

BIRMINGHAM CITY COUNCIL

PUBLIC REPORT

Report to: CABINET
Report of: ASSISTANT CHIEF EXECUTIVE AND CORPORATE DIRECTOR, ECONOMY
Date of Decision: 26th June 2018
SUBJECT: TACKLING AIR QUALITY IN BIRMINGHAM – CLEAN AIR ZONE CONSULTATION
Key Decision: Yes
Relevant Forward Plan Ref: 005146/2018
If not in the Forward Plan: Chief Executive approved
(please "X" box) O&S Chairman approved
Relevant Cabinet Member(s) or Councillor Waseem Zaffar, Cabinet Member for
Relevant Executive Member : Transport & Environment
Relevant O&S Chair: Councillor Liz Clements, Transport & Environment
O&S Committee
Wards affected: All

1. Purpose of report:

- 1.1 This report sets out the most realistic options for Birmingham to achieve air quality compliance with UK and EU statutory Nitrogen Dioxide (NO₂) limits in the shortest possible time and as part of a longer term air quality programme.
- 1.2 To seek approval to the process of consultation on proposals and the timeline for implementation of a scheme.

2. Decision(s) recommended:

That Cabinet:-

- 2.1 Approves the preferred measures for a Birmingham Clean Air Zone that will rationally seek to achieve air quality compliance with UK and EU statutory NO₂ limits in the shortest time possible, as part of a longer term air quality programme.
- 2.2 Approves entering into a period of public consultation on a class D Clean Air Zone in the city centre.
- 2.3 Approves the Consultation Strategy attached at Appendix 3.
- 2.4 Notes that a final report with a detailed business plan for the preferred scenario option for a Birmingham Clean Air Zone with additional measures, as part of a wider air quality programme, will be presented to Cabinet for approval, ahead of submission to Government.

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3. Consultation:

3.1 Internal

3.1.1 Members of the Air Quality Steering Group which consists of the relevant Cabinet Members, Committee Chairs and key officers which has met regularly and has received ongoing briefings on progress with the Feasibility Study.

3.1.2 Officers from City Finance, Legal and Governance, Transportation and Connectivity, Environmental Health, Public Health and Planning and Development have been involved in the preparation of this report.

3.2 External

3.2.1 The Council undertook an Air Quality Survey in March 2017. Among the 1,104 responses to the survey:

- 87% thought air quality is a 'serious issue' to be tackled now
- 88% said air quality has a very serious impact on health
- 67% said air quality is an important consideration when making travel choices.

The top three contributors to air pollution were considered by respondents to be congestion and vehicles idling in queues, lorries, vans, and diesel cars.

3.2.2 A Scrutiny Inquiry into the impact of air quality on health was held in January 2017. The report was presented to Full Council in September 2017 and noted that the evidence also showed that diesel vehicle emissions are the most prevalent and impactful source of health-affecting air pollution in Birmingham; and recommended that Birmingham City Council needs to demonstrate leadership and take ownership of this issue by developing a strategy to address this effectively in the shortest possible time, with particular emphasis on selected priority hotspot zones where the risk of public exposure is highest.

3.2.3 Engagement with Businesses and Freight Operators took place in 2017 to raise awareness of air quality issues and to seek views on the opportunities for the freight and logistics sector to address air quality through fleet upgrades or changes to their operations. Concern was expressed by delegates regarding a perceived high level of ignorance amongst the Birmingham business community regarding the clean air zone proposal. Significant problems were also identified in respect of public transport, leaving staff and customers reliant upon private car use. The requirements for deliveries and collections from business premises vary considerably and whilst some may be able and, potentially, willing to effect reductions others do not see this as being viable.

4. Compliance Issues:

4.1 Are the recommended decisions consistent with the Council's policies, plans and strategies?

4.1.1 The contents of this report are considered to be consistent with the City Council's Plan and Budget 2018+ and supports the following priorities:

- Job & Skills - Build upon our assets, talents and capacity for enterprise and innovation to shape the market and harness opportunity.
- Health - Help people become healthier and more independent with measurable improvement in physical activity and mental wellbeing.
- Children - Make the best of our diversity and create a safe and secure city for our children and young people to learn and grow.
- Housing - Provide housing in a range of types and tenures, to meet the housing needs of all of the current and future citizens of Birmingham.

4.1.2 The conclusions of this report also links into the Birmingham Development Plan, Birmingham Connected, West Midlands Combined Authority Strategic Economic Plan and Movement for Growth by supporting improvements to air quality and reducing carbon dioxide (CO₂) emissions and improving the local environment.

4.1.3 The Health and Social Care Act 2012 requires Local Authorities in England to have a Health and Wellbeing Board (HWBB). A key responsibility of the HWBB is to develop a Health and Wellbeing Strategy (HWBS). Improving air quality is a key ambition of the Birmingham Health and Wellbeing Strategy.

4.1.4 This decision supports the delivery of policies included in the City's Birmingham Connected Transport White Paper (as agreed by Cabinet on 17th November 2014 and as noted by Full Council on 7th February 2017) which in turn support delivery of the adopted Birmingham Development Plan and Movement for Growth.

4.1.5 Air Quality and the risk of fines as a result of non-compliance with legal limits was included on the Corporate Risk Register in May 2017.

4.2 Financial Implications

4.2.1 Funding for the Clean Air Zone feasibility study has been provided through grants received from Government totalling £1,070,710, £723,710, was received in 2016/17 with a further £347,000 in 2017/18. Further funding of £150,000 has been met through Corporate Resources as part of the Future Council programme. Total spend to date is £662,000. Officer time has been met through existing resources.

4.2.2 The recommendations in this report have no direct financial implications for the City Council. Capital works required to implement a Clean Air Zone and additional measures, which will include a city level camera infrastructure, road space allocation works, signing and re-routing technologies and accredited vehicle retrofit schemes are set to be funded by the Government's through the Clean Air Implementation Fund, as set out in the Government UK air quality plan. Details of final costs related to the CAZ scheme will be included in the full business case to Government to be finalised by September 2018. However, the implementation of the elements of the Clean Air Zone

will be dealt with through the City Council's governance arrangements with a Full Business Case planned in early 2019, in line with the requirements in accordance with the Council's Gateway and Related Financial Approval Framework.

- 4.2.3 Costs for undertaking the consultation are estimated at £218,000. This will cover the costs of staff and resources. This will be met by resources received from the Joint Air Quality Unit.
- 4.2.4 As a result of a decision to implement a CAZ there will be a cost associated with ensuring the Council's own fleet meets compliance by 2020 as a minimum. A review of the green fleet has been undertaken and options are being considered for individual Directorates. All decisions and associated impacts will be dealt with through the production of Full Business Cases.

Potential financial penalties

- 4.2.5 The European Commission has referred the United Kingdom to the European Court of Justice (ECJ) for failing to respect agreed air quality limit values and for failing to take appropriate measures to keep exceedance periods as short as possible. This action has been taken as the Commission considers that the UK has not presented credible, effective and timely measures to reduce pollution, within the agreed limits and *as soon as possible*, as required under EU law. The Commission is understood to have decided to proceed with legal action.
- 4.2.6 The ECJ may impose both a periodic penalty payment and a lump sum on a Member State, and the Commission's current position is to seek both a penalty payment and a lump sum in every case it refers to the ECJ. It is too early to quantify the potential financial sanction with any accuracy, but it would be calculated taking into account:
- the importance of the rules breached and the impact of the infringement on general and particular interests,
 - the period the EU law has not been applied,
 - the country's ability to pay, ensuring that the fines have a deterrent effect.
- 4.2.7 Given the nature of the non-compliance, its duration and its impact on the wider population, the penalty could potentially be substantial. Whilst any financial penalty imposed by the ECJ would be imposed upon the UK government, Part 2 of the Localism Act 2011 empowers the government to require local authorities to make payments of amounts, as determined by the government, in respect of an EU financial sanction.
- 4.2.8 In effect, this allows UK central government to pass on all, or a proportion of, any fines imposed by the ECJ to local authorities in England which the government considers have contributed to the failings that have led to the above proceedings. As one of the larger cities involved, Birmingham could be at risk of having a large fine imposed on it by the UK government, depending upon the exact amount of the penalty imposed by the ECJ. This is an important risk to the Council. At present the impact of Brexit is unclear with regard to this process and the threat of fines.
- 4.2.9 It is not known how UK Government would exercise this power if at all, but it underscores the critical importance of the proposed measures to secure air quality compliance with UK and EU statutory NO₂ limits in the shortest time possible consistent with the constraints of the relevant legislation, its legal obligations and public law considerations. The obligation to address compliance within the shortest time

possible imposes a particularly onerous burden upon the Council, but it does not mean that all other considerations are rendered worthless, for example it should continue to have regard to the consequences of the project which it would not be rational to disregard.

4.3 Legal Implications

- 4.3.1 Under the general power of competence per Section 1 of the Localism Act 2011, the Council has the power to enter into the arrangements set out in this report and are within the boundaries and limits of the general power of competence Section 2 and 4 of the Localism Act 2011.
 - 4.3.2 The Government is set to mandate Birmingham to introduce a Clean Air Zone (CAZ) under the Environment Act 1995 (Birmingham City Council) Air Quality Direction 2017 by December 2019 to enable compliance with EU Air Quality targets by 2020. The minimum vehicle standards will be Euro 6 level for diesel vehicles and Euro 4 for petrol vehicles. Increased use of electric vehicles will support the City in achieving compliance and this project in turn supports this transition.
 - 4.3.3 The Council is empowered to introduce a Clean Air Zone pursuant to powers in the Transport Act 2000, subject to first carrying out appropriate consultation and giving consideration to whether it is necessary to hold a public inquiry.
 - 4.3.4 Under the Environment Act 1995, a Ministerial Direction was issued to Birmingham and four other UK cities (Derby, Leeds, Nottingham and Southampton) on 19 December 2017, and came into force the following day. The Direction stipulates that Birmingham shall prepare a full business case for a scheme to deliver compliance with legal limits by 15th September 2018 in line with the UK Air Quality Plan (AQP). The City Council now has a statutory duty to comply with this direction.
 - 4.3.5 Failing to take action towards achieving compliance within the shortest possible time would leave the City Council totally exposed to legal challenge, not only for a failure to comply with its statutory duty to comply with the Ministerial direction, but also its obligation under air quality legislation to achieve compliance with legal NO₂ limits in the shortest possible time.
- 4.4 Public Sector Equality Duty (see separate guidance note)
- 4.4.1 An initial Equalities Analysis has been carried out and is attached at Appendix 1.
 - 4.4.2 Depending on the preferred option for a Clean Air Zone, there could be some financial impacts on people on lower incomes and those in minority ethnic communities that need to be recognised and mitigated where possible, in order to avoid any particular group being disproportionately affected. There might also be an impact on local small and medium sized enterprises who employ Birmingham residents.
 - 4.4.3 Any scheme-specific equalities issues will be identified as part of the Integrated Impact Assessment and measures would be designed to reduce any negative impacts as far as possible. As per 4.2.4 as part of the Clean Air Zone Full Business Case it is proposed that funding to deliver this package of mitigations will be sought from the Government's Clean Air Fund.

5. Relevant background/chronology of key events:

5.1 Background

- 5.1.1 Humans can be adversely affected by exposure to air pollutants in ambient air. In response, the European Union and the UK Government have developed an extensive body of legislation which establishes health based limits for a number of pollutants present in the air. These limits apply over differing periods of time because the observed health impacts associated with the various pollutants occur over different exposure times.
- 5.1.2 As such the UK Government has obligations under this EU and domestic legislation to set out a national strategy and plans to improve air quality to meet legal limits. The UK continues to fail to meet air quality limit values for Nitrogen Dioxide (NO₂) set at an annual mean limit value of 40 µg/m³. This was to have been achieved by 2015 following an extension from the original deadline of 2010.
- 5.1.3 Currently, the UK continues to have significant exceedances of the annual mean legal limit for NO₂ and the EU has indeed started infraction proceedings in the European Courts of Justice where as a result fines may be imposed. As noted at 4.2.8 the impact of Brexit in the future remains unclear but at the moment the UK is subject to the current legislative requirements, and the obligation is to apply the law as it presently stands.
- 5.1.4 Poor air quality in Birmingham is acknowledged as a major public health burden and Public Health England suggest that it is the fourth largest risk to public health, behind cancer, obesity and cardiovascular disease. It is estimated that poor air quality is responsible for around 900 premature deaths a year in Birmingham (2015) and 2,000 – 2,400 attributable deaths across the West Midlands per year (based on 2010/11 estimates).
- 5.1.5 The two pollutants of most concern in Birmingham are nitrogen dioxide (NO₂) and fine airborne particulate matter (PM_{2.5}). Both pollutants contribute to the health burden but it is only NO₂ which has a legislative limit. It is important to appreciate that even with compliance with the legal limit there will remain a health burden i.e. there is no recognised safe limit for NO₂ at this point in time.
- 5.1.6 The Council is responsible for ambient air quality and cleaner air under the Air Standard Regulations. With road traffic as a primary source of harmful emissions in the city, diesel vehicles are key contributors to nitrogen dioxide (NO₂) emissions.
- 5.1.7 In January 2003 the whole of Birmingham was declared an Air Quality Management Area (AQMA) for nitrogen dioxide. Pursuant to the AQMA declaration Environmental Health led on the development and publication of an Air Quality Area Plan (AQAP) in 2006 which was updated in 2011. The original plan focused on a wide selection of actions, which were narrowed down to be more targeted for the 2011 plan.
- 5.1.8 The Government issued the UK Plan for Tackling Roadside Nitrogen Dioxide Concentrations in July 2017 which identified Birmingham as one of the areas experiencing the greatest problem with NO₂ exceedances, as indicated in Plan 3 at Appendix 4. The Government's Plan requires the Council to undertake assessments aimed to deliver the best Clean Air Zone option to achieve statutory NO₂ limit values within the shortest possible time.

5.1.9 Whilst both plans have identified road traffic as the single greatest cause of emissions there have been tensions between the wish to stimulate inclusive growth and the impact that traffic generated by the economy has on pollution. However, increasingly there is a view that health considerations ought to be balanced alongside considerations to further economic prosperity.

5.2 **Tackling Air Quality in Birmingham**

5.2.1 The Scrutiny Inquiry into the impact of air quality on health in January 2017 detailed the need for the City Council to demonstrate leadership and take ownership of tackling air quality by developing a strategy to address it effectively.

5.2.3 Air quality is affected by many different decisions and activities which have been taken over many years and are often intertwined and complex to unravel. Air pollution impacts the most disadvantaged communities, for example inner city neighbourhoods. There is increasing evidence that people already struggling with the stress of disadvantage, for example low family income and poor housing conditions, are less fit and able to fight off the effects of air pollution. This creates a vicious circle from which those who are adversely affected will struggle to break free.

5.3 **Clean Air Zones**

5.3.1 Following legal action by lobbying group Client Earth the Supreme Court instructed the Government to develop an air quality plan to achieve reductions of NO₂ in the shortest possible time in line with legislative requirements. In response the Government published an updated National Air Quality Plan in December 2015. This plan identified five cities as being non-compliant beyond 2020 outside London, namely, Birmingham, Leeds, Nottingham, Derby and Southampton. In order to address this non-compliance, and on the basis that the most significant emissions resulted from road transport, Government proposed the introduction of Clean Air Zones (CAZ) by the end of 2019, with a view to achieving statutory NO₂ limit values within the shortest possible time (widely assumed to be 2020).

5.3.2 The Government subsequently published a Clean Air Zone Framework which sets out the minimum Euro Standards (for exhaust gases) for a Clean Air Zone.

Table 1 – Minimum Euro Standards for a Clean Air Zone

Vehicle type	Euro standard	Applied to most new registrations from
Cars, taxis and private hire	Euro 6	1st September 2015
Small commercial van/light commercial	Euro (diesel) 4	1st January 2006
Minibus	Euro (petrol)	
Large van		
HGV		
Coach	Euro VI	1st September 2016
Bus		

5.3.3 The Framework also proposes various categories of zone where the restriction and charges would apply to different types of vehicles:

Table 2 – Classes of CAZ

Clean air zone class	Vehicles Included
A	Buses, coaches and taxis
B	Buses, coaches, taxis and heavy goods vehicles (HGVs)
C	Buses, coaches, taxis, HGVs and Light Goods Vehicles (LGVs)
D	Buses, coaches, taxis, HGVs, LGVs and private cars (option to include motorbikes and mopeds)

5.3.4 The Government issued Ministerial Directions on the 19th December 2017 to the 5 cities (Birmingham, Leeds, Nottingham, Southampton and Derby) to submit a Full Business Case for a Clean Air Zone by 15th September 2018. A copy of the Direction is attached at Appendix 2. The issue of this direction means that the Council is under a statutory duty to comply with the terms of the directive. The sections below set out the key issues in relation to tackling air quality and putting in place a Clean Air Zone.

5.4 CAZ Feasibility and Target Determination

5.4.1 Localised transport and air quality baseline and future do minimum models have been established for 2016 and 2020 to understand where air quality levels would be without any intervention. Different potential solutions have been modelled including different types of CAZ to see what will provide the optimum solution.

5.4.2 Birmingham has completed the process of Target Determination with the Joint Air Quality Unit. This process involves comparing the outputs of the local Airviro and Government PCM (Pollution and Climate Mapping) air quality modelling and agreeing what reductions are needed, at which road links.

5.4.3 The Target Determination process concluded in May 2018 and the local modelling has shown that forecast air quality issues in 2020 are broadly in line with the national PCM information issued in the National Air Quality Plan with regard to the locations of exceedance of the NO₂ annual mean limit value of 40 µg/m³.

5.5 Clean Air Zone Options Appraisal

5.5.1 Using the transport and air quality model baseline established for 2016 and the do minimum 2020 scenario, different potential solutions have then been modelled, including different types of Clean Air Zones to see what could provide the optimum solution for the city.

5.5.2 Traffic assessments have been carried out using the SATURN transport model, updated to incorporate major infrastructure changes made over the last 5 years, with a base year of September 2016 and a forecast year of 2020. New traffic surveys were undertaken as part of the model's development in September 2016. Behavioural responses to the charges of users to different scenarios were modelled using the West Midlands PRISM tool and include analysis of forecast levels of mode shift, replacing vehicles, cancelling the trip, avoiding the zone and paying the charge.

5.5.3 Further work is planned to determine an appropriate charging framework for any Birmingham CAZ but the charge set will need to ensure that a sufficient level of

replacement, retrofit or ceasing to use vehicles is delivered i.e. that drivers and businesses are incentivised to use lower emission vehicles or change behaviour.

5.6 Non – Charging Option

5.6.1 The 2020 baseline demonstrates what air quality would be like if we were to rely on natural fleet changes i.e. the natural process of modernised and improved technology to reduce emissions as well as the impact of already planned transport measures such as the Edgbaston metro extension, ultra-low emission vehicle infrastructure improvements, car clubs, parking management, cycle routes and further bus priority. Other key public transport improvements e.g. improvements associated with the West Midlands Rail Franchise and SPRINT are not planned to be delivered until 2021/2022.

5.6.2 The modelling shows that without any additional intervention such as charging as an incentive to upgrade vehicles or change travel behaviours, there would be some areas of the city that would remain non-compliant against the terms of the directive. Simply relying upon such measures is not therefore considered to be a realistic option.

5.7 Charging Options

5.7.1 The mechanism of charging for driving through a Clean Air Zone is intended to act as a disincentive for driving non-compliant vehicles, and to therefore encourage the acquisition of compliant vehicles or to discourage such vehicles entering the CAZ. The Council is very aware that the charging policy will not be well received by those people who will be affected by such additional costs. However, the Government directive has made it impossible for the Council to do anything other than implement a Clean Air Zone with a charging mechanism, not to do so would be in breach of the Council’s legal duty.

5.7.2 The modelling estimates the responsiveness of users to different charging scenarios. The responses modelled include mode shift, replacing vehicles, cancelling the trip, avoiding the zone and payment of the charge. The table below shows some of the modelling options based on those applied in London’s Ultra Low Emission Zone (ULEZ).

Table 3 Modelled charging options

Vehicle Class	Daily Charge for non-compliant vehicles	
	Medium	High
Buses/ Coaches	£50.00	£100.00
HGVs	£50.00	£100.00
Taxi and private hire	£6.00	£12.50
Light Goods Vehicles (LGVs)	£6.00	£12.50

Private Car	£6.00	£12.50
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5.7.3 These are not final charges and further work will be required to determine an appropriate charging framework for any Birmingham CAZ is on-going. However, the charge set will need to ensure that a sufficient level of replacement, retrofit or ceasing to use vehicles is delivered i.e. that drivers and businesses are incentivised to change behaviour or use lower emission vehicles. There is also a need to consider levels being set by other cities introducing Clean Air Zones. Necessarily how the CAZ operates in practice will need to be regularly reviewed to ensure that predicted behaviours occur in practice to achieve modelled results.

5.7.4 Income from the CAZ charges and any Penalty Charge Notices issued will first be used to cover the costs of running the CAZ. The Transport Act 2000 requires any excess revenue that may arise from charges above the costs of operation to be re-invested to facilitate the achievement of local transport policies and the money would be invested in transport infrastructure measures to benefit the public and improve air quality. Where feasible, consideration will also be given to replacing existing Council General Fund budgets currently used to fund relevant transport infrastructure measures so that in turn these may be re-allocated to Council priorities. At this stage the forecast levels of revenue have not been confirmed.

5.7.5 A number of realistic scenarios have then been modelled to look at the impact of different classes of Clean Air Zones to deliver compliance. Based on the national modelling which initially showed exceedances limited to the A38 in the city centre, a number of scenarios to look at the reduction in NOX emissions that different interventions would lead to were considered. The scenarios tested were:

- Option 1 – CAZ C inside the Ring Road (A4540) (Higher price band)**
- Option 2 - CAZ D inside the Ring Road (A4540) (Medium price band)**
- Option 3 – CAZ D inside the Ring Road (A4540) (Higher price band)**

5.7.6 The impacts on NO2 are summarized below and plans showing the outputs of the modelling of NO2 levels in the 2016 Baseline, local and PCM 2020 Do Minimum and 2020 CAZ D High Scenarios are attached at Appendix 4

Table 4 - Summary of CAZ impact on exceedances of NO2 (ug/m3) and the further reductions which are required to achieve compliance

Location	Without CAZ 2020	CAZ C high 2020	Additional Reduction Req.d in Road NOx (after CAZ C)	CAZ D medium 2020	CAZ D high 2020	Additional Reduction Req.d in Road NOx (after CAZ D high)
A4540 Lawley Middleway - Garrison Circus (Outside CAZ)	46.9	41.8	-11%	41.7	41.4	-9%
A4100 Digbeth	46.4	41.5	-11%	40.8	40.3	-4%
A38 between Children's Hospital and Dartmouth Circus	46.6	42.6	-18%	41.3	40.6	-7%
Suffolk St Queensway (nr Beak St)	48.8	45	-31%	43.5	42.7	-19%

5.7.7 Whilst modelling of these scenarios shows an improvement in emissions, none achieve sufficient reductions in order to meet compliance in 2020, and predicted concentrations are still above the NO2 limits.

5.8 Additional Measures

- 5.8.1 Further work was undertaken to identify additional measures which could deliver additional NO₂ reductions. A number of such measures were short listed and appraised with regard to their potential for achieving immediate and sustained improvements to air quality and health as well as their deliverability. It was important to consider how each measure could be represented within the transport and air quality modelling in conjunction with each potential CAZ scenario to enable as far as possible a robust quantitative assessment of the measure's impacts. These measures include:
- Further retrofitting of black taxis to LPG and funding for additional Electric Taxis
 - Continued expansion of on-street controlled parking across the city centre.
 - Network changes to encourage traffic to route away from the A38 and Digbeth including banning through trips on Moor Street Queensway and Park Street and discouraging through trips between Great Suffolk Street/Great Charles Street Queensway and Sandpits.
- 5.8.2 The modelling completed to date shows that the additional measures lead to additional reductions in the number of exceedance locations. Reductions of road side NO_x inside the CAZ boundary, beyond the CAZ D high scenario, are effective in Digbeth due to the Moor St Queensway closure, with reductions of 10%. However, elsewhere inside the CAZ they are very limited typically ~2%. The Ring Road also continues to have exceedances. These are shown on plan 5 attached as part of Appendix 4.
- 5.8.2 Although these measures produce further reductions beyond a CAZ D the modelling suggests that it will not be possible to deliver compliance at all locations in 2020. The reported concentrations in the scenarios for 2020 are based on guidance and methodologies which have been subject to clarification as JAQU has developed their tools and guidance since autumn 2017. The Council has modelled a range of sensitivity tests applying updated guidance to the behavioural assumptions regarding car owner choice and the dates when newer Euro 6d vehicles are likely to become available. These tests indicate that the model results may be pessimistic, and that if this approach was applied then then the modelling may indicate compliance in 2021 with the preferred CAZ scheme in place. Further detailed modelling is ongoing to refine these tests along with other assumptions in the modelling.
- 5.8.3 Further measures to reduce traffic on the A38 and the Ring Road including banning through trips by certain vehicle classes e.g. HGVs have been modelled together with the banning of through trips on the A38 between Dartmouth Circus and Belgrave Middleway. However, the impact of this closure reroutes additional traffic onto the Ring Road further increasing the levels of exceedance.
- 5.8.4 These measures will be further supplemented by the implementation of a series of early measures to further support air quality improvements ahead of the Clean Air Zone for which £2.9 million of funding has already been secured. These include:
- Further bus priority measures across the city core to plug gaps in existing city centre bus priority – reallocating roadspace in key locations to improve bus journey reliability. The highway interventions are complemented by a package of up to 34 bus stop upgrades which will be delivered alongside the highway improvements.
 - New traffic signal control strategies at four key intersections within the City Core which are closely related to key air quality locations. This will be to reduce the level of stop-start required for the highest polluting vehicles and will be complementary to the bus priority measures.

- Signing and rerouting will also play an important role of the Clean Air Zone scheme and could also have further benefits and reduce NO2 levels. Funding has been secured to develop a new Signing Strategy and for the introduction of Variable Messaging Signs (VMS) on the ten key radial corridors leading onto the A4540 ring road as outlined in the figure below. The VMS support the routing strategy by upgrading where static routing signs are strengthened by dynamic VMS support planned and unplanned incidents on the network. A plan of the bus priority, traffic signal and VMS measures is provided at Appendix 5.

5.9 Understanding the wider impacts

5.9.1 An impact analysis has been undertaken to support the development of the CAZ and aims to:

- Establish whether, and to what extent, the costs of introducing a CAZ, to government and society, are justified by the health and environmental benefits;
- Identify the lead option i.e. the CAZ scheme that delivers the greatest health and environmental benefits in the shortest possible time having regard to other considerations that it would be irrational to disregard.
- Identify a package of measures to mitigate the impact of the Clean Air Zone on individuals and businesses.

5.9.2 A summary comparison between the various options is provided at Appendix 6. This shows that reductions in air pollution and travel behavioural changes will bring a number of social, environmental and economic benefits. These include:

- Benefits to human health;
- Improved productivity (as a consequence of health improvements);
- Reduced material damage (particularly to historical and cultural buildings);
- A positive effect on nature conservation/green sites within the CAZ boundaries;
- A positive effect on climate change through reduced greenhouse gas (GHG) (measured in CO2 equivalent tonnes) emissions.

5.9.3 Although the quantified health and non-health benefits are significant for CAZ D plus additional measures (valued at approximately £38m) and there are additional benefits and savings in terms of reduced CO2 emissions, journey times and vehicle operating costs, these are outweighed by the projected costs to the public, BCC, and Government.

5.9.4 The cost-benefit-analysis undertaken for the options in line with the Government's green book approach suggests that all of the schemes generate a negative net present value. However, the High Court judgments resulting from the Client Earth cases sets out that simply balancing considerations such as cost is not a reason for rejecting effective measures. Rather the approach is secure compliance within the shortest time possible, consistent with the constraints of the relevant legislation, its legal obligations and public law considerations.

5.9.5 It should be noted that in the case of Client Earth v Secretary of State for the Environment Food and Rural Affairs, the Court confirmed that it was not permissible to have regard to cost in fixing the target date for compliance or in determining the route by which the compliance can be achieved when one route produces compliance more

quickly than another. In those respects, the determination has to be the efficacy of the measure in question and not the cost. This flows from the requirement of the Directive to keep the exceedance period as short as possible. Nonetheless the Council have been advised that this does not mean that the Council should then disregard the consequences of any given course of action where it would be irrational to do so.

5.9.6 The initial results from the distributional impacts appraisal show that the following groups have been identified as potentially experiencing a disproportionate or differential adverse impact as a result of the implementation of the scheme:

- Residents of the CAZ, and also surrounding areas (CAZ D scenarios only)
- Disabled people – if there was an increase in cost or decrease in availability of community transport.
- Children – if there was an increase in cost or decrease in availability of school transport
- People with religious beliefs – particularly those attending the key places of worship within the CAZ area

In terms of impacts on business affordability, the following groups would be most adversely affected:

- SMEs within the CAZ
- Suppliers to SMEs within the CAZ
- Taxi drivers

5.9.7 A CAZ D will have negative impacts on a far greater proportion of the population, due to the inclusion of private cars. This will result in many households, in and around, the Birmingham area being forced to evaluate whether their vehicle is compliant, and if not, what they should do about it (i.e. pay the charge, change travel mode, cancel their trips).

5.9.8 Thus, a CAZ D is likely to result in an additional financial burden to households and families and businesses. In some cases they may not have the resources to cover the costs. The result of this may be a reduction in quality of life due to reduced mobility. This is captured, on aggregate, in the economic appraisal in the welfare and user charge impacts. However, the individual impacts to households, and in particular on vulnerable and worse-off socio-economic or minority groups, are being analysed in greater detail and will be used to inform the proposals for a package of mitigation measures. As noted at 4.2.4 these measures will form a bid to the Clean Air Fund which the Government have created to support measures to reduce the impact of air quality schemes on individuals and businesses. These measures will be informed by the consultation and form part of the submission of the Full Business Case to Government.

5.9.9 The mitigations are likely to include measures to support additional replacement/retrofitting of vehicles and to further enhance accessibility and convenience and attractiveness of public transport options. It is possible solutions to support a greater take up of Ultra-Low Emission Vehicles with a particular focus on Taxis and LGVs will have further air quality benefits for NO₂ emissions.

5.9.10 Additionally through the consultation process, specific instances for exemptions will be investigated with stakeholders such as the Emergency Services' specialist vehicles such as fire engines, ambulances or riot vans, or where specific compliant vehicles are shown

to simply not be on the market at Implementation Stage and there is no alternative for some users to upgrade.

5.9.11 The Integrated Impact Analysis is being used to target the measures effectively to those who require support the most. The consultation will help to shape the final proposals which will be included in the Full Business Case later this year.

5.10 Key challenges

5.10.1 The Do Minimum assessment suggests that in 2020 the amount of the vehicle fleet within the city centre that meet CAZ standards would be around 72% - equating to around 60,000 vehicles daily in the city centre which would not meet the standards. It is considered that without a charging mechanism in place that it would not be possible to drive the level of change required to achieve compliance in line with the Ministerial Direction either through vehicle improvements or through mode shift/behavior change alone.

5.10.2 The feasibility study has also identified the limitations of technically feasible measures to achieve compliance in the constrained timescales required. The study suggests that even with 97% of the vehicle fleet meeting the CAZ standards, exceedances would continue to exist. This is due to the sheer volume of traffic using the worst sections of the road network.

5.10.3 The pace and scale of change needed means that it is exceptionally difficult to deliver compliance without a charge unless there are significant changes in infrastructure and in travel behaviours – the nature of the city's transport network coupled with existing travel patterns present real and complex challenges for delivering air quality improvements in the compressed timescales.

5.10.4 Analysis of the through traffic revealed the importance of connectivity to the motorway network to the north – the A38 provides a major direct link to the M6 through the city centre resulting in significant volumes of traffic as well as Birmingham City generated traffic (e.g. Sutton Coldfield). To the south through traffic extends to destinations such as the University of Birmingham and Queen Elizabeth Hospitals site.

5.10.5 The current lack of cross city centre public transport services is also considered to act as a serious barrier to reducing the amount of private car trips through the city centre and beyond. Modelling suggests that efforts to divert traffic away from key links such as the A38 results in a worsening of conditions elsewhere i.e. the eastern section of the Ring Road.

5.10.6 The A4050 and its associated junctions are already experiencing capacity issues and queuing at peak times. Improvements are planned to some of the junctions, but modelling shows that these will not resolve the issues in the long term. Additional improvements, which are unlikely to be deliverable in line with the timescales required on air quality, are required to enable the road to take the extra traffic which would be re-routed from the A38.

5.10.7 There is a clear and compelling need to build on the initial changes which will result from the introduction of the Clean Air Zone. The Council's transport policies will need to be increasingly bold and continue to incrementally remove and restrict traffic from the city centre. This will also improve air quality and will be a catalyst for further regeneration of the city centre.

5.10.8 Over the longer term it will be necessary to remove most traffic from the A38 / Queensway it would be necessary to encourage rerouting additional movements of vehicles around the city centre on the Ring Road. Further improvements are required to change the role and function of the A4540 Ring Road (i.e. consolidating accesses/routes, restricting access off/onto the Ring Road; increasing capacity in certain locations) will be required alongside additional enhancements to public transport.

5.11 A longer term strategy for Air Quality

5.11.1 Action on air quality is everyone's responsibility both organisations and individuals. The Clean Air Zone will bring forward compliance with statutory NO₂ limits, however, it is acknowledged that generating further health benefits requires efforts to go beyond achieving compliance. The Clean Air Zone is, however, an important first step to clean up the air in Birmingham.

5.11.2 The Government have recently published a draft Clean Air Strategy which sets out how it plans to tackle all sources of air pollution and to achieve legally binding international targets to reduce emissions of five of the most damaging air pollutants (fine particulate matter, ammonia, nitrogen oxides, sulphur dioxide, non-methane volatile organic compounds) by 2020 and 2030. Birmingham will need to develop a commensurate strategy in line with these targets. It is proposed that the Council will consult on an air quality strategy later in 2018.

5.11.3 Alongside the Clean Air Zone study a wider programme of works is already ongoing to support a shift to cleaner vehicles. However it is acknowledged that this will need to be expanded to maximise the impacts of the Clean Air Zone and these measures. The Council is progressing:

- Changes to the licensing arrangements – requirements for the City Council licensed taxi fleet will be in line with the CAZ standards as a minimum by December 2019.
- Developing Tyseley Energy Park - On site Hydrogen production testing out use of renewable energy to ascertain commercial viability initiating the, refuelling facilities for hydrogen buses and market take up of zero emission vehicles.
- Hydrogen Buses - Up to 22 hydrogen buses under to be procured by BCC and deployed by March 2019.
- LPG Taxi Retrofit Programme - 65 taxis retrofitted to LPG, trialling a new low emission technology solution.
- Secured £2.92 million funding from the Office for Low Emission Vehicles to support implementation of a city level electric vehicle chargepoint network which will include 197 charging point for taxis together with a public accessible network for fast and rapid charging. Implementation is anticipated to start from Sept 2018, with initial focus on the taxi charging infrastructure and renewal of current public charge point network.
- Transport for West Midlands have secured Clean Bus Vehicle Technology Funding of £3 million matched by £2,920,200 from bus operators to enable 364 buses to be retrofitted with kits that tackle exhaust emissions and ensure that buses entering the CAZ meet the standards.
- Undertaking a BCC Fleet Review and reviewing Corporate Staff policies.
- Supporting the expansion of Car Clubs across the City.

5.12 Next Steps and Consultation on CAZ proposals

- 5.12.1 The Council now has to set out a plan for implementation of a Clean Air Zone and a key part of that will be consultation with residents, businesses and other stakeholders. Whilst the legislation does not prescribe the consultation requirements, the Council has sought Counsel's advice on the approach for the CAZ consultation process.
- 5.12.2 There is a high prospect of challenge with regard to any action the Council decides to take, from either environmental interest groups who do not consider that the proposals go far enough or / and from specific individuals or groups that may be especially adversely affected by the proposals.
- 5.12.3 However, based on the feasibility study and mindful of the legal requirement to deliver compliance in the shortest possible time, subject to other duties, it is proposed that the Council consults on the option of implementing a class D CAZ together with additional measures including parking measures and network changes and to be supported by a package of measures to reduce the impact on those likely to be most affected.
- 5.12.4 Travel patterns and behaviours continue to be a key part of the challenge in tackling air quality and we need to continue to encourage the use of more efficient forms of transport and where possible reduce the overall demand for travel.
- 5.12.5 The Council will undertake a 6 week consultation process on the proposed package of measures to commence from early July 2018. Whilst a longer consultation period would be preferable, it is considered that undertaking a longer consultation period would be inconsistent with the legal obligation to submit a Full Business Case in September. A Consultation Strategy and Narrative are attached at **Appendix 3**
- 5.12.6 It is also proposed that subject to their consent and collaboration, the consultation should be undertaken collaboratively with the West Midlands Mayor and the Combined Authority, given that the implications of the CAZ will have impacts across a wider geography than Birmingham alone.
- 5.12.7 The consultation is planned to conclude on 17th August. Consultation analysis will be ongoing and proposals will be updated, modelled (including additional sensitivity analysis), reviewed and finalised to allow for submission of a Full Business Case in September 2018.
- 5.12.8 Mindful of the Secretary of State's direction as well as the need to secure compliance in the shortest time possible it is not considered likely that a public inquiry will be needed to consider the measures proposed.

6. Evaluation of alternative option(s):

- 6.1 Alternative options including a do nothing option have been considered, however, this would not meet the legal requirements of the ministerial directive to achieve compliance in the shortest possible time.
- 6.2 The Council could choose to undertake a two stage consultation on a Clean Air Zone; however, this would delay the submission of a Full Business Case for the scheme and implementation of a Clean Air Zone. This would be contrary to the Secretary of State's direction and should not be pursued therefore.
- 6.3 Either of the alternative options above may:

- lead to failure to achieve compliance with air quality standards as defined in EU directives, which have also been incorporated into national legislation. This could result in significant infraction fines being passed down to the local authority by the government utilising the Localism Act
- lead to the Government imposing a solution on the city
- lead to failure to improve air quality and the risk of failing to deliver the public health benefits in terms of reductions in deaths and ill health associated with poor air quality.

6.4 Failing to take any action towards achieving compliance would leave the City Council totally exposed to legal challenge, not only for a failure to comply with its statutory duty to comply with the Ministerial direction, but also its obligation under air quality legislation to achieve compliance with legal NO2 limits in the shortest possible time.

7. Reasons for Decision(s):

7.1 To enable progress with consultation on emerging Clean Air zone options in line with the requirements being set by Government.

7.2 Failing to take any action towards achieving compliance would leave the City Council totally exposed to legal challenge, not only for a failure to comply with its statutory duty to comply with the Ministerial direction, but also its obligation under air quality legislation to achieve compliance with legal NO2 limits in the shortest possible time.

Signatures

Date

Councillor Wasseem Zaffar Cabinet Member for Transport Environment
Jonathan Tew Assistant Chief Executive
Waheed Nazir Corporate Director, Economy

List of Background Documents used to compile this Report:

“Birmingham Connected White Paper”: Birmingham City Council, November 2014

“West Midlands Integrated Transport Authority Strategic Transport Plan: ‘Movement for Growth’”: report to Cabinet Member for Development, Transport and the Economy jointly with Deputy Chief Executive, 15th October 2015

Clean Air Zone Framework - Principles for setting up Clean Air Zones in England. Defra & DfT 2017

UK plan for tackling roadside nitrogen dioxide concentrations, Defra, 2017

The Impact of Poor Air Quality on Health in Birmingham, Overview & Scrutiny Committee, September 2017

List of Appendices accompanying this Report (if any):

1. Equality Analysis
2. Ministerial Direction, 19th December 2017
3. Consultation Strategy
4. Plans of Modelled NO₂ concentrations
5. Early Measures
6. Summary analysis of CAZ options

PROTOCOL PUBLIC SECTOR EQUALITY DUTY

- 1 The public sector equality duty drives the need for equality assessments (Initial and Full). An initial assessment should, be prepared from the outset based upon available knowledge and information.
- 2 If there is no adverse impact then that fact should be stated within the Report at section 4.4 and the initial assessment document appended to the Report duly signed and dated. A summary of the statutory duty is annexed to this Protocol and should be referred to in the standard section (4.4) of executive reports for decision and then attached in an appendix; the term 'adverse impact' refers to any decision-making by the Council which can be judged as likely to be contrary in whole or in part to the equality duty.
- 3 A full assessment should be prepared where necessary and consultation should then take place.
- 4 Consultation should address any possible adverse impact upon service users, providers and those within the scope of the report; questions need to assist to identify adverse impact which might be contrary to the equality duty and engage all such persons in a dialogue which might identify ways in which any adverse impact might be avoided or, if avoidance is not possible, reduced.
- 5 Responses to the consultation should be analysed in order to identify:
 - (a) whether there is adverse impact upon persons within the protected categories
 - (b) what is the nature of this adverse impact
 - (c) whether the adverse impact can be avoided and at what cost – and if not –
 - (d) what mitigating actions can be taken and at what cost
- 6 The impact assessment carried out at the outset will need to be amended to have due regard to the matters in (4) above.
- 7 Where there is adverse impact the final Report should contain:
 - a summary of the adverse impact and any possible mitigating actions (in section 4.4 or an appendix if necessary)
 - the full equality impact assessment (as an appendix)
 - the equality duty – see page 9 (as an appendix).

Equality Act 2010

The Executive must have due regard to the public sector equality duty when considering Council reports for decision.

The public sector equality duty is as follows:

- 1 The Council must, in the exercise of its functions, have due regard to the need to:
 - (a) eliminate discrimination, harassment, victimisation and any other conduct that is prohibited by the Equality Act;
 - (b) advance equality of opportunity between persons who share a relevant protected characteristic and persons who do not share it;
 - (c) foster good relations between persons who share a relevant protected characteristic and persons who do not share it.
- 2 Having due regard to the need to advance equality of opportunity between persons who share a relevant protected characteristic and persons who do not share it involves having due regard, in particular, to the need to:
 - (a) remove or minimise disadvantages suffered by persons who share a relevant protected characteristic that are connected to that characteristic;
 - (b) take steps to meet the needs of persons who share a relevant protected characteristic that are different from the needs of persons who do not share it;
 - (c) encourage persons who share a relevant protected characteristic to participate in public life or in any other activity in which participation by such persons is disproportionately low.
- 3 The steps involved in meeting the needs of disabled persons that are different from the needs of persons who are not disabled include, in particular, steps to take account of disabled persons' disabilities.
- 4 Having due regard to the need to foster good relations between persons who share a relevant protected characteristic and persons who do not share it involves having due regard, in particular, to the need to:
 - (a) tackle prejudice, and
 - (b) promote understanding.
- 5 The relevant protected characteristics are:
 - (a) Marriage & civil partnership
 - (b) Age
 - (c) Disability
 - (d) Gender reassignment
 - (e) Pregnancy and maternity
 - (f) Race
 - (g) Religion or belief
 - (h) Sex
 - (i) Sexual orientation