Birmingham Friends of the Earth
54 – 57 Alison Street
Digbeth
Birmingham
B5 5TH

16 August 2018

Dear Sirs

Re Clean Air Zone Consultation

Birmingham Friends of the Earth welcomes the opportunity to respond to the above consultation. We are an environmental campaigning and educational organisation based in Birmingham, engaged with advancing the principles of environmental sustainability and positive environmental change with an emphasis on issues which affect Birmingham.

Our consultation has been based on feedback collated from two public meetings and members' strategy meetings. We have followed the headings given in the on-line consultation form as closely as possible although have omitted those sections which are not relevant. We have also submitted a response via the on-line form, and the substance of our views expressed in both versions are the same.

1. **About Our Organisation**
   We own and occupy a building located in Digbeth which is within the proposed CAZ charging zone. We let out parts of the building to a cafe, a cycle courier business, a bicycle shop and also as office space to other organisations. The building also has two small meeting rooms which we hire out to other organisations.

   Users and clients of the building generally arrive by public transport, walking, cycling or taxi.

2. We employ two staff members and additionally have volunteer workers. These generally travel to work by public transport or bicycle. Two of our regular volunteers have impaired mobility and are blue badge holders . They travel to and from our building by taxi or private car.

3. We do not own or operate any vehicles. However, we and our tenants receive regular deliveries by LGV. This is particularly the case with the cafe and the bicycle shop.

Introduction

Birmingham Friends of the Earth is pleased that Birmingham City Council is taking seriously its legal duty to protect the health of its citizens, workers and visitors from the harmful effects of air pollution by introducing a Clean Air Zone. The government forecast that Birmingham would still have, without further action, illegal levels of NO2 in 2024 (Annex K of the Detailed Plan https://www.gov.uk/government/publications/air-quality-plan-for-nitrogen-dioxide-no2-in-uk-2017).

We strongly support the introduction of a class D charging zone which includes cars in addition to buses, LGVs and HGVs. However, we would observe that the city council must introduce the CAZ D charging zone just as a starting point in order to progress towards legal compliance with the Defra and EU mean annual NO2 limit of 40µg/m^3. Air quality modelling studies commissioned by Birmingham City Council [Birmingham Clean Air Zone Feasibility Study - Air Quality Modelling Report, Jacobs, June 2018] show that on its own, the CAZ D charging zone will not be enough to achieve compliance just with this basic target and a package of additional measures comprising public transport improvements and modifications to the highway network will be necessary. Even then compliance will only be achieved by 2021.

We believe this state of affairs is totally unacceptable and exposes the public to damaging levels of NO2 for much longer than is necessary. The overriding aim should be to reach compliance by 2020 which will of course require tougher and more comprehensive action which will need to be taken more urgently. Thus, the charging zone should be implemented sooner, if technically possible and those additional measures which can be implemented in the short term brought forward. The city council should emphasise this to central government and press them to make sufficient funding available soon enough.

We would observe that the CAZ charging zone is really an ‘emergency sticking plaster’ to tackle a mounting public health crisis. It has been necessitated by a legacy of decades of under-investment in public transport and active travel measures, while highway design has generally been focused on accommodating ever increasing volumes of car traffic at increased speeds. Walking and cycling as a means of transport have therefore become increasingly marginalised, regarded by many as increasingly unsafe and unpleasant owing to heavier and higher speed traffic. We feel it is high time to redress the balance in Birmingham and create a substantial modal shift away from the private car.

Although we appreciate that the CAZ charging zone and the additional measures are a necessity, they should not be regarded as a tick-box compliance scheme. Strictly speaking the CAZ should be regarded as a ‘less dirty air zone’. Compliant petrol and diesel vehicles still emit pollutants. Concentrations of NO_2 of much less than 40µg/m^3 are still harmful to health according to evidence from the WHO. [Ref WHO http://www.euro.who.int/en/media-centre/sections/press-releases/2013/01/newly-found-health-effects-of-air-pollution-call-for-stronger-european-union-air-policies].

We are therefore pleased that the city council does not regard achieving compliance as an end in itself and that it aims to continue reducing NO2 down to levels substantially below compliance. Other pollutants particularly PM10 and PM 2.5 should also be taken into account as these are also as damaging to human health. While they do not exceed the Defra and EU limit values they do exceed the more stringent World Health Organisation guidelines in several parts of the city.

We wish to emphasise that the CAZ in its proposed form is only the start and there must be a continuing process of improvement in public transport and active travel

measures to bring about continuing improvement in overall air quality.

1. **The Area Covered by the CAZ**

We would like to emphasise that the proposed CAZ charging zone is just a starting point and that air pollution should be tackled on a city-wide basis. We believe that a Clean Air Zone, i.e an area of focus for measures to address air pollution, should be adopted for the whole city.

While we support the area of the proposed CAZ charging zone and agree that its boundary is logical, the air quality modelling [Birmingham Clean Air Zone Feasibility Study - Air Quality Modelling Report, Jacobs, June 2018] shows that the charging zone and the package of additional measures proposed will mean that harmful levels of NO2 will continue to exceed the annual mean legal limit values at many locations both within and outside the CAZ. In order to deliver full compliance, additional reductions in NOx of between 3 and 19% would still be required. and the city would not be compliant until 2021. We think that this state of affairs is totally unacceptable,particularly as BCC is required to achieve compliance as soon as possible. We therefore believe that BCC should urgently investigate various other options in order to meet this legal requirement and the whole city complies by 2020. These options may include looking at whether further areas of the city need to be covered by a CAZ charging zone. This could take the form of locally extending the Middleway boundary of the proposed charging CAZ to incorporate certain areas with exeedances of annual mean NO2 levels or introducing separate additional charging zones to cover specific districts or stretches of road which are similarly badly affected.

The bottom line is to achieve compliance as soon as possible which may require a CAZ charging zone covering additional areas of the city and/or a combination of bringing forward a much bolder package of additional measures comprising safe and attractive cycling and walking infrastructure, bus priority schemes and zero emission buses and implementing these as soon as possible. The exact combination of measures necessary to achieve compliance and the detail of the schemes is down to BCC to work out. But the overriding aim should be to reach compliance as soon as possible. 2021 is not soon enough.

There are many areas within Birmingham outside the proposed CAZ charging zone where annual mean concentrations of NO2 currently exceed the legal limit value of 40µg/m3. Air quality modelling indicates that these areas should experience reduced NO2 concentrations as the vehicle fleet is gradually replaced with lower emission vehicles. Most of these areas are predicted to become compliant by 2020, but a few outlying locations such as a stretch of the Chester Road near Castle Vale and a stretch of the Tyburn Road near Gravelly Hill Interchange will still experience exceedances.

The air quality modelling reports commissioned by BCC suggest that the CAZ in its proposed form and the proposed ‘additional measures’ pre-2020 should reduce traffic and air pollution on radial routes in areas outside the proposed charging CAZ as a result of reduced journeys into the city centre. However, these proposals, do not seem to provide enough certainty on achieving compliance. The requirements are that compliance must be likely not just possible.

In the longer term we believe that a variable road user charging scheme based on GPS should be considered to cover the whole West Midlands conurbation. This system could be based on transponders fitted in vehicles. Users would be

charged based on the emissions of their vehicle, and the time and distance of the journey. Charges could be set at a higher rate during peak hours or at times of poor air quality. This would be a far more precise tool for managing demand and therefore controlling air pollution than a cordon scheme based on ANPR cameras but this would be way off being able to be implemented and action is required immediately to bring levels of NO2 down to legal limits and protect health.

2. **The operation of the CAZ charging scheme**

We think that the charging mechanism for entering the CAZ should be modelled closely on the London Congestion Charge where drivers have to pay within 24 hours of having crossed the line. Many people are accustomed to this system which is now tried and tested. We do not think that payment should be required in advance of crossing the zone.

3. Types of vehicle included in the Clean Air Zone restrictions

We agree that all types of vehicles including cars must be included in the restrictions as per the Class D charging zone. We strongly support the charging of non compliant cars which enter the charging zone, as in Birmingham they account for 83 % of the traffic and over 50 % of the NOx emissions. If non compliant cars are not included in the charging regime, then progression towards compliance will not be possible.

We also believe that the restrictions should also apply to non-compliant mopeds and motor cycles whose engines are below the Euro 3 Standard.

The CAZ should require that vehicles actually meet prescribed requirements before being allowed to enter – a vehicle classified as Euro 6 diesel or Euro 4 petrol should emit no more in the real world than the standards (i.e. have Conformity Factors of 1). The Conformity Factor denotes the permitted divergence in emissions between the regulatory limit determined in the laboratory, and that measured during a RDE (Real World Driving cycle).

Charges should be set at a high enough level to deter the most polluting vehicles from entering the CAZ and generate behavioural change. We suggest that the charges should be within the maximum price ranges suggested in the consultation. The outcome should be to create substantial behavioural change whether this comprises cancelling journeys, transferring to public transport, walking or cycling or upgrading to a low or zero emission vehicle.

We understand that in 2016, 55% of cars in Birmingham were compliant which by 2020 is predicted to increase to 77% without the CAZ and 98% with the CAZ in place. As the proportion of non compliant to compliant vehicles reduces as vehicles are renewed or upgraded, there is a risk that the revenue from the scheme will dwindle to such an extent that it will no longer be financially viable to continue to enforce and maintain the CAZ. We therefore believe that the charging regime should be reviewed on a regular basis with a view to charging compliant vehicles with petrol or diesel engines which, although having lower emission are still adversely affecting air quality. We consider regular reviews of the charging regime to be necessary in order to drive continuous improvements in air quality.

4. **The Overall Impact of the Clean Air Zone**

The Clean Air Zone is likely to result in the increased well being of our workers, leading to reduced absenteeism and greater productivity. The health problems resulting from exposure to air pollution have a high cost

to people who suffer from illness and premature death, to our health services and to business. In the UK, these costs add up to more than £20 billion every year. [https://www.rcplondon.ac.uk/projects/outputs/every-breath-we-take-lifelong-impact-air-pollution]. The cleaner air and overall healthier environment would, we believe, result in more visitors to the city centre. Traffic free areas or pedestrianised streets to restrict vehicular traffic as well as improving air quality will also make for safer and more attractive areas people can visit, walk and cycle in. We do not think the implementation of the CAZ will have a significant and immediate effect on the running of our organisation other than an improved environment attracting more visitors to our building.

i. We expect the health of the city to improve significantly. However we consider that the improvement will not be significant if exceedances are only reduced just to tick the compliance box and are reduced just below the legal limit. Continuing action is necessary to continuously drive down the levels of NO2 to levels substantially below the annual mean limit value of 40 $\mu g/m^3$.

ii. We are concerned that small and medium enterprises located within the CAZ which have to use vehicles for their business operations or those whose vehicles have to regularly enter the CAZ may not be in a position to renew or upgrade their vehicles before 2020. In such cases we believe that some form of mitigation should be made available by central government such as a diesel scrappage scheme. We feel that although some businesses may suffer a financial hit in the short term, in the long term, businesses will reap the rewards of cleaner air in the form of healthier employees and therefore reduced sick leave and absenteeism.

iii. Birmingham as a city will become a more attractive place in which to live, work and study and should consequently attract more visitors. This will result in increased well-being and positive economic activity. Since air pollution tends to be worse in areas of high deprivation, disproportionately impacting less well-off people, measures to reduce air pollution will therefore proportionately provide more benefit for such communities thereby reducing spatial inequalities within the city. [Technical Report, Annex D, https://www.gov.uk/government/publications/air-quality-plan-for-nitrogen-dioxide-no2-in-uk-201]. The city will be also be healthier overall with reduced disparities in health. This may eventually be reflected in reduced pressure on health budgets as the occurrence of medical conditions which are triggered or exacerbated by air pollution is reduced.

5. Support for organisations and individuals

We appreciate that the CAZ may unfairly penalise those people who would have difficulty in using alternatives to the private car when travelling into the CAZ. Such people would comprise

Disabled people holding blue badges

Low paid shift workers and key workers who work within the CAZ, (especially those employed at the Children's Hospital) whose shifts start and finish at unsociable hours when public transport is not available.

These groups may not be able to afford to upgrade to a lower emission compliant vehicle before January 2020 when the CAZ charging zone becomes operational. We think that some form of help should be given to the specific groups we have mentioned above.

We also believe that disadvantaged groups and ethnic minority groups are

likely to be less well informed as they have less access to media and may not have English as their first language. They risk being unfairly penalized for not being aware and may therefore need extra help in the form of more advance information made available in different languages, help to switch to public transport or cycling and walking, (travel planning help) and introductory reduced public transport fares.

Coach operators may also be adversely impacted. These are often small family businesses and may struggle to replace non compliant vehicles with compliant vehicles by 2020 because of the high cost. Some mitigation measures should be considered such as grants from central government to enable vehicle replacement or retrofitting, as coach travel offers a viable more sustainable alternative to the private car and is also important for group travel and tourism.

6. Do you have any comments on the type of support which could be provided and who it should be for?

We would suggest providing grants or loans from central government for example a government scrappage scheme, to enable the groups referred to above to upgrade their vehicles. The city council consultation document considers allowing a period of grace or a 'sunset period' to provide more time for disadvantaged people and small and medium businesses located in or delivering to the CAZ to make adjustments. However, we believe that there should be a presumption against a sunset period, as the most polluting vehicles would be allowed to continue to operate and therefore the aim to reduce the mean annual limit of NO_2 to below the legal limit may not be achieved as required. This could postpone any improvements to air quality. Instead mitigation should be focused on helping people to either upgrade their vehicles or where appropriate assist them in switching to alternatives to the car. For those who are not disabled or do not need a vehicle for business purposes, support could be provided in the form of season ticket subsidies, e bike grants, and car club membership.

For blue badge holders, financial help should be provided from central government to enable them or their carers to upgrade to a compliant low or zero emission vehicle. Some additional blue badge parking spaces should be made available in the city centre taken from general parking provision, given the prediction that there will be 9% less car traffic entering the city centre.

7. **If a Clean Air Zone was introduced do you think your organisation would need extra support?**
No

8. **Is there anything else which can be done to improve Birmingham's air quality?**

The city council fully acknowledges that the charging zone will not be enough on its own to reduce NO_2 concentrations by the required amount and soon enough. It has identified that additional measures will be necessary in the short term (pre 2020) which are likely to include the following:

i. funding for converting black taxis to LPG, funding for electric taxis.
ii. reallocation of road space for public transport and cycling,
iii. banning through car and HGV traffic on Moor Street Queensway and Park Street.,
iv. discouraging through traffic from using the A38 between Dartmouth Circus

and Paradise Circus and Sandpits Parade.

v. removal of free on-street parking in the city centre.

While we support all of these measures, for taxis, we think that effort should be concentrated on funding for electric or hybrid taxis rather than conversion of taxis to run on LPG. Although LPG produces lower levels of NO2 and particulates than petrol or diesel, it still contributes to global pollution and climate change.

Overall, we believe that the consultation does not pay enough attention to the additional measures. These will be necessary to produce a substantial modal shift which we regard as essential in tackling air pollution. We would therefore urge the city council to commit to adopting the following fundamental measures:

i. Adoption of a city-wide Clean Air Zone by 2020.
ii. Quick clean and reliable public transport across the entire city, not just into the city centre, with road space reallocation in favour of public transport.
iii. Good value and easy to understand fares on public transport enabling seamless journeys using more than one mode.
iv. A vastly improved active travel infrastructure comprising
    - Safe and attractive cycle network across the city
    - Safe and attractive pedestrian routes and crossings
v. A public cycle hire scheme across the whole city.

Buses

If such a substantial modal shift is to be achieved by 2020, with a significant reduction in the 61% of journeys to work in Birmingham made by car, these will mostly have to be accommodated by additional bus capacity. Additional capacity provided by rail, metro and Sprint rapid transit bus will not be available before 2021. This will require co-ordination between TfWM and the larger bus operators to ensure that the extra capacity required is ready from day one of the CAZ and that the vehicles are all compliant. Also a strategy should be agreed between TfWM the bus operators, and other local authorities in the West Midlands conurbation to ensure that older more polluting buses are not displaced to services which do not enter the CAZ or to neighbouring authorities. To avoid this from happening the steps should be taken to ensure the entire bus fleet operating services within and into the West Midlands conurbation should consist either of Euro VI compliant or zero emission vehicles.

Linking land use planning to air quality considerations

There is a risk that car users will park just outside the Middleway CAZ to avoid paying the charge and continue their journey on foot or by bus to the city centre. We believe that unintended consequences of de facto park and ride sites springing up outside the CAZ are avoided to protect communities in these areas from nuisance parking and congestion on residential roads. Residents parking schemes and other restrictions should be used where necessary to deter uncontrolled ‘park and ride’. Planning restrictions should be implemented to prevent car parks from being established on the edge of the CAZ zone.

Land-use planning could be used in a broader sense as a tool to improve air quality e.g reducing the need to travel and preventing large traffic generating developments. The consequences of land use planning decisions on air quality should always be taken into account. Road building or other traffic-generating development must not be permitted if they will exacerbate the air pollution problem. The National Planning Policy Framework, Planning Practice Guidance on air quality provides guiding principles on how planning decisions should take

account of the impact of new development on air quality.

There are a number of alternative measures which can be used in addition to the CAZ charging zone and the measures mentioned above. These are detailed in:
[https://www.gov.uk/government/publications/air-quality-clean-air-zone-framework-for-england].

Other limit values for nitrogen dioxide
We note that the only measure which central government is asking the city council to comply with is the annual mean limit for NO_2 of 40µg/m^3 . The other legal limit is 200µg/m^3 averaged over one hour exceeded on more than 18 occasions in one year. This limit is not being addressed. This limit may be exceeded and will have implications for human health, while the average annual limit may not be exceeded. There is a risk that the 200µg/m^3 limit will be neglected because the government is not demanding compliance with this measurement.

Other pollutants of concern
Although the CAZ focuses on reducing emissions of NO2, since this is the Defra limit value which is most frequently exceeded and therefore regarded as the biggest problem, there are a number of other pollutants which are just as damaging to human health which should also be considered. We accept that reducing NO_2 concentrations should also reduce concentrations of the other pollutants of concern such as particulate matter, (PM 2.5 and PM10) and emissions of carbon dioxide. However, we believe that these other pollutants of concern should also be considered and monitored more widely especially PM2.5 and PM10.

Particulate matter (PM 2.5 and PM10)
These pollutants are of just as much concern as NO_2 in terms of their adverse impact on public health and road vehicles form the largest source of emissions. In a number of locations in Birmingham, the concentrations of PM10 and particularly PM2.5 exceed the WHO guideline mean annual values of 20 and 10ug/m^3 respectively. However, the annual mean concentrations of PM10 and PM2.5 do not exceed the EU and Defra limits values of 40 and 25ug/m^3 respectively. The WHO states that no threshold has been identified for PM below which no damage to health is observed. Given this evidence, we believe that the measured values of PM 2.5 and PM10 should be compared to the WHO limit values rather than the less stringent Defra and EU limit values [ref WHO standard http://www.who.int/airpollution/data/cities/en/].

Carbon dioxide emissions
Reducing emissions of nitrogen dioxide from transport will indirectly result in lower carbon dioxide emissions. Moving towards low or zero carbon transport is essential if we are to tackle man-made climate change.

None-exhaust air pollutants from road vehicles.
It has been calculated that nearly half of the total pollutants emitted from road traffic are non-exhaust pollutants produced by tyre wear, brake pad wear and road surface wear [https://nerc.ukri.org/planetearth/stories/1479/]. These pollutants consist of particulate matter including PM 2.5 and PM10 which, as discussed above are known to be damaging for health even at very low concetrations. They may be inherently toxic and can also act as carriers of heavy metals and carcinogenic components [https://research.birmingham.ac.uk/portal/en/publications/estimation-of-the-

contribution-of-road-traffic-emissions-to-particulate-matter-concentrations-from-field-measurements(94c26959-e8af-4c04-a8b1-f47fa2d894a1).html]. If all internal combustion-engined road vehicles were eventually replaced by electric vehicles particulate pollutants would be significantly reduced, but they would not be eliminated. Therefore, adverse health impacts from road traffic would still exist.

Other sources of air pollution

The CAZ rightly focuses on reducing emissions from road vehicles which in the UK account for nearly 80% of roadside NOx [UK Plan for tackling roadside nitrogen dioxide emissions, Technical Report, Defra July 2017*]*. However other sources of air pollution which affect the city should also be considered.

Tyseley Incinerator

We have calculated that the emissions of nitrogen oxides and PM10 from Tyseley incinerator are equivalent to 700 Euro 5 diesel cars driving to work every day assuming average km of 2,900 per car (the calculations are presented in Appendix A). We believe that the contribution of the incinerator to air pollution and adverse health effects need to be examined more closely.

Aviation

Although Birmingham Airport is located in Solihull, the adverse effects of air pollution from aviation are experienced in parts of East Birmingham and will also contribute to background levels of air pollution across the city. The impact of the airport on the air quality of the city needs to be assessed. The most recent monitoring report shows that an annual mean of 23ug/m^3 of NO2 was recorded in 2016, slightly increased compared to the previous year. The source of most of this was identified as coming from aircraft and airside vehicles. The monitoring station is located towards the Marston Green end of the airport and less than 1 km east of the city boundary.

New Street Railway Station

Diesel trains using New Street station are a significant source of air pollution. The semi-underground nature of the station means that pollution from diesel trains can be trapped at platform level. Researchers from Birmingham University have found harmful concentrations of pollutants to be present at platform level which could have adverse health effects for both passengers and station staff. Cross Country Trains account for most of the diesel powered trains using New Street Station. Since the Department for Transport are currently undertaking a public consultation on the new Cross Country Rail Franchise, we would like to suggest that Birmingham City Council engage with this consultation and draw attention to the problem of emissions from diesel trains using New Street station, most of which are operated by Cross Country Trains and the need for reducing these emissions. This reduction could be achieved by using bi-mode trains which would be able to operate on electric power using the overhead line equipment when on the approaches to, and within the station. Such trains are already in service with a number of other train operating companies.

Domestic wood burning

The recent increase in the popularity of domestic wood burning for heating is producing an increase in emissions of fine particulate matter. We recommend that public awareness of this issue is raised.

Other measures

Green Infrastructure

Trees and vegetation can reduce air pollution directly by trapping and removing fine particulate matter and indirectly by moderating air temperatures. Green corridors across cities can also reduce pedestrian exposure to pollution by providing alternative routes to polluted main roads.

National Policy Interventions

There are a number of measures over which Birmingham City Council have no direct control but which we believe are necessary in reducing air pollution. Friends of the Earth nationally are calling on central government to implement the following measures:

- A diesel scrappage scheme to be part funded by the motor manufacturers
- Changes to Vehicle Excise Duty to deter diesel use
- Adopt the more stringent World Health Organisation (WHO) standards for air pollution. For example the WHO limit value for PM 2.5 is an annual average of 10ug/m^3 whereas the current EU and UK limit value is more than double this at 25ug/m^3.

We consider that national policies such as these will make an important contribution to improving air quality in Birmingham. We would like to suggest that BCC lobbies for these national measures in order to assist it in achieving its own air quality objectives.

‘Dirty Diesel Hotline’

A means of enabling the public to report diesel vehicles with defective smokey exhausts to the council should be considered. Such a facility is available in Dudley MBC for example but currently not in Birmingham.

Yours faithfully

Martin Stride
Birmingham Friends of the Earth