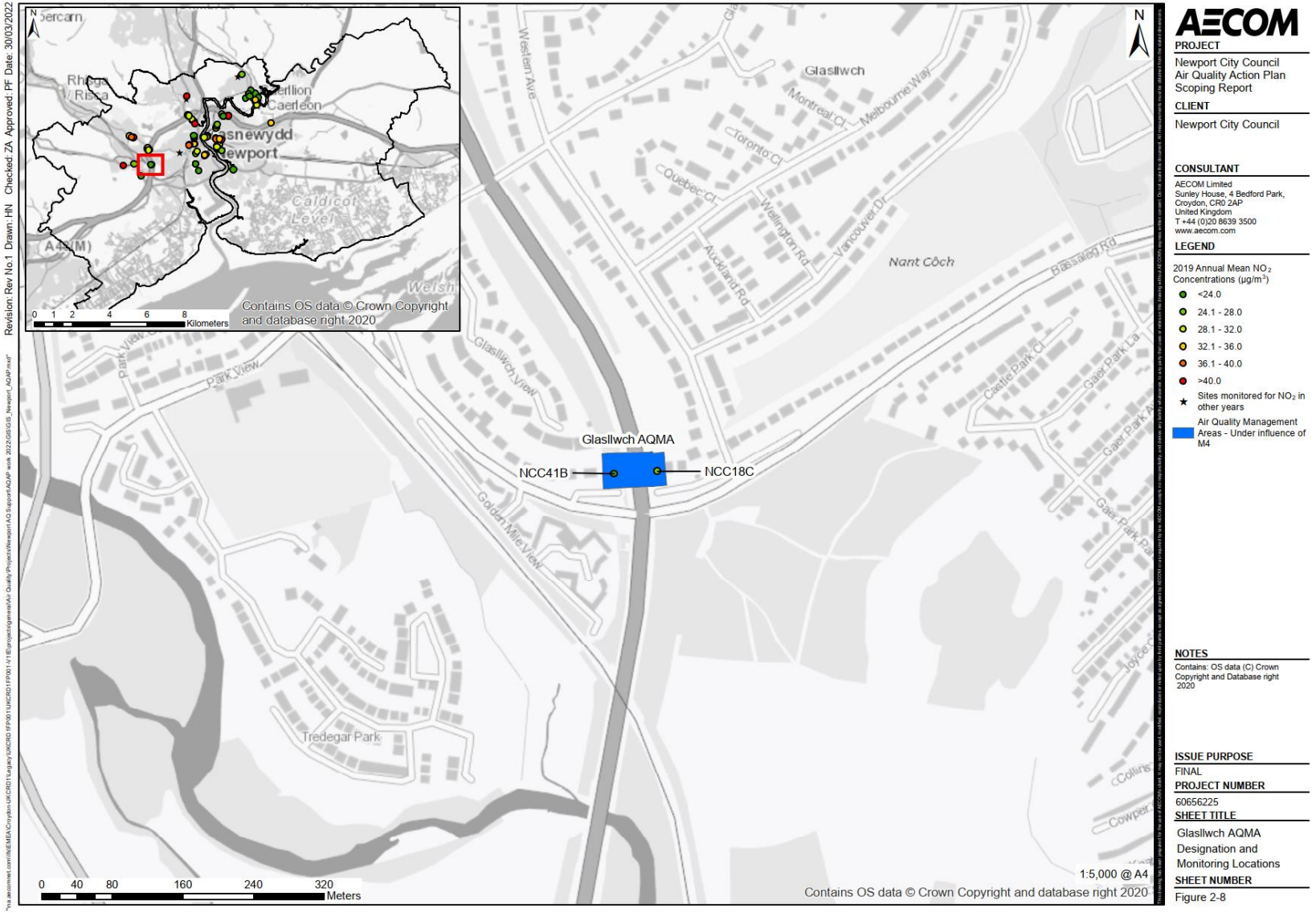
Site ID	Type	(X,Y)	Annual Mean NO_2 Concentrations (µg/m^3)						
			2015	2016	2017	2018	2019	2020	2021
NCC18C	Façade	(328586,187008)	-	35.7	28.4	39.5	27.8	22.4	21.5
NCC41B	Façade	(328537,187005)	29.5	27.8	27.3	25.4	22.4	17.8	23.4

The monitored annual mean NO_2 concentrations within the Glasllwch AQMA are shown in Table 0-11 and Figure 0-8. NCC18C and NCC41B, located on the façade of two residential properties on opposite sides of the M4, have displayed generally low annual mean NO_2 concentrations for monitoring with the AQMA (<30 µg/m^3), with the exception of NCC18C in 2016 and 2018 when the measured concentrations were close to the AQO. This fluctuation of NO_2 concentrations at NCC18C indicates there still may be some hotspots present within the AQMA. The roadside concentrations on the M4 modelled in 2018 and 2019 are relatively high as shown in **Table 0-12**.

Table 0-12 Annual Mean Modelled Roadside Concentrations

Road	Located within/near AQMA?	Annual Mean Roadside Concentrations (µg/m^3)		
		2018	2019	2020
M4	High Cross Glasllwch	35.2	33.9	24.1

Figure 0-8: Glasllwch AQMA Designation and Monitoring Locations



St Julian's AQMA

The St Julian's AQMA covers an area at the north end of Denbigh Street immediately adjacent to the slip road at Junction 25 of the M4. There are several residential properties within this AQMA to the south of the M4.

Table 0-13: Annual Mean NO_2 Concentrations between 2015 and 2021 within and around the St Julian's AQMA

Site ID	Type	(X,Y)	Annual Mean NO_2 Concentrations (µg/m^3)						
			2015	2016	2017	2018	2019	2020	2021
St Julian's *	UB (CM)	(332418, 189603)	21.0	22.0	20.0	19.0	20.0	15.0	15.0
M4 (Old Barn) *	Roadside (CM)	(332685, 189613)	**54.0**	**46.0**	**43.0**	**41.0**	36.0	28.0	32.0
NCC16A	Roadside	(332320, 189703)	**43.1**	**42.1**	**41.3**	28.2	27.5	22.6	22.3
NCC21D (Co-located with M4)*	N/A	(332690, 189615)	-	24.7	23.2	**48.2**	**44.0**	35.2	36.0
NCC23E (Co-located with M4)*	N/A	(332690, 189615)	28.5	27.0	24.2	**48.7**	**49.4**	37.3	35.2
NCC37 (Co-located with St Julian's monitor)*	UB	(332499, 189569)	-	28.3	32.9	18.7	19.4	14.4	14.2
NCC38 (Co-located with St Julian's monitor)*	UB	(332499, 189569)	**45.6**	**44.3**	36.8	18.4	18.9	14.7	13.4
NCC39 (Co-located with St Julian's monitor)*	UB	(332499, 189569)	-	34.4	32.8	18.6	17.3	14.1	13.9

*Notes: * Not located in AQMA but locations are in close proximity of the AQMA*

Exceedance of the NO_2 annual mean AQO of 40 µg/m^3 are shown in bold.

UB and CM denotes Urban Background and Continuous Monitor respectively

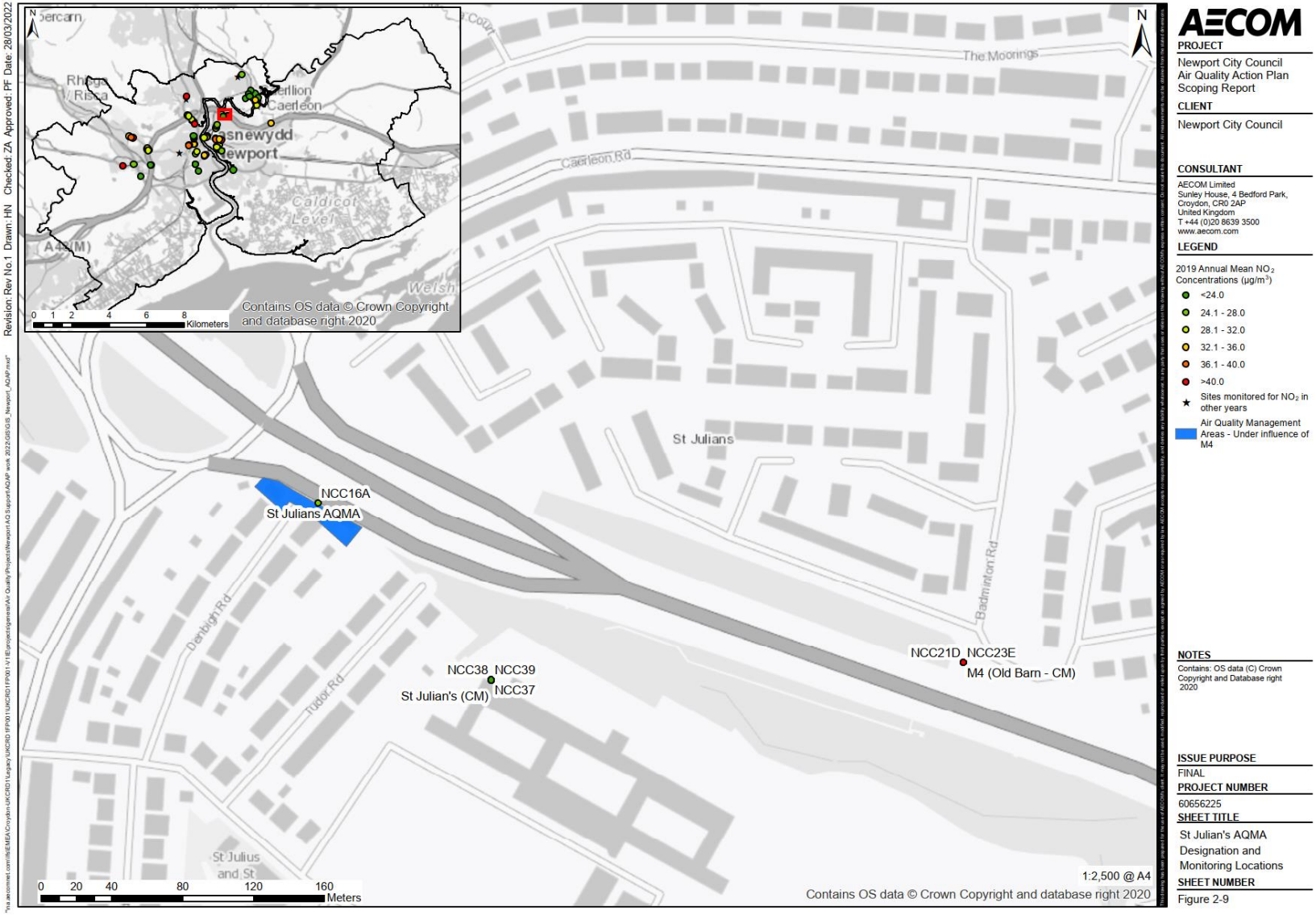
Table 0-13 and **Figure 0-9** show annual mean NO_2 concentrations at sites within the AQMA. Site NCC16A has recorded decreases in the annual mean NO_2 concentrations over the last five years, with 2015 – 2017 being the only years the AQOs were exceeded. Since 2018, concentrations have remained below 30 µg/m^3. Concentrations in and around the AQMA have also shown a general decline over this time period It should be noted that the continuous monitors provide a greater level of accuracy when measuring NO_2 concentrations than diffusion tubes, thus these results are used to assess the AQMA at co-located sites (St Julian's and M4 - Old Barn). As NO_2 concentrations at these continuous sites are consistently below the AQO, the AQMA is currently being reviewed for revocation due to the improvements in air quality.

The modelled roadside NO_2 concentrations on the M4 estimated in 2018 and 2019 are relatively high but below the AQO as shown in **Table 0-14**. The concentrations measured by the continuous monitor located at the roadside Old Barn (M4) site are noted to be very similar to the modelled roadside concentrations.

Table 0-14: Annual Mean Modelled Roadside Concentrations

Road	Located within/near AQMA?	Annual Mean Roadside Concentrations (µg/m^3)		
		2018	2019	2020
M4	St Julian's	37.3	35.6	23.9

Figure 0-9: St Julian's AQMA Designation and Monitoring Locations



High Cross AQMA

The High Cross AQMA includes two residential properties; 67 and 69 Glasllwch Crescent, located on either side of the M4 (Junction 27).

Table 0-15: Annual Mean NO_2 Concentrations between 2015 and 2021 within and around the High Cross AQMA

Site ID	Type	(X,Y)	Annual Mean NO_2 Concentrations (µg/m^3)						
			2015	2016	2017	2018	2019	2020	2021
NCC2C	Façade	(328333,187869)	**41.2**	**40.2**	**41.8**	36.2	35.8	26.3	29.1
NCC7B	Façade	(328421,187778)	-	18.4	18.7	27.6	29.2	21.1	24.0
NCC4B*	Façade	(328363,187895)	-	33.6	30.0	34.8	33.5	25.4	25.9
NCC15*	Roadside	(328443,187809)	-	30.0	29.3	22.5	23.4	24.3	23.0

*Notes: * Not located in AQMA but locations are in close proximity of the AQMA*

Exceedance of the NO_2 annual mean AQO of 40 µg/m^3 are shown in bold.

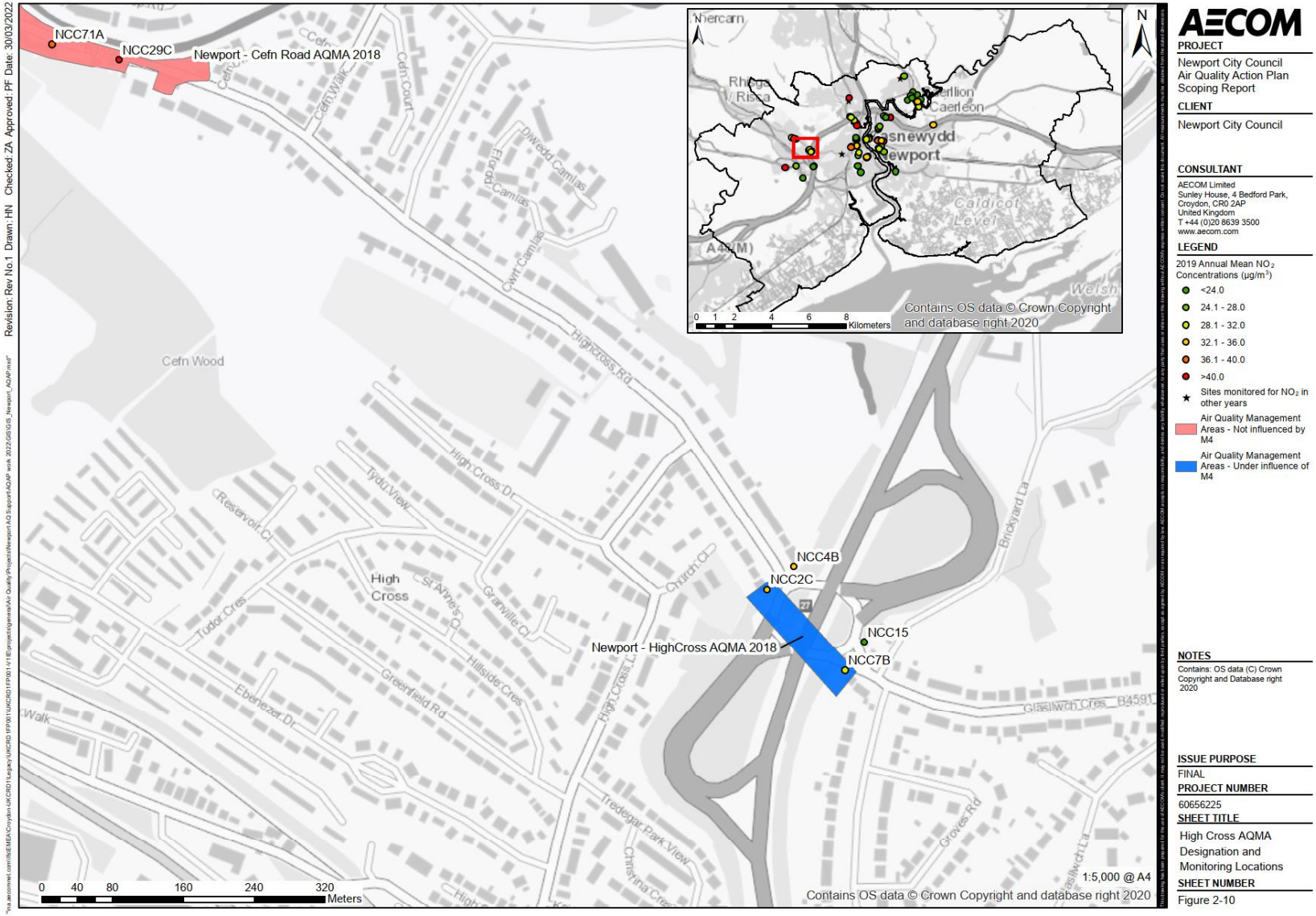
Annual mean NO_2 concentrations vary across the High Cross AQMA as shown in Figure 0-10 and Table 0-15. The concentrations on the north-west side of the AQMA were 33.5 µg/m^3 and 35.8 µg/m^3 for NCC4B and NCC2C respectively in 2019. This differs to the lower concentrations on the south-east side of the AQMA, where concentrations were 23.4 µg/m^3 and 29.2 µg/m^3 for NCC15 and NCC7B respectively.

The modelled roadside NO_2 concentrations on the M4 modelled in 2018 and 2019 are similar to monitored levels on the north side and are below the AQO as shown in Table 0-16.

Table 0-16: Annual Mean Modelled Roadside Concentrations

Road	Located within/near AQMA	Annual Mean Roadside Concentrations (µg/m^3)		
		2018	2019	2020
M4	High Cross Glasllwch AQMA	35.2	33.9	24.1

Figure 0-10: High Cross AQMA Designation and Monitoring Locations



Shaftesbury AQMA

The Shaftesbury AQMA covers an area around Junction 26 of the M4 including part of Malpas Road with residential properties.

Table 0-17: Annual Mean NO_2 Concentrations between 2015 and 2021 within and around the Shaftesbury AQMA

Site ID	Type	(X,Y)	Annual Mean NO_2 Concentrations (µg/m^3)						
			2015	2016	2017	2018	2019	2020	2021
NCC6B	Roadside	(330565,189618)	-	37.4	35.6	34.6	31.2	25.7	25.1
NCC17A	Façade	(330507,189664)	31.5	20.7	29.1	25.4	25.6	20.3	21.5

The monitoring site and data in this AQMA are shown in **Figure 0-11** and **Table 0-17**. Annual mean NO_2 concentrations in the Shaftesbury AQMA have seen gradual improvements between 2015 and 2019, decreasing from 37.4 µg/m^3 to 32.1 µg/m^3 and from 31.5 µg/m^3 to 25.6 µg/m^3 for the sites NCC6B and NCC17A respectively.

Table 0-18 shows that modelled roadside concentrations on the M4 exceeded the AQO in 2018 and 2019, and are considerably higher than monitored concentrations within the AQMA.

Table 0-18: Annual Mean Modelled Roadside Concentrations

Road	Located within/near AQMA?	Annual Mean Roadside Concentrations (µg/m^3)		
		2018	2019	2020
M4	Shaftesbury AQMA	**47.2**	**44.6**	30.7

Notes: Exceedance of the NO_2 annual mean AQO of 40 µg/m^3 are shown in bold.

Figure 0-11: Shaftesbury AQMA Designation and Monitoring Locations

Analysis of Trends

In the Councils 2020 APR trend graphs are shown for each of the AQMAs. It is noted that the majority of AQMAs have decreasing NO_2 concentrations in recent years.

Caerleon, Caerphilly Road have shown improvements in air quality, although exceedances remain. It is anticipated that local measures will need to be developed in the AQAP and, following source apportionment exercises measures, could be tailored to tackle particular sources, for example the high proportion of heavy goods vehicles (HGVs) using Caerphilly Road.

Cefn Road had limited monitoring before the COVID-19 pandemic, and therefore the long-term trend is unclear. The route is frequented by traffic leaving the M4, and it is anticipated that road traffic measures will be needed to achieve compliance. Malpas Road equally has concentrations that have fluctuated, with no clear long-term trend.

Chepstow Road shows no sustained reduction at the locations in breach of the AQO, although some reductions are noted at nearby monitoring locations.

Prior to the COVID-19 pandemic the George Street AQMA showed increasing NO_2 concentrations.

AQMAs with decreasing trends could achieve compliance with current measures in place, although the timescale is difficult to predict and could be shortened by the introduction of new measures. AQMAs with undefined trends or increasing trends will require focused measures to help bring compliance to these areas.

For the 5 AQMAs adjacent to the M4, currently no exceedances of the AQO are noted. Most sites have shown decreasing trends (High Cross, Royal Oak Hill, Shaftsbury, St Julian's), whilst Glasllwch has shown no clear trend. Whilst there are no current exceedances, these AQMAs are yet to be revoked.

Appendix B: Response to Consultation

Table A.1 – Summary of Responses to Consultation and Stakeholder Engagement on the AQAP

Consultee	Category	Responses
e.g. Chamber of Commerce	Business	E.g. Disagree with plan to remove parking on High Street in favour of buses and cycles; consider it will harm business of members.
AQ GROUP CAERLEON	AQMA COMMUNITY	
AQ GROUP CAERPHILLY	AQMA COMMUNITY	
AQ GROUP CEFN	AQMA COMMUNITY	
AQ GROUP CHEPSTOW	AQMA COMMUNITY	
AQ GROUP GEORGE	AQMA COMMUNITY	
AQ GROUP MALPAS	AQMA COMMUNITY	
NCC ONLINE CONSULTATION	ALL GROUPS	
AQAP Steering Group	Newport City Council	

Appendix C: Measures (ongoing and suggested)

SYNCH MEASURE NAMES WITH AQMA TABLES

Measure No.	Measure	EU Category	EU Classification	Lead Authority	Planning Phase	Implementation Phase	Key Performance Indicator	Target % Pollution Reduction in the AQMA	Progress to Date	Estimated Completion Date	Comments	AQMA to which measure applies (All or named)	Cost (High,Med,Low) or est. amount	Time to implement (Months, Years)
1	100% electric buses	Promoting low emission transport	Other	Newport Bus/WG	TBC	Ongoing	Public awareness confirmed through panel and questionnaire responses	36 µg/m3 or better at AQO breach location	Ongoing expansion of fleet	2024/25?	Aim to be 100%	All	High	Ongoing
2	Old Green Improvements Active Travel, Green Infrastructure	Traffic Management	Strategic Highways Improvement	NCC	2020	Not known	AQO compliance in AQMA served	36 µg/m3 or better at AQO breach location	Ongoing	Not known		Chepstow, George Street & Malpas	High	Not known
3	GWENT Healthy Travel Charter	Promoting Travel Alternatives	Intensive active travel campaign & infrastructure	NCC	2020	2021	Adoption of charter and message transfer	36 µg/m3 or better at AQO breach location	Completed	2021		All	Low	Ongoing
4	ECO Stars Scheme - savings audit	Freight & Delivery Management	Route Management Plans/ Strategic routing strategy for HGV's	NCC/AQG	Current	Spring 2024	ECO Stars: Update view on fuel savings compared with previous years.	36 µg/m3 or better at AQO breach location	Funding obtained	Spring 2024	LAQM Grant funded, and work being commissioned	All	Low	Ongoing

Measure No.	Measure	EU Category	EU Classification	Lead Authority	Planning Phase	Implementation Phase	Key Performance Indicator	Target % Pollution Reduction in the AQMA	Progress to Date	Estimated Completion Date	Comments	AQMA to which measure applies (All or named)	Cost (High,Med,Low) or est. amount	Time to implement (Months, Years)
5	Air Inequalities Project	Public Information	Via other mechanisms	EA/NRW	2020	ongoing	Stakeholder engagement	36 µg/m3 or better at AQO breach location	Ongoing	n/a	Largely EA led work.	All	Low	
6	Active Travel Network Map Review	Promoting Travel Alternatives	Promotion of Cycling & Walking	NCC	Completed	Completed	Active travel uptake and use	36 µg/m3 or better at AQO breach location	Completed	Completed	Updates as required	All	Low	Completed
7	Target active travel for the school run and anti-idling campaigns outside school gates.	Public Information	Promotion of Cycling & Walking	NCC & PSB Sustainable Travel Group	Not known	Not known	Uptake of active travel over conventional travel	36 µg/m3 or better at AQO breach location				All	Low	Months
8	Tackle illegal parking throughout the city to prioritise walking, cycling and public transport	Traffic Management	Parking Enforcement on Highway	NCC	Ongoing			36 µg/m3 or better at AQO breach location				All	Medium	Months

Measure No.	Measure	EU Category	EU Classification	Lead Authority	Planning Phase	Implementation Phase	Key Performance Indicator	Target % Pollution Reduction in the AQMA	Progress to Date	Estimated Completion Date	Comments	AQMA to which measure applies (All or named)	Cost (High,Med,Low) or est. amount	Time to implement (Months, Years)
9	On Street Bike Hire	Promoting Travel Alternatives		NCC / PSB Sustainable Travel Group				36 µg/m3 or better at AQO breach location				All	Medium	Months
10	eRCV roll out	Promoting Low Emission Transport	Public Vehicle Procurement - Prioritising uptake of low emission vehicles	NCC	Completed	Ongoing	Equivalent fuel emissions saved	36 µg/m3 or better at AQO breach location	7 eRCVs to date	2024		All	High	Years
11	NCC EV roll out	Promoting Low Emission Transport	Public Vehicle Procurement - Prioritising uptake of low emission vehicles	NCC	Ongoing	Ongoing	Equivalent fuel emissions saved	36 µg/m3 or better at AQO breach location	Fleet transformation ongoing			All	Medium to High	Years
12	Air Quality Groups	Public Information/Policy & Guidance	Local Groups	NCC	2020	2021	AQO compliance	36 µg/m3 or better at AQO breach location	All Groups set up and active	n/a	Groups central to local Aire Quality projects	All	Low	Completed
13	Maintaining and adding to open space tree cover in public realm	Transport Planning & Infrastructure	Other	NCC	Not known	Not known	Percentage increase in cover	36 µg/m3 or better at AQO breach location	Not known			All	Low to Medium	

Measure No.	Measure	EU Category	EU Classification	Lead Authority	Planning Phase	Implementation Phase	Key Performance Indicator	Target % Pollution Reduction in the AQMA	Progress to Date	Estimated Completion Date	Comments	AQMA to which measure applies (All or named)	Cost (High,Med,Low) or est. amount	Time to implement (Months, Years)
14	Real Time Sensor AQMA coverage	Public Information/Traffic Management	Other	NCC - SM	2022	Ongoing	Full coverage for AQMAs	36 µg/m3 or better at AQO breach location	All AQMAs with coverage.	2022	Ongoing measure	All	Medium	Years
15	Green City Centre Infrastructure Project	Transport Planning & Infrastructure	Other	NCC	2023		Introduction of further GI	36 µg/m3 or better at AQO breach location	Ongoing	Not known		Chepstow Road & George Street	Medium to High	Years
16	ECO Stars refresh	Public Information/ Traffic Management	Other	NCC	2023/24	Completed	New uptake of scheme and fuel savings	36 µg/m3 or better at AQO breach location	Commissioned	2024		All	Low	Months
17	HGV AQMA Routing Guidance	Public Information/ Traffic Management	Other	NCC	2023/24	Completed	Haulier awareness of AQMAs	36 µg/m3 or better at AQO breach location	Commissioned	2024		All	Low	Months
18	Potential creation of 2 lanes carriageway + active travel where previously 4 lanes	Traffic Management	Reprioritising road space	NCC			Improvement of air quality adjacent to highway	36 µg/m3 or better at AQO breach location				George Street	High	Years
19	Maindee Project	Greening and reprioritising local centre traffic	Other	Maindee Unlimited	Ongoing	Subject to funding of Maindee Unlimited	Traffic calming and green infrastructure	36 µg/m3 or better at AQO breach location	Design concept	Not known	Not known	Chepstow Road	High	Years

							improvements							

Measure No.	Measure	EU Category	EU Classification	Lead Authority	Planning Phase	Implementation Phase	Key Performance Indicator	Target % Pollution Reduction in the AQMA	Progress to Date	Estimated Completion Date	Comments	AQMA to which measure applies (All or named)	Cost (High,Med,Low) or est. amount	Time to implement (Months, Years)
20	Roadvent system research & trialling	Traffic emission management	Other	NCC	Ongoing	Feasibility considered	Air Quality Objective compliance	36 µg/m3 or better at AQO breach location	Research Funding bid unsuccessful	n/a	n/a	Caerleon	High	Years
21	Green Barrier Caerphilly Road	Traffic emission management	Other	NCC			Air Quality Objective compliance	36 µg/m3 or better at AQO breach location	Initial grant bid unsuccessful	Not known	Design acceptable to NCC and WG needs to be sought	Caerphilly Road	Medium to High	Years
22	Wall reduction opposite 5 Cefn Road at Canal	Traffic emission management	Other					36 µg/m3 or better at AQO breach location				Cefn Road		
23	20mph contributions to Air Quality	Traffic Management	20mph Zones	Welsh Government	Ongoing	Ongoing	Safety and air quality figures	36 µg/m3 or better at AQO breach location	Pending for September 2023	2023		ALL (except Caerleon)	Not known	Years
24	5% EV increase in overall fleet	Fleet transformation	Other	Everyone	Ongoing	Ongoing	Percentage fleet composition	36 µg/m3 or better at AQO breach location	Ongoing	Not known		All		
25	Planning requests in respect of air quality measures	Policy Guidance and Development Control	Air Quality Planning and Policy Guidance	NCC	Ongoing	Ongoing	Development with air quality measures	36 µg/m3 or better at AQO breach location	Ongoing	Ongoing	Planning conditions are living documents	ALL	Low, Medium, High	Years

Measure No.	Measure	EU Category	EU Classification	Lead Authority	Planning Phase	Implementation Phase	Key Performance Indicator	Target % Pollution Reduction in the AQMA	Progress to Date	Estimated Completion Date	Comments	AQMA to which measure applies (All or named)	Cost (High,Med,Low) or est. amount	Time to implement (Months, Years)
26	School Streets opportunities	Promoting Travel Alternatives	Intensive active travel campaign & infrastructure	Sustrans	Ongoing	Ongoing	Uptake of active travel alternative and scheme	36 µg/m3 or better at AQO breach location	Ongoing	Ongoing		ALL	Low	Months
27	School-run walking train hub opportunities	Promoting Travel Alternatives	Intensive active travel campaign & infrastructure	NCC & others	Initiated			36 µg/m3 or better at AQO breach location				ALL	Low	Months
28	Schools air quality education resources	Public Information	Other	NCC	Initiated		Embedding of air quality learning withing school community	36 µg/m3 or better at AQO breach location	Initial scoping			ALL	Low	Months
29	Anti idling schemes	Public Information/Traffic Management	Information and enforcement	NCC	Ongoing	Mixed	Reduction in idling	36 µg/m3 or better at AQO breach location	Mixture of sites proactively doing anti idling	Not known		ALL	Low/Medium	Years/Months
30	Embedding GI in new projects	Infrastructure	Other	NCC	Ongoing	Mixed	Increase in GI across Newport	36 µg/m3 or better at AQO breach location	Mixture of sites proactively	Not known	Site by site basis through proactive and reactive means	ALL	Low/Medium	Years/Months
31	School air quality monitoring initiative	Public Information	Other	NCC	Initiated	Ongoing	Embedding of air quality learning	36 µg/m3 or better at AQO	LAQM grant obtained for	2024	School visits from	ALL	Low	Months

							withing school community	breach location	project across all Newport Schools		project officer pending			
32	School travel plans for all AQMA schools	Promoting Travel Alternatives	School Travel Plans	NCC	Initiated	Ongoing	Uptake and delivery of travel plans	36 µg/m3 or better at AQO breach location	LAQM grant obtained for project across all Newport Schools	2024	School visits from project officer pending	ALL	Low	Months

Glossary of Terms

Abbreviation	Description
Active Travel	Clean / healthy alternatives to using transportation which produces emissions e.g., walking, cycling, electric buses.
Air Quality Action Plan	A plan produced where an AQMA has been declared. This explains what measures can be adopted within AQMAs to reduce prevailing emissions to compliance with an air quality objective.
Air Quality Objective	The limit level for an atmospheric pollutant set by Government for which compliance is sought e.g. 40 µg/m3 for NO2 annually.
Annual Progress Report	A report which is produced annually which describes the air quality observed over the previous 12 month calendar period of monitoring; any trends observed and any action/measures which contributed to reducing emissions.
AQAP	Air Quality Action Plan - A detailed description of measures, outcomes, achievement dates and implementation methods, showing how the local authority 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
AQS	Air Quality Strategy
ASR	Air quality Annual Status Report
Defra	Department for Environment, Food and Rural Affairs
Dispersion Modelling	Computer modelled assessment of what future pollutant levels may be at receptor locations based upon a base year's data e.g. 2019 and 2022.
Emissions from new development	Emissions from traffic and plant during construction and operational phases of new development. This can include boiler systems and backup generators.
EU	European Union
Green Infrastructure	Plantings and park areas within urban and sub urban areas. Some may be specifically provided for air quality benefits.
LAQM	Local Air Quality Management

NO_2	Nitrogen Dioxide
NO_x	Nitrogen Oxides
PM_{10}	Airborne particulate matter with an aerodynamic diameter of 10µm (micrometers or microns) or less
$PM_{2.5}$	Airborne particulate matter with an aerodynamic diameter of 2.5µm or less
Source Apportionment	Identifying the contribution each vehicle type makes to the overall pollution levels observed for a given traffic survey area
Street Canyon	Regions where continuous buildings on each side of a road form a canyon within which pollutants are able to build up before being to disperse
Transport Emissions	Emissions from road traffic. Railway and Air transport is not included.
µg/m3	Microgrammes per meter cubed is the unit which used for each air quality objective and is how many microgrammes of pollutant a cubic meter of air would contain.

References

Sustainable travel strategy 2019

Climate Change Plan 2022

Newport City Council ANPR Report, AECOM 2022 V1

Newport City Council Source Apportionment Report, AECOM 2022 V2

LAQM.TGN 16

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Caerleon Option and Sensitivity Report, AECOM 2017

Chepstow Road AQMA Source Apportionment and Transport Intervention Study, AECOM 2015

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