Response to Cheltenham Borough Council's 2022 Draft Air Quality Action Plan

Clean Air Cheltenham
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SUMMARY

Clean Air Cheltenham considers Cheltenham Borough Council's (CBC) Draft Air Quality Action Plan (AQAP) 2022 to be woefully lacking in ambition, and bereft of any concrete actions that would significantly reduce air pollution. As a result, CBC appears indifferent to the health threats posed by air pollution in Cheltenham.

Whilst CBC accepts that transport is by far the biggest single factor in air pollution levels, there are no tangible proposals that will have any significant impact on vehicle levels within the town.

CBC also accepts the danger to health from particulates, but

- has no reliable data for this type of pollutant
- has not set a target for reduction of $PM_{2.5}$ levels
- does not have any specific measures proposed to reduce local levels of $PM_{2.5}$;

CBC has also failed to make any impact on Nitrogen Dioxide pollution levels since the first AQAP in 2014 (once the lockdown effect is discounted). Many other councils have made significant improvements in this period.

We discuss the reasons for the failure of the previous AQAP in detail in Appendix 1.

In summary, of 17 measures/objectives proposed in that first AQAP, none had any potential (by their own assessment, not ours) to reduce Nitrogen Dioxide levels by more than 1%. The majority of the measures were assessed at having the potential impact of less that 0.1% . Hardly any of the measures have been completed after 8 years. Many were simply abandoned, or left in "we're still thinking about it" limbo.

On the evidence of the Council's performance on the 2014 AQAP, and the contents of the Draft 2022 AQAP, we are about to repeat the same charade of an 'Action' Plan which has hardly any specific proposals, none of which will have any significant impact on pollution.

Despite the delay in reaching this stage – this new AQAP should have been prepared by the end of 2020, according to DEFRA guidance – the 2022 AQAP should be rejected by full Council as inadequate.

Its contents are so threadbare in terms of practical steps to tackle air pollution, that it cannot be adopted. Further delay while a much revised version is developed is preferable to rubber stamping something that is so lacking in ambition compared to what other local councils are achieving.

The people of Cheltenham deserve so much better than this.

Air quality in Cheltenham

Before responding specifically to CBC's Draft AQAP, it is helpful to remind ourselves of the key issues and establish some benchmarks. The two pollutants of most concern are Nitrogen Dioxide (NO_2) and small particulates ($PM_{2.5}$).

There are legal limits in the UK for these two pollutants, shown in the table below. In September 2021, the World Health Organisation published new recommended limits for exposure which are significantly lower. The UK Government recognises that the current legal limits are much too high on health grounds – and is currently reviewing what they should be.

	Current UK legal limit	WHO recommended limit
Average annual exposure to Nitrogen Dioxide	40 ug/m3	10 ug/m3
Average annual exposure to $PM_{2.5}$	25 ug/m3	5 ug/m3

What are the levels of Nitrogen Dioxide pollution in Cheltenham?

NO_2 is primarily measured by CBC using diffusion tubes, which give a monthly average reading.

As discussed in Appendix 1 of this document, and also shown in the Draft AQAP 2022, several locations in Cheltenham have consistently exceeded the UK limit for Nitrogen Dioxide from the start of monitoring in 2011 up until the end of 2019.

However the data for NO_2 for 2020 and 2021 shows a significant fall to under the 40 ug/m^3 legal limit. In its AQAP and the Annual Status report, CBC attributes this to changing traffic volumes and patterns due to lockdowns.

This is likely to be a factor – but it should also be noted that from 2020 onwards there has been a sudden shift in the 'bias correction factor' applied to data from the NO_2 diffusion tubes. This is a factor derived from comparing the results from 3 diffusion tubes co-located with a 'reference' monitor, to the results from that reference monitor. For the previous 9 years of data recording, the correlation between the three co-located diffusion tubes, and the reference monitor has been very close, typically around 1:1. But in 2020, the bias correction factor suddenly changed to 0.89 – which had the effect of reducing the published levels for the year by 11%.

The manufacturer of the diffusion tubes – which supplies and analyses diffusion tubes for almost every council in the country – has reported no changes to its processes which would result in such a change. So it is certainly possible that it is the reference monitor which has changed, as it is now quite old. There have been several reports in the air quality industry press about anomalies in performance from 'reference' monitors managed by DEFRA or local councils.

CBC does not check any of the raw data from the reference monitor. They only receive a 'monthly digest'. Because of this, it says it cannot supply the raw data to Clean Air Cheltenham for us to check on their behalf.

So it is fair to conclude that in the most polluted areas of Cheltenham, levels of NO_2 pollution in future years may well still be close to, or above, the 40 ug/m_3 legal limit, given the uncertainty around the impact of lockdowns, a degree of inherent uncertainty in any NO_2 monitoring technology; and the question mark over the unexplained sudden change in the bias correction factor.

But the bigger picture is: **virtually every citizen of Cheltenham is exposed to levels of Nitrogen Dioxide much higher than the World Health Organisation recommended annual limit**.

What are the levels of $PM_{2.5}$ pollution in Cheltenham?

CBC has no reliable data on particulate pollution in Cheltenham, as admitted in both the 2022 Draft AQAP, and also the latest Annual Status Report.

Some of the reasons for this data gap are explained in Appendix 2: 'The AQ Mesh monitors debacle'.

This is a critical problem, as it is now widely recognised that small particulates are even more dangerous for human health than NO_2.

However, there is some reliable data available on $PM_{2.5}$ pollution levels in Cheltenham.

Leckhampton with Warden Hill Parish Council has been operating two Purple Air particulates monitors for nearly 3 full years at two suburban locations in Leckhampton. Clean Air Cheltenham also operates a third Purple Air monitor on St Paul's Road. Results from this monitor have not been included below, as it has only been running since late 2021.

Purple Air monitors use laser particle detection, and have been subjected to extensive accuracy testing. Multiple reports have demonstrated that they are as accurate as any higher cost reference monitors using different sensing technologies.

They record $PM_{2.5}$, PM_1, and PM_{10} at 1 minute intervals and can report averages for a range of time periods from 10 minutes to a day. The data is available for anyone to download, at https://map.purpleair.com/

The table on the following page is based on daily averages, grouped into monthly averages.

Monthly average $PM_{2.5}$ levels in Leckhampton Road and Church Road, 2020 to 2022

	2020: Monthly averages PM2.5 ug/m3		2021: Monthly averages PM2.5 ug/m3		2022: Monthly averages PM2.5 ug/m3	
	Leckhampton Road	Church Road	Leckhampton Road	Church Road	Leckhampton Road	Church Road
January	11.21	11.96	13.99	16.26	18.25	20.26
February	5.07	6.30	10.96	13.04	3.59	5.06
March	11.55	13.35	15.79	17.57	18.99	21.32
April	15.72	17.14	13.83	14.95	11.67	12.67
May	8.85	10.01	5.12	5.82	8.33	9.19
June	7.58	8.26	10.43	11.23	6.18	6.74
July	3.85	4.76	9.91	10.44	5.53	6.18
August	9.95	10.17	6.57	6.96	6.11	7.27
September	7.67	8.79	10.27	11.02	5.56	6.80
October	7.11	8.22	6.41	7.64		
November	14.85		11.59	12.95		
December	13.08	13.40	8.05	9.56		
Average	**9.71**	**10.22**	**10.24**	**11.45**	**9.36**	**10.61**
Number of days >25 ug/m3	10%	11%	7%	8%	10%	11%

Data is not yet complete at the time of writing for the 4th quarter of 2022.

Winter months tend to have higher average readings than summer months, mainly due to weather conditions trapping pollution closer to the ground, but also due to wood and coal burning in fires and stoves.

Because of this, the 2022 yearly averages are likely to be slightly higher than 2021, which in turn were slightly higher than 2020.

These two monitor locations are on suburban roads, where levels of Nitrogen Dioxide pollution are approximately half that of the town centre. There is (as noted in CBC's AQAP and ASR) some correlation between levels of particulate pollution and nitrogen dioxide pollution.

This means that some residents on busier roads will be exposed to levels of $PM_{2.5}$ much higher than this. And **even in suburban areas of Cheltenham, the level of $PM_{2.5}$ pollution is over twice the World Health Organisation's recommended limit**.

Background to the Council's new draft AQAP

Local councils have a legal requirement to produce an Air Quality Action Plan with measures to improve local air quality over a 5 year period. A Plan expires after 5 years, and a new one must be produced.

Cheltenham's previous Air Quality Action Plan expired in 2019. Questions chasing the preparation of a new AQAP were asked at the

- January 2020 Cabinet meeting,
- the February 2021 Council meeting,
- then again at the April 2021 Cabinet meeting.

As a result of the Clean Air Cheltenham question in April 2021, a Steering Group was set up and a meeting called (within a week of our question…), to which Clean Air Cheltenham was invited.

This meeting, chaired by Cllr Max Wilkinson, was framed as a request for input from a range of stakeholders. Clean Air Cheltenham responded in May 2021 with a comprehensive plan for the key measures required to make a significant impact on air quality. Our report (available here) consisted of measures that are proven in different towns and cities across the UK. We also pointed out how the proposed actions were all completely aligned with the Council's Net Zero ambition – indeed, it would be impossible to get close to the Net Zero ambition without enacting all the measures proposed.

Clean Air Cheltenham had no response to its detailed submission, nor has been invited to any meeting subsequent to the initial meeting in April 2021, to discuss its proposals.

Cllr Wilkinson's timetable was to publish a draft of the new AQAP in autumn 2021. This did not happen, and in communication with Clean Air Cheltenham, Cllr Wilkinson said the proposed draft he was shown in autumn 2021 was not ambitious enough and he had rejected it.

Clean Air Cheltenham then asked at the February 2022 Cabinet meeting when the draft would eventually be published. Cllr Wilkinson's answer, was:
"The final document will include two sections: a formal Air Quality Action Plan (AQAP) which covers the Air Quality Management Area (AQMA), and a section covering our town-wide approach. The formal AQAP will focus on an area which follows a road corridor from St George's Street to the junction of Tewkesbury Road with Gloucester Road. The publication of this document for consultation is imminent.

I specifically requested that publication of the new AQAP and ***the wider strategy*** (our emphasis) *should take place simultaneously, following discussions with the questioner [Peter Frings} and Clean Air Cheltenham. This was to avoid giving any false impression that the Council's focus for improved air quality was solely in relation to the AQAP area. Indeed we are undertaking significant air quality monitoring across the wider borough.*

I anticipate that ***both documents*** (our emphasis) *will be published before the end of March 2022."*

The Draft AQAP is dated October 2022 – but Clean Air Cheltenham only received formal notification of its publication on 4th November 2022.

There is only one document, the Draft AQAP.

There is no wider strategy for significantly improving air quality town-wide. The Draft AQAP does contain reference to previously published plans, such as the Connecting Cheltenham document. But this has been languishing untouched since its publication in 2018. (Connecting Cheltenham is a typical CBC 'strategy document' – full of worthy broad objectives, but a complete absence of any practical plans to actually do anything.)

An effective Council would have been working on a new AQAP as the previous one expired, and would have had detailed proposals ready in 2019 or early 2020 at the latest.

Instead, Cheltenham Borough Council has prevaricated for over 3 years – and as we shall discuss below, at the end of 3 year delay, produced a document with virtually no concrete proposals of any significant impact.

Further evidence of CBC's disinterest is that responsibility for air quality has been passed around from Cabinet member to Cabinet member like an unwanted pass-the-parcel. There have been at least 3 different Cabinet members holding responsibility for air quality in just over 2 years. (Councillors McKinlay, Wilkinson and Horwood.)

Our comments on the 2022 Draft Air Quality Action Plan

We have noted in Appendix 1 (*The Council's track record on tackling air pollution*), that CBC's previous AQAP in 2014 contained no measures with any potential to have any noticeable impact on air pollution; and that as an inevitable consequence, air quality did not improve in any significant way.

This criticism could be applied with equal force to the Draft 2022 AQAP.

In the previous 2014 AQAP, there were a lot of objectives/measures around 'encouraging' behaviour change – but nothing tangible or concrete that would actually facilitate any behaviour change in how people travel around.

In a repeat of the 2014 AQAP, again there is almost no actual alternative provision – beyond installing a small number of EV chargers in car parks.

The reality is that most local people would love to walk and cycle more – but until it is safe to do so, or there is reliable and affordable public transport, they are forced to use their cars for short trips. People don't need to be 'enouraged' to cycle more – they just need the provision of a connected network of safe, direct cycle routes. Until this provision is made, people's transport choices won't change.

The Draft 2022 AQAP is correct in its diagnosis that cars, vans and trucks are by far the largest contributor to both Nitrogen Dioxide and particulate air pollution. But the AQAP refuses to grasp the nettle and propose anything concrete that would actually reduce traffic numbers.

There are some potentially interesting measures floated in the AQAP – for example:
16: *Work with Gloucestershire County Council (GCC) to explore the viability of Car-free zones and/or Emissions Charging Zones*.
17 (and 19): *Support GCC to deliver modal shift away from private cars, improvement in Cheltenham's walking and cycling routes by considering closure of certain town centre roads to certain vehicle types*.

But both of these measures remain as loose aspirations, heavily caveated with reasons why CBC might not proceed, and "*require further investigative work*"

Along the same lines, the 'Twenty is Plenty' (Measure 20) is exhumed again, **having been under consideration for 8 years** since it was first mooted in the 2014 AQAP.

In the Draft 2022 AQAP it is still in the 'Planning' Phase, and the Cabinet working group are "still awaiting better guidance on the benefits and implementation".

Why haven't councillors got off their backsides at any point since 2014, visited some places that have introduced 20mph speed limits, done their own research, and made a decision? If they haven't been able to do this in the past 8 years, why should we have any confidence that they will be able to draw up a concrete plan and make a decision in the next 5 years?

For this reason we have no confidence that any of the few proposals that could tackle air pollution through reducing traffic, will ever progress beyond the preliminary exploration stage.

The second broad criticism we would make is that the few tangible proposals in the AQAP that might actually be implemented, all centre around promoting EV usage. This is an objective we would support on some grounds (reducing carbon emissions and Nitrogen Dioxide pollution)– but it does very little to reduce particulates emissions.

And focussing on getting people to switch to EV vehicles does nothing to promote the over-riding necessity of getting people to switch to truly sustainable forms of transport – walking and cycling.

So our criticism of the measures in the 2022 AQAP is that it repeats the mistakes and failings of the 2014 AQAP: all talk, exploration and nothing of any substance that is tangible and will move the dial on air pollution.

But to be thorough, we have included below some brief comments on each measure in the 2022 AQAP.

Measures specific to the AQMA

Measure	Comment
Engage with Royal Mail to move towards low emissions fleet	This was first discussed 2 years ago as an action addressed specifically at one part of the small AQMA. Since then "an initial meeting has taken place, further engagement is planned". One initial meeting in two years doesn't bode well for any future urgent progress…
Commission a study to understand purpose of car trips	Then what? The history of CBC is littered with studies that gather dust, e.g. Connecting Cheltenham…
Traffic light changes in vicinity of AQMA	Negligible impact on air pollution levels. Increasing traffic flow in one area tends just to move the congestion elsewhere.
Create a public health awareness campaign about air pollution	No detail on budget, how many people will be contacted, when it will happen. Public awareness is all well and good… but people know the issues, they want the alternative provision that enables them to make other transport choices.
Engage with local NHS Trust to raise awareness of poor air quality	As above.
Ensure that the planning and design of the Golden Valley development sets a standard for high air quality	Zero detail about what this means in practice.
Develop partnership for last mile delivery in town, by sustainable transport.	An objective we fully support… but zero practical detail.
Offer more EV charging points in the streets surrounding the AQMA	Estimated to have minimal impact on air pollution. With GCC for on-street charging, no sites identified.
Extend the existing priority parking areas for EV vehicles within parking areas of AQMA	Estimated to have minimal impact on air pollution. Implementation might happen in 2026…
Install rapid charging points for electric vehicles	Good objective, but minimal impact on air pollution. No new sites identified.
Increase car-sharing in AQMA	This has been on the list of measures since 2014 with no action. Minimal impact on air pollution.

Measures for consideration (our emphasis) **as part of wider Air Quality Strategy**

Measure	Comment
Continue to review and develop the Air Quality Strategy for the Borough	Can't object to this… but if it has taken since 2019 to get to this Draft AQAP, then we need to see far greater urgency and commitment from CBC than they have shown so far
Aspire to reduce the levels of NO_2 below 40 ug/m^3	An aspiration which needs practical proposals. **The objective should be the WHO limit of 10 ug/m^3**
Investigate setting targets for $PM_{2.5}$ and PM_{10} in line with WHO guidance and emerging DEFRA requirements.	The WHO requirements are known. What investigation is needed?
Deliver a Schools AQ project	All in favour of public awareness campaigns – but as noted above, that isn't the need. The need is for alternative provision to private car transport.
Work with GCC to explore the viability of Car-free zones and/or Emissions charging zones.	We fully support this – but we need to see more commitment that just an exploratory meeting with GCC that should have taken place several years ago…
Support GCC to deliver a modal shift away from private cars, improvement in walking and cycling by considering closure of certain town centre roads to certain vehicle types	We fully support the objective of a modal shift through providing an extensive cycling infrastructure to Dutch and Danish standards. Zero detail about how CBC will work with GCC to make this happen.
Support GCC in delivering Arle Court as an expanded transport hub.	Estimated to be in planning phase until 2026, when we will presumably find out the detail?
Support GCC to promote cycling infrastructure in line with Severn Vale Cycling and Walking Infrastructure Plan	This plan does not contain any detailed proposals for the network of safe, segregated cycle lanes that are needed to connect up within Cheltenham. Instead it focusses on 3 supposed 'desire lines' in and out of Cheltenham. This misses the point of best practice cycle planning: you create the network of cycleways within a town first and only later look at the longer distance routes.
Twenty is Plenty'	Already under consideration – with no action – for 8 years.
Continue to implement alternative fuel sources for the council's business fleet	Switching to biofuel on a small number of vehicles has no impact. EV would be better, but again, only a small number of vehicles are involved, so a good objective, but one that does not have any significant impact.
Phase out around 500 Euro V and older Taxis and replace with Euro VI	Again, an objective which is useful, and would reduce NO2 emissions from 500 vehicles, when implemented. But it would not reduce particulates. CBC warns that this will not be implemented until 2027 (at the earliest)
Install charging points at Taxi Ranks	Impact estimated to be minimal due to the comparatively small number of vehicles, but a useful step. However CBC warns that very few taxi drives will switch to EV in the foreseeable future, and hence have not put an estimated completion date on this measure.
Promote Workplace Travel Plans	This involves CBC introducing a Cycle to Work Scheme (something that most employers have offered their staff for at least 10 years – the scheme was first introduced in 1999…)

Measure	Comment
Promote a no-idling policy for Taxis and buses	A good objective which we support; albeit one which does nothing to reduce the number of cars, but may have a small but positive impact on pollution levels in some local areas of congestion.
Apply variable parking charges to incentivise EVs and hybrids.	No detail, still at initial investigation stage.
Expand air quality monitoring using AQ Mesh monitors and publish results on an accessible website	AQ Mesh monitors don't produce reliable results, (see Appendix 2 of this document).
Emissions policy for private hire vehicles	A new policy is 'in the process of being developed'. Nothing concrete in terms of dates.

APPENDIX 1: The Council's track record on tackling air pollution

A major omission from the Draft AQAP 2022 is any attempt to learn lessons from the previous 2014 AQAP, which covered the period 2014 to 2019.

It is perhaps an understandable that CBC didn't want to do this, given that no meaningful measures were ever actioned from the 2014 AQAP – and as a result there was no statistically significant change in pollution levels over the 5 year period of the old AQAP.

By contrast, other councils all over the country have achieved reductions in NO_2 of the order of 20% to 40% over recent years (e..g. Oxford City Council achieved a decline of 37% in NO2 levels over the period 2008 to 2018.)

First, let us look at the data on air pollution here in Cheltenham:

Nitrogen Dioxide levels 2011 to 2019.

The table and chart below compares NO_2 levels, as measured by CBC's diffusion tube monitors, at 8 sites across the town, over the period 2011 to 2019.

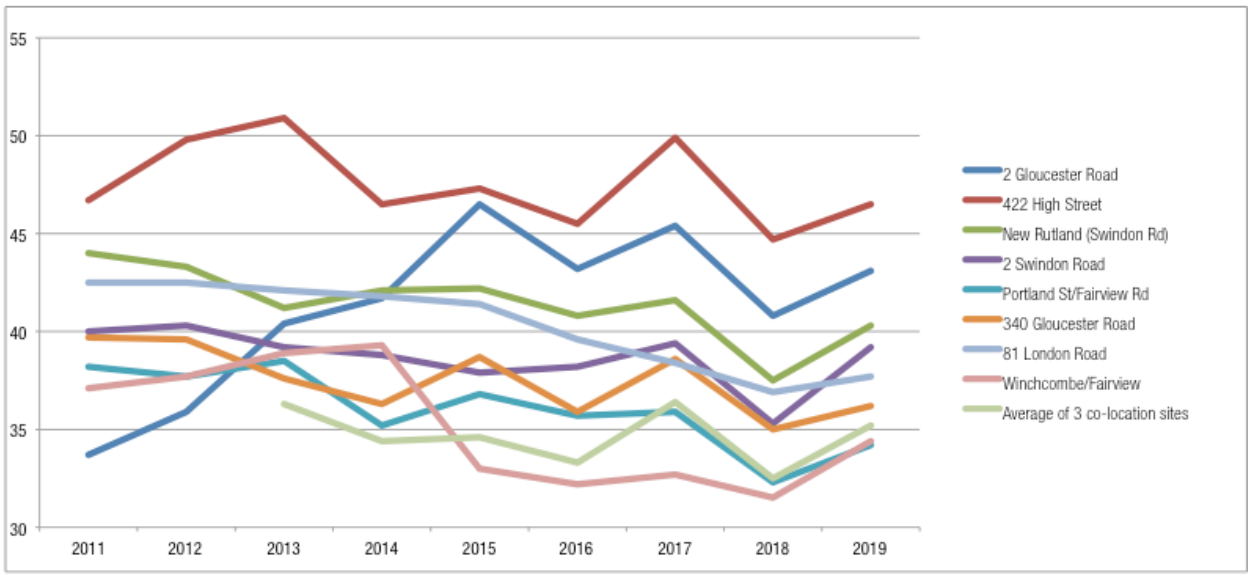
The 8 sites shown have not been 'selected' in any way – they are the only 8 sites that CBC has consistently monitored over this period. We have also shown the average reading of the 3 diffusion tubes sited at St Georges Street/Swindon Rd, where they are co-located with the reference monitor. This site has only been producing full data since 2013.

CBC data for NO_2 ug/m^3, 2011 through to 2019

	2011	2012	2013	2014	2015	2016	2017	2018	2019
2 Gloucester Road	33.7	35.9	40.4	41.7	46.5	43.2	45.4	40.8	43.1
422 High Street	46.7	49.8	50.9	46.5	47.3	45.5	49.9	44.7	46.5
New Rutland (Swindon Rd)	44.0	43.3	41.2	42.1	42.2	40.8	41.6	37.5	40.3
2 Swindon Road	40.0	40.3	39.2	38.8	37.9	38.2	39.4	35.3	39.2
Portland St/Fairview Rd	38.2	37.7	38.5	35.2	36.8	35.7	35.9	32.3	34.2
340 Gloucester Road	39.7	39.6	37.6	36.3	38.7	35.9	38.6	35.0	36.2
81 London Road	42.5	42.5	42.1	41.8	41.4	39.6	38.4	36.9	37.7
Winchcombe/Fairview	37.1	37.7	38.9	39.3	33.0	32.2	32.7	31.5	34.4
St Georges St (co location site)			36.3	34.4	34.6	33.3	36.4	32.5	35.2

11 months data only | 10 months data only | no data or less than 10 months data

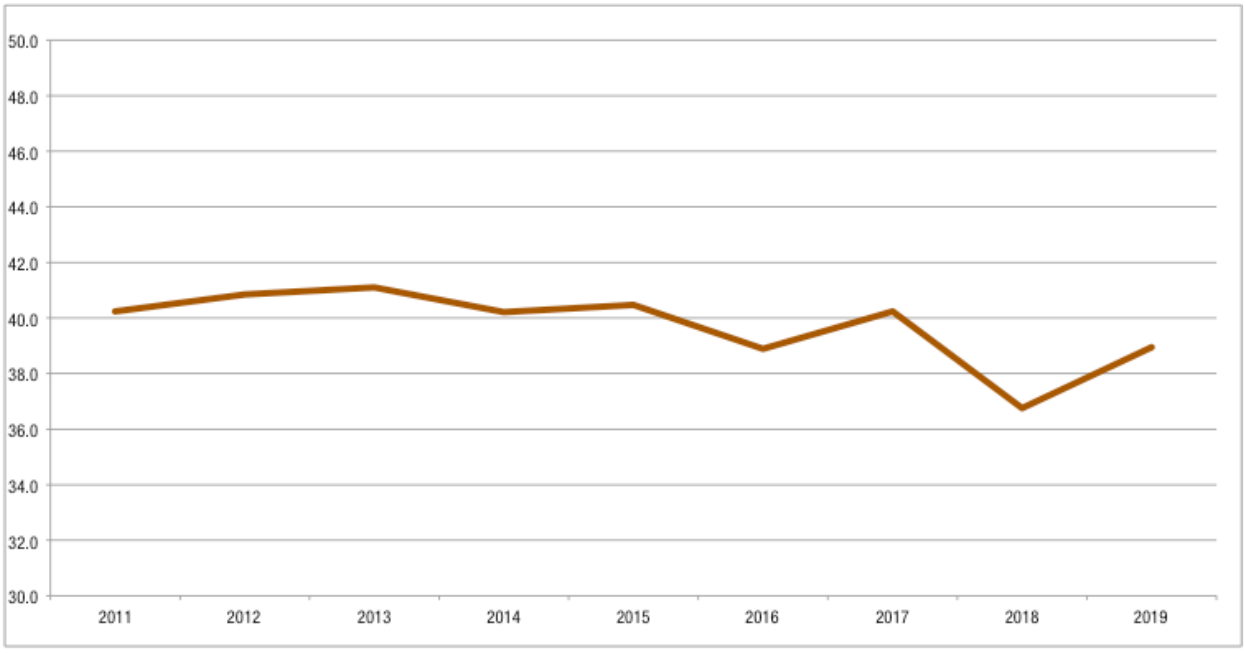
Figures highlighted in red are above the annual 40 ug/m^3 legal limit.



We can see the essentially static levels of air pollution in the town centre by looking at the average readings across the 8 sites for which there is full data for the 9 year period. (Data for the 3 co-location sites only exists for 7 years.)

CBC data for NO_2 ug/m^3, 2011 through to 2019, averaged across 8 town centre sites.

	2011	2012	2013	2014	2015	2016	2017	2018	2019
Average of 8 town centre sites	40.2	40.9	41.1	40.2	40.5	38.9	40.2	36.8	39.0



The variance between 2011 and 2019 is only 1.2 ug/m^3 NO_2 – around 2.9%. This is within the margin of error of diffusion tube sampling. Bear in mind also that 12 out of the 72 data points (8 sites x 9 years) have some months where data is missing.

When looking at pollution data, DEFRA stresses that it is important not to look at a single year in isolation due to the influence of weather conditions.

The data shows that the average town-centre NO_2 levels for 2011 and 2017 were identical. There was a dip in 2018, but this was almost completely reversed in 2019.

Given the margin of error in diffusion tube monitoring, the issue of missing data from some of the monthly sampling, and the possible influence of weather conditions, the only conclusion is **that air pollution levels in Cheltenham have remained broadly static over the last 9 years**.

And that therefore **the 2014 AQAP had no impact on NO_2 pollution levels.**

If we now look at what was in the 2014 AQAP…

What progress has been made on the measures within the 2014 AQAP?

The 2014 AQAP contained 17 objectives or 'measures'. Against each one is an estimate of the likely impact of the objective. If we only include those measures that have been completed and where the measure had a forecast reduction in NO_2 greater than 0.1%, then you are left with the following:

Completed measures with an impact on NO_2 pollution >0.1%

Measure		Estimated impact on NO_2	Organisation responsible
Highways improvement	Junction changes at Albion Street and Imperial Sq to allow easier access to car parks	1 – 2%	Gloucestershire County Council

No wonder there has been no improvement in air quality – **only 1 measure with a potential impact of more than 0.1% has been completed in the 8 years since 2014**!

What the report on the 2014 AQAP doesn't mention, is that during this time there have also been a series of other highways 'improvements' over recent years (of which the West Cheltenham roundabout changes are just one example) designed to increase the flow of traffic into Cheltenham. And hence increase levels of pollution.

This is a truly shocking indictment of the ineffectiveness both Gloucestershire County Council and Cheltenham Borough Council with regard to improving air quality.

For the sake of completeness, let us look at the other measures that have been completed during this time period:

Completed measures with an impact on NO_2 pollution <0.1%

Measure		Estimated impact on NO_2	Organisation responsible
Business Travel Grants	132 local businesses were contacted in 2016/17 to raise awareness of parking enforcements and encourage a shift towards more sustainable modes of travel. Grants no longer available	<0.1%	Gloucestershire County Council
Wayfinding initiative	signage showing walking and cycling routes	<0.1%	Gloucestershire County Council
Cycle Safety improvements	Contraflow cycle lane on Sandford Mill Road.	<0.1%	Cheltenham Borough Council
Installation of AQ Mesh pods	more air pollution monitors	–	Cheltenham Borough Council

In addition, an Air Quality Planning Policy is described as 'adopted', and of unknown impact on air pollution, but at the same time it is noted that there is no specific policy on air quality in the Cheltenham Local Plan.

Earlier updates on the 2014 AQAP also reference the Boots Corner changes under the 'Highways Improvements' measure – but this measure was reversed.

So that is the sum total of the effectiveness of the 2014 AQAP:

- no measures proposed which had a potential impact greater than 1%
- only one measure with an impact greater that 0.1% has been implemented – but this has been counterbalanced by other highways measures which have increased traffic
- the aborted Boots Corner changes
- some exhortatory conversations with a small number of businesses
- erection of a small number of signs indicating walking and cycling directions
- one small stretch of painted cycleway (circa 100 yards) that doesn't connect with anything, has dangerous junctions at either end, and does not meet cycle infrastructure guidelines (being contra the traffic flow, with no segregation, and also unprotected against parked cars.)
- the delayed introduction of some new AQ Mesh monitors that have never worked (see following section on the debacle of the AQ Mesh monitors).

The danger is that we are about to repeat the same charade of an 'Action' Plan which has hardly any specific proposals, none of which will have any significant impact on pollution.

To give just one further example of CBC's predilection for continual talk rather than action: the 'Twenty is Plenty' measure (loose proposals to discuss a 20mph speed limit in areas of minor roads in the town) was listed in the original 2014 AQAP. Eight years later the status of this measure is *"the Cabinet working group are awaiting better guidance on the benefits and implementation"*

However, that has not prevented it from being moved forward to the Draft 2022 AQAP – where no doubt the Council will still be 'awaiting guidance' in 5 year's time.

What lessons should CBC learn from the failure of its 2014 AQAP?

The first lesson is rather obvious: **don't expect to see any changes in air pollution if the only measures proposed are ones which have negligible impact**.

Or to put it another way: don't pay lip service to how serious air quality is to the health of our local population – but then refuse to take the kind of ambitious steps that would make noticeable improvements.

CBC has long protested that it can't do anything itself regarding reducing pollution from traffic – because 'highways is a county council' responsibility.

But this is a nonsense. Local councils all over the country take initiatives and propose these to their County Councils, and persuade them to make them happen.

CBC did exactly this with the Boots Corner changes; the County Council responded, and enacted the proposal. Oxford City Council (Labour-controlled) is working well with its Conservative-controlled county council to make a wide range of ambitious transport changes. There are many other examples across the country.

The fallout from the way CBC mismanaged and mis-communicated the Boots Corner proposal seems to have made them

- terrified of suggesting anything that might provoke a reaction from a minority of motorists
- unable to repair their relationship with the Conservative-controlled county council.

This passivity and inertia is not acceptable. Our local representatives surely have one over-riding purpose: to strive to improve the lives of local residents. If that is the case, then CBC needs to:

- **urgently build a professional working relationship with the county council**
- **realise that it is CBC's responsibility to design and consult on specific proposals that will change people's choices towards more sustainable modes of transport.**

If it is not CBC's responsibility to work on the biggest single change that would improve the population's health and also the liveability of the town – the switch away from cars to public transport, walking and cycling – then whose responsibility is it? and what is the purpose of CBC otherwise?

APPENDIX 2: The AQ Mesh monitors debacle

The Council's air pollution monitoring programme has long been pretty threadbare compared to most other councils. It has just one 'reference' monitor measuring Nitrogen Dioxide (NO_2) in real-time, coupled with a shifting set of diffusion tubes which measure NO_2 as a monthly average.

CBC has been operating diffusion tube monitoring from 2011, typically around 40 tubes. But it only has consistent measurements from 9 locations across an extended time period.

In its annual Air Quality Status reports published in the latter half of the previous decade, the council noted that the evidence of the health impacts of particulate air pollution were now recognised as potentially having even more severe health impacts than NO_2 – and that to have no monitoring programme at all for particulates was a glaring gap that needed to be addressed.

The council also thought that because of its persistent failure over a 10 year period to get NO_2 pollution levels within the town centre below the legal limit of 40 ug/m^3, it should invest in more NO_2 monitors that could provide real-time information on pollution levels – rather than just the monthly averages which are all that diffusion tubes can offer.

As a result, it took the decision to invest in some new monitors (AQ Mesh) which purportedly could provide accurate real time information on both NO_2 and particulates ($PM_{1.0}$, $PM_{2.5}$, and PM_{10}).

At the January 2020 Cabinet meeting, Cllr McKinley announced that 9 new AQ Mesh monitors would be deployed in January 2020.

It turned out – in a typical CBC example of over-promising and under-delivery – that they didn't actually get deployed until September 2020.

Over 2 years later they still have not produced any reliable results. (The Draft AQAP 2022 admits *'no monitoring of $PM_{2.5}$ is completed by Cheltenham Borough Council'*; and the 2022 Annual Status Report refers to: *'… numerous failed and failing sensors…'* These were replaced; the new ones *'… were providing results of dubious accuracy…'* and *'… an error was found in the supplier's software which was skewing the results…'*.)

Clean Air Cheltenham has established (through communication with CBC officers and a FoI request) that:

- The NO_2 readings bear no correlation to the results provided by either diffusion tubes, or the St George's Street Reference Monitor for NO_2 (and also that the reference monitor and the diffusion tubes suddenly diverged from each other in 2020…)
- The particulates sensors in the AQ Mesh monitors continually produce **negative readings**!

To appreciate how bizarre these negative readings are, an analogy would be a traffic speed camera that records some cars going at **minus 5mph**. The proposed solution from the supplier of the monitors is to 'adjust' the readings by a software algorithm.

However, the sensors for particulates in the AQ Mesh monitor work by laser detection of particles at different sizes. From the number of particles detected, an estimate is made of the amount of

particulate matter (expressed as ug/m^3), by applying an estimate of the mass of the particle. (Because different size particles typically have different densities.) It is almost impossible to conceive of how a sensor can – as its starting point – record a negative number of particles in the air it is monitoring.

Imagine a court being asked to make decisions on whether someone has been speeding, if the speed camera recorded some people as travelling at a negative speed, then a correction was applied to make all the readings positive by applying a shift of an arbitrary amount…

Clean Air Cheltenham recognises that any council can get a procurement decision wrong – but the issue is that CBC is persisting with a technology that clearly doesn't work; and where it has not been possible to rectify the problems over a period of 2 years. At what point will CBC recognise this, cut its losses, recoup as much money as it can from the supplier, and invest in monitoring technologies that work?

For the money it has wasted on the AQ Mesh monitors, CBC could have had another 3 or 4 proven NO_2 reference monitors and a network of 15 to 20 low-cost Purple Air particulates monitors (tested and proved to be as accurate as reference particulates monitors costing 20 to 40 times as much).