

FULL BUSINESS CASE (FBC)

A. GENERAL INFORMATION

A1. General

Project Title <i>(as per Voyager)</i>	BIRMINGHAM CLEAN AIR ZONE (CAZ): IMPLEMENTATION OF MAIN CAZ INFRASTRUCTURE – CIVIL ENGINEERING AND CAMERAS SOLUTION - FULL BUSINESS CASE (FBC)		
Voyager Code	CA-03125		
Portfolio / Committee	Transport & Environment Finance & Resources	Directorate	Inclusive Growth
Approved by Project Sponsor	Phil Edwards 7 th August 2020	Approved by Finance Business Partner	Simon Ansell 7 th August 2020

A2. Outline Business Case approval *(Date and approving body)*

This FBC is a derivative of the overarching Clean Air Zone Government Final Business Case (GFBC) which was approved by Cabinet on 11th December 2018. The projects covered in this FBC form part of the Clean Air Zone (CAZ) Implementation programme for which grant funding has been secured through the Government's NO₂ Plan Implementation Fund Grant.

Following the GFBC approval, capital grant funding of £14.215 million was subsequently awarded by the Joint Air Quality Unit (JAQU) and accepted by the Council in March 2019. The funding was specifically for the implementation of a CAZ class D in Birmingham as confirmed in letters to the Council dated 20th March 2019.

This FBC supports the approval of spend for the installation and development of:

- Automatic Number Plate Recognition (ANPR) cameras;
- Signage warning of approach, entry and exit to the CAZ;
- The necessary back office system to manage the enforcement of the CAZ;
- IT systems to interface with the Central Clean Air Zone Service (the Central Service); and
- Project management resource to deliver the items above.

More detail is given in section A4.

The total capital expenditure related to this report is £9.218m.

A note on the effect of COVID-19 restrictions

Further to the Council receiving approval from Government on the 6th April 2020 to delay the implementation of the CAZ until no earlier than January 2021, activities associated with delivery of the CAZ were scaled back to reflect the need to redeploy staff elsewhere to support the COVID 19 response. In addition, many contractors and suppliers furloughed their workforce, reducing the ability to engage on contractual matters or undertake physical works due to the social distancing guidance issued by Government. Notwithstanding this position, the Council has publicly remained committed to delivery of the CAZ and recognises the scheme as the best long-term solution to addressing the illegal levels of air pollution found in the city and affecting its most vulnerable residents on a daily basis. In addition, the Council is still subject to a Ministerial Direction mandating the implementation of the CAZ to achieve the target 2021 compliance date to accord with UK legislation and EU directives on air quality.

A3. Project Description

Summary

This FBC concerns the measures being introduced to give effect to the proposed CAZ approved by Cabinet on the 11th December 2018. These include the installation of cameras, signs, and a back-office system, all of which are required for an enforceable CAZ.

Background

Following the Government Issued Air Quality Standard Regulation in 2010, the Department for Environment, Food and Rural Affairs (DEFRA) updated its Air Quality plans and identified Birmingham as a city with significant air quality problems. In response to this the Council has initiated a programme of works which will implement air quality improvements in and around the city centre of Birmingham.

In 2018 the Council produced a GFBC following feasibility studies which justified a CAZ within Birmingham. This was in order to comply with Ministerial Direction which required Birmingham to improve air quality in the shortest possible time.

The CAZ Programme required a number of highways and infrastructure improvement projects to be undertaken in order to create an enforceable CAZ. These projects are, and continue to be, managed by the Council project delivery team, and a supply chain has already been engaged through existing frameworks and other procurement routes available to the Council.

The Cabinet report '*Birmingham Clean Air Zone Submission of Full Business Case and Request to Proceed with Implementation*' was approved by Cabinet on 11th December 2018 but required that further business cases were produced for specific work stream, including the implementation work stream. The report gave delegated authority to named persons to aid progression of the projects. Specifically, in December 2018 Cabinet delegated:

- Authority to the relevant portfolio holders jointly with the Corporate Director, Economy (now Acting Director Inclusive Growth) and the Corporate Director, Finance & Governance (now Interim Chief Finance Officer) to approve the City Councils FBC's up to a value of £10.00m, subject to confirmation of funding; and
- Authority to the Corporate Director, Economy (now Acting Director, Inclusive Growth), the Director of Commissioning and Procurement (now Assistant Director, Development and Commercial), the Corporate Director of Finance and Governance (or their delegate) (now the Interim Chief Finance Officer) and the City Solicitor (or their delegate) to approve and award the necessary procurement activities subject to the necessary funding being made available.

The FBC of December 2018 was approved by the Joint Air Quality Unit and on 28th March 2019 grant funding was received and accepted by the Council; this funding included the £9.218m required for implementing the CAZ.

The Council's delivery team have engaged a number of suppliers to design and develop the CAZ plans. These include appointment of civils contractors for the design and build of the physical infrastructure, appointment of IT service providers and ANPR specialists to develop a back-office enforcement solution, and surveyors to enable detailed cost estimates.

Contracts which have already commenced, and the respective selected contractors, are listed in Section D. All contracts have been tendered in accordance with the procurement strategy set out and approved in the GFBC of December 2018, however contract awards have taken place in advance of FBC approval, or are still required to finalise the contract documentation. Further details on procurement activity are included in section D.

A4. Scope

The implementation and enforcement of the CAZ requires a substantial level of physical and digital infrastructure to ensure effective operation, and give fair and proper warning to motorists using the CAZ.

This requires an ANPR camera network covering all entry and exit routes which is supported by a back-office system. The back-office system interfaces with a national CAZ framework through the Central Clean Air Zone Service to form a complete end-to-end camera enforcement solution.

In principle, the overall solution will allow for the identification of vehicles that are within the CAZ, determination of a vehicle's compliance with the CAZ emissions standards, and reconciliation of those that should have paid but have not. The output is a list of those vehicles for which a charge has not been paid and that do not meet the emissions standards.

The camera network is supported by signage that will effectively communicate to CAZ users the presence and boundaries of the CAZ, the requirement to pay if non-compliant, and the means by which to do it. They will also warn of the presence of cameras to enforce the CAZ.

The scope of works therefore to which this FBC relates is listed below:

- 61 Automatic Number Plate Recognition (ANPR) cameras installed in 40 locations around the edge of the CAZ, as well as 6 additional cameras within the zone; including suitable poles and powers supplies;
- An ANPR camera back office solution to interface between the camera network, the Central Clean Air Zone Service payment system, and enhancements to the existing enforcement system to accommodate the additional PCNs that will result through the enforcement of the CAZ;
- The compilation of a local exemption list which includes the details of vehicles that are not compliant with the CAZ emissions standards but that are exempt in accordance with the Clean Air Zone Charging Order;
- Regulatory signs at the boundary of CAZ to give effect to the charging order;
- Camera enforcement warning signs;
- Advance signs warning of the CAZ around the Middleway (A4540) with Advance signs on the key radials which cross the Middleway, including the gantry signs on the Aston Expressway A38(M) and high-level sign on Soho Hill and Hagley Road; and
- Project Management to deliver projects related to the above.

Further details on the composition and locations of the signs and cameras can be found in Appendix C.

ANPR Cameras and Integrated Solution

An ANPR camera solution has been designed and its construction is underway. The integrated camera solution is made up of several components and a schematic of the overall end-to-end system can be seen in Annex 1 which includes the JAQU Central Clean Air Zone Service functionality.

For additional context if required, a breakdown of the key components in the Council's enforcement solution can be found in Annex 2.

There are four key functions that the Council's components of the overall system will need to deliver.

1. Firstly, vehicle detection and charge settlement. Vehicle entrant information will be sent to the Central Clean Air Zone Service which will return payment and compliance status information. This will be held for the duration of the payment window in order to determine which vehicles

have entered the zone, are not compliant with the emissions standards, and have not paid the relevant charge. The output of this part of the process will integrate with the existing enforcement systems for efficiency.

2. Secondly 'case management'. This is required to enable interrogation of events within the system to determine if Penalty Charge Notices (PCNs) have been accurately administered and upon what basis. This system will also allow the Council to respond to any challenges should they be raised, and process refunds should the Central Clean Air Zone Service incorrectly determine a vehicle's compliance.
3. Thirdly, review and issue PCNs for misuse of the CAZ. This will be enabled by existing processes and systems already utilised by the enforcement team.
4. Fourthly, the Council must compile an exemption list of non-compliant vehicles that are exempt either due to the specifics of the vehicle that make upgrade or retrofit inviable, or because the vehicle owner has been granted a temporary exemption. Details of those exempt were given in the Clean Air Zone: Charging Order and Indicative Allocation Of Net Proceeds report approved by Cabinet in June 2019.

These four key functions are described further below:

Vehicle Detection and Charge Settlement

Vehicle entrant information will be collected by an ANPR network around the city. This information will be downloaded from the cameras wirelessly and processed by a back-office system.

The Council will include functionality within their software solution to enable the system to make multiple queries to the Central Service Charge Settlement Interface (CSI) to establish the payment status of a particular vehicle, and the Vehicle Entrant Interface (VEI) to determine a vehicle's compliance. Both the CSI and VEI are part of the Central Clean Air Zone Service.

Vehicles are detected by the ANPR cameras and the vehicle registration marks (VRM's) are transmitted to the Central Service where their compliance is determined. If the CAZ fee has not been paid by the end of the agreed payment window, which is set at six days in addition to the day of entry, then an 'evidence packet' would be created that the enforcement team will review, and if necessary, issue a Penalty Charge Notice (PCN).

Case Management / Administrative Tools

The solution must provide the necessary investigative tools to the Council so that they may respond to any challenge made by motorists against the validity of a PCN. This must be carried out with sufficient accuracy to ensure that any inaccurate or phoney challenges can be identified, or whether a motorist has a legitimate claim for reimbursement which requires a more detailed investigation.

Without these tools, should a motorist have their challenge or representation rejected and they chose to take this to Traffic Penalty Tribunal (TPT). The ability for Birmingham to demonstrate that the motorist's evidence has been reviewed would be essential. If TPT were to find in favour of motorist, due to Birmingham's lack of sufficient process or due to the lack of a suitable administrative toolkit, this could have significant ramifications on the reputation and operation of the CAZ.

For example, if a motorist makes representations that they believe they had paid for the day in question, and therefore the PCN should be cancelled. The administrative tools will enable Parking Services to query the various systems to check and verify the motorist's representation:

A request to the system would determine whether the vehicle in question entered the Birmingham CAZ on the day in question, or indeed on either subsequent or preceding days.

A request to the Charge Settlement Interface (CSI) would determine whether a payment had been made for the day in question, or indeed on either subsequent or preceding days.

A request to the Gov.uk/Pay system (if available/required) would determine whether the payment was later declined or subject to a chargeback. This is assuming that this information would not be available via an alternative means, such as the CSI.

There may also be a rationale to also query the Vehicle Entrant Interface (VEI) to obtain other essential information regarding the classification of a vehicle, which could not be obtained available via the other interfaces.

Only after reviewing the above information and any documentation supplied by the motorist would it be possible to accept or reject the representation.

Issuance of PCNs and Enforcement

The key output of the CAZ solution is a list of vehicles which have entered the zone, are not compliant, and for which a charge has not been paid. This output will feed into the Councils existing enforcement solution and adaptations to Metro Review and 3Sixty will be made to enable direct communication and integration with the CAZ solution. PCNs will therefore be generated and managed in line with existing procedures. More details on these components can be found in Annex 2.

Exemption Listing

The Council has granted temporary and permanent exemptions to a number of vehicle types or user groups either in response to concerns raised in the consultation, or to align with precedence set through exemptions to vehicle excise duty in the Vehicle Excise and Registrations Act 1994. In order to develop a local exemption list, the Council is collecting information from those who may be eligible so that their vehicle details may be added if approved.

This local exemption list will feed into the camera solution so that those VRMs captured will not be sent to the Central Service as part of the payment reconciliation loop. The exemption list will be managed by Council staff to ensure ongoing eligibility and additions as required.

In the case of local hospital exemptions, a voucher scheme is in development to permit visitors to enter a code rather than make a payment for CAZ charges. These vouchers will be developed within the camera solution remit and costs.

Some of the elements of the system described in Vehicle Detection and Charge Settlement, and the requirements for Administrative Tools, are additional deliverables that have come about as a result of a change in the outputs from the Clean Air Zone Central Service. These changes have arisen as the Clean Air Zone Central Service has developed and evolved, and the Council has therefore had to amend the scope of its works to adapt to these changes. The scope detailed in this section is expected to remain materially unchanged for the remainder of implementation.

A5. Scope Exclusions

Other aspects of the wider CAZ programme are not included in the scope of this FBC. These include, but are not limited to:

- CAZ Mitigations programme funded through the Clean Air Fund;
- Work streams being undertaken by JAQU;
- Monitoring and evaluation of the CAZ; and
- The Proposed Additional Measures Controlled Parking Zone and Network Changes, which will be subject to separate FBCs.

B. STRATEGIC CASE

B1. Project Objectives and Outcomes

The case for change including the contribution to Council Plan objectives and outcomes

Programme Objectives

The CAZ Implementation Programme seeks to introduce a fully functioning and enforceable CAZ in the city centre. This is in support of a wider air quality objective by improving the vehicle emissions related impact on air quality, specifically the amount of NO_x, within the CAZ.

The projects related to this FBC directly contribute to the achievement of the programme objectives and will:

- Utilise £9.218m of Government grant funding to establish an enforceable CAZ in Birmingham;
- Improve air quality within the CAZ by encouraging CAZ users to reduce their emissions by upgrading to compliant vehicles, using alternative means of transport, or rerouting to avoid the CAZ where possible; and
- Directly respond to the Ministerial Direction received by the Council (Environment Act 1995 (Birmingham City Council) Air Quality Direction 2019) by implementing the agreed measures in relation to the Air Quality Plan for tackling roadside nitrogen dioxide concentrations.

Council Objectives

The implementation of these schemes will support the delivery of the wider CAZ objectives. This is consistent with the City Council's Plan 2018-2022 (2019 update):

- **Birmingham is an entrepreneurial city to learn, work and invest in** - We want a city that invests in its people, so that everyone can have opportunities to realise their potential through lifelong learning, skills and good jobs. We want to invest in the buildings and transport connections of our city to provide better places to live and work, and to enable businesses to prosper.
 - The CAZ will encourage investment compliant methods of transportation and promote a healthy environment in which people can learn, live and work.
- **Birmingham is a fulfilling city to age well in** - We want citizens to live more active, longer, healthier and independent lives. We want to reduce social isolation so that people can make positive choices and take control of their wellbeing.
 - Improving air quality will have a direct impact on the health and wellbeing of citizens and visitors to the city centre. People are encouraged and financially incentivised to use public transport rather than commuting in non-compliant vehicles.
- **Birmingham is a great, clean and green city to live in** - We want Birmingham to be a sustainable city of vibrant culture and flourishing neighbourhoods, with good quality housing. A city with clean air, safe and clean streets, and green spaces. We want to be a city where our citizens have pride in where they live, have a strong sense of belonging, and a voice in how Birmingham is run.
 - The CAZ will directly improve air quality in the city centre. This is a further step on the way to a clean and sustainable city.
- **Birmingham is a city that takes a leading role in tackling climate change** - Climate change is an urgent issue with a global reach that directly impacts upon Birmingham residents. We will work with our partners to tackle this issue to make Birmingham a city in which all of our residents, including those from our most deprived communities, can lead healthy, safe, fulfilling lives.
 - The scheme supports the Additional Climate Change Commitments agreed by Cabinet on 30th July 2019 following the motion on Climate Emergency passed at the full City Council meeting of 11th June 2019, including the aspiration for the City Council to be net zero-carbon by 2030. Birmingham is one of the first cities to implement a CAZ, and the very first to operate a Charging CAZ type D. It is at the forefront of change in this area and will set the bar for future cities who wish to tackle air quality for their citizens.

B2. Project Deliverables

These are the outputs from the project e.g. a new building with xm² of internal space, xm of new road, etc

The project deliverables include those items identified in section A4, less the project management resource required to deliver them. These are listed again below for completeness:

- 61 Automatic Number Plate Recognition (ANPR) cameras installed in 40 locations around the edge of the CAZ, as well as 6 additional cameras within the zone; including suitable poles and powers supplies;
- An ANPR camera back office solution to interface between the camera network, the Central Clean Air Zone Service payment system, and enhancements to the existing enforcement system to accommodate the additional PCNs that will result through the enforcement of the CAZ;
- The compilation of a local exemption list which includes the details of vehicles that are not compliant with the CAZ emissions standards but that are exempt in accordance with the Clean Air Zone Charging Order;
- Regulatory signs at the boundary of CAZ to give effect to the charging order;
- Camera enforcement warning signs; and
- Advance signs warning of the CAZ around the Middleway (A4540) with Advance signs on the key radials which cross the Middleway, including the gantry signs on the Aston Expressway A38(M) and high-level sign on Soho Hill and Hagley Road.

B3. Project Benefits

Measure	Impact
61 Automatic Number Plate Recognition (ANPR) cameras installed in 40 locations around the edge of the CAZ, as well as 6 additional cameras within the zone; including suitable poles and powers supplies.	The ANPR cameras will utilise technology to monitor vehicles using the CAZ. Given the volume of traffic that enters Birmingham each day (in excess of 150,000 vehicles) an automated system is required for viable monitoring. The number of locations and cameras has been optimised for efficiency.
An ANPR camera back office solution to interface between the camera network, the Central Clean Air Zone Service payment system, and enhancements to the existing enforcement system to accommodate the additional PCNs that will result through the enforcement of the CAZ.	The CAZ enforcement solution will interface with existing enforcement mechanisms to prevent duplication within the Council. It will also interface with the Central Clean Air Zone Service to utilise the Governments national framework for determining vehicle compliance and receiving payments
The compilation of a local exemption list which includes the details of vehicles that are not compliant with the CAZ emissions standards but that are exempt in accordance with the Clean Air Zone Charging Order.	Collating a local exemption list will enable the Council to manage vehicles which are not compliant, but which are exempt from charging. These vehicles are identified broadly in the Birmingham Charging Order which will be in place prior to the CAZ go live.
Regulatory signs at the boundary of CAZ to give effect to the charging order.	These signs will give fair and proper warning to motorists of the CAZ existence and boundaries.

Camera enforcement warning signs	These signs will identify the presence of ANPR cameras to motorists.
Advance signs warning of the CAZ around the Middleway (A4540) with Advance signs on the key radials which cross the Middleway, including the gantry signs on the Aston Expressway A38(M) and high-level sign on Soho Hill and Hagley Road.	These signs will give fair and proper warning to motorists of the CAZ existence to allow re-routing where possible.

B4. Benefits Realisation Plan

Set out here how you will ensure the planned benefits will be delivered

The proposed benefits will be delivered through the effective implementation of a functioning CAZ in Birmingham which this FBC supports.

Each project within the scope of this FBC contributes to the proper enforcement of the CAZ which will actively drive travel behavior and vehicle fleet upgrades to enable compliance with air quality targets.

Whilst the zone will inherently generate revenue, this is not the objective of its introduction. Indeed, a successful scheme would see an increase in compliant vehicles using the CAZ and minimal revenue generated.

Risks are frequently identified and reviewed, with mitigating actions agreed at project level, or escalated to the Brum Breathes Programme Board where necessary.

Project progress is monitored at the Brum Breathes Programme Board on a monthly basis, which coincides with monthly Executive Board meetings which provides an additional escalation route if required.

B5. Stakeholders

The results of the consultation and stakeholder engagement were summarized in the Cabinet Member report of the 11 December 2018 - Birmingham Clean Air Zone Submission of Full Business Case and Request to Proceed with Implementation.

C. ECONOMIC CASE AND OPTIONS APPRAISAL

This sets out the options that have been considered to determine the best value for money in achieving the Council's priorities

C1. Summary of options reviewed at Outline Business Case

(including reasons for the preferred option which has been developed to FBC)

If options have been further developed since the OBC, provide the updated Price quality matrix and recommended option with reasons.

The economic case for the CAZ was made in the Government Full Business Case approved by Cabinet on 11th December 2018. It outlined the requirement for a CAZ, and more specifically the need for a CAZ type D.

In order to realise the benefits set out in the overarching business case, the projects to which this report relates are essential and will enable the proper and comprehensive enforcement of the CAZ.

C2. Evaluation of key risks and issues

The full risks and issues register is included at the end of this FBC

The COVID-19 restrictions have impacted the Council's supply chain, and a key issue now is the delay in completing the Civils works required for the installation of the ANPR cameras and CAZ signs. This in turn may impact on the associated back office solution which cannot be completed until all cameras are installed. In addition, the delay in installing the cameras will reduce the time to complete testing of the system.

The complete end to end solution has been designed to integrate with the Government provided Central Clean Air Zone Service developed by JAQU. There is therefore a dependency on that system operating fully and accurately so that the Council can receive accurate and timely information for enforcement. Further, JAQU have been developing their solution concurrently to local authorities which has meant a definitive solution has not been available until relatively recently. This has been a significant risk to the programme because waiting until a definitive solution was available to begin works was not an option due to the delivery timescales, but this has also meant additional work for the Council as JAQU's deliverables have changed. The Council continues to maintain a proactive and collaborative relationship with JAQU to remove uncertainty wherever possible.

Another key risk to delivery has been the timely engagement of contractors to in turn ensure the necessary works are completed on time. This has been mitigated through immediate engagement of contractors and also the use of a smaller work packages which have been let ahead of approval of this FBC.

A significant risk to the programme has been, and continues to be, the evolving requirements of local authorities planning to introduce charging CAZs. These requirements are set out in a guidance 'note' and provide an overview of the various roles and responsibilities of a CAZ local authority and the central service as well as the digital components and physical infrastructure required for an enforceable CAZ. The latest version of this guidance note was published on 22nd May 2020. For the first wave of CAZ local authorities changes to the expected deliverables can present significant challenge to the delivery programme, especially as many decisions about implementation have already been made in line with the desire to launch a CAZ and achieve compliance with the air quality standard in the shortest possible time. One such change to delivery roles and responsibilities has been the creation of a complete end-to-end back office IT solution which enables effective CAZ enforcement. In the original target operating model this service was to be provided by the central service (JAQU). This is now the responsibility of CAZ local authorities, and it is proposed that the Council will modify its existing contract with its supplier to accommodate the additional scope. In order to mitigate the risk of challenge to the existing contract modification, the Council published a voluntary ex ante transparency (VEAT) notice on 17th June 2020 to which no formal challenges were received from the market. The Council continues to engage with JAQU proactively and positively to remove uncertainty wherever possible.

Whilst the market has not raised any formal procurement challenges with the Council during the 10 days standstill period following the publication of the VEAT Notice on 17th June 2020, there is a small risk that a supplier could still challenge the grounds set out in the Notice. Appendix F explains further the timescales for raising a procurement challenge and potential award for damages.

Ongoing risks are being monitored as part of the wider CAZ programme through the existing bi-weekly progress meetings, Technical Board and Brum Breathes Programme Board. Mitigating actions are agreed and enacted through these meetings, with key issues escalated to the Brum Breathes Executive Board. In addition, specific construction risks are dealt with through regular construction board meetings and where necessary are escalated to the Brum Breathes Programme Board.

C3. Other impacts of the preferred option

Describe other significant impacts, both positive and negative

Not applicable.

D. COMMERCIAL CASE

This considers whether realistic and commercial arrangements for the project can be made

D1. Partnership, joint venture and accountable body working

Describe how the project will be controlled, managed and delivered if using these arrangements

The project will be controlled and managed through contracts called off existing frameworks available to the Council. The majority of procurement activity has taken place, with only the activity outstanding being the contract awards for some smaller civil engineering signage packages and ongoing maintenance. More detail on the procurement activity to date is provided in section D2.

D2. Procurement implications and Contract Strategy

What is the proposed procurement contract strategy and route? Which Framework, or OJEU? This should generally discharge the requirement to approve a Contract Strategy (with a recommendation in the report).

The procurement strategy was agreed as part of the FBC approved by Cabinet on 11th December 2018, which included the following procurement activities:

Civil Engineering Works

- Main Civils Works – further competition exercises using the Council’s Highways and Infrastructure Works Framework Agreement 2014 –18 (extended to March 2020).
 - Stage 1 of the main civils contract was awarded in June 2019 and has now been completed. However, the Council and its contractor were unable to agree a target price for the civils work and the parties were subsequently unable to take the contract forward into stage 2.
 - Stage 2 - the procurement strategy agreed by Cabinet remains appropriate, therefore, works have been broken down into smaller work packages to provide the opportunity for the contractors on smaller lots within the existing framework to have the opportunity to bid for the work.
- Tables 1 to 3, below, detail contracts which have been awarded, contracts requiring award and contracts yet to be tendered for. In each case, procurements have and will be undertaken in accordance with the agreed procurement strategy detailed above.

ANPR Cameras and IT Back Office Solution

- Technology Works – were procured through an existing Capita ICTDS contract.
- Table 4, below, details contracts which have been awarded in accordance with the agreed procurement strategy detailed above.

Stages 1 and 2: Civil Engineering Works – Contracts Awarded

Procurement processes have been completed and details of contract awards are detailed in table 1 below.

Table 1

Description of Works	Supplier	Approver	Date
Stage 1: Pre-Contract Works – Design of Civils Works	Jacksons	Corporate Director, Economy, the Director of Commissioning and Procurement, the Corporate Director of Finance and Governance and the City Solicitor	14 th June 2019
Stage 2: Construction of Civils Works:			
CAZ - Signage (Contract 1)	RW Services Civil Engineering Ltd	Head of Transport Projects, Transport and Connectivity under scheme of delegations	19 th December 2019
CAZ - Signage (Contract 2)	RW Services Civil Engineering Ltd	Head of Transport Projects, Transport and Connectivity under scheme of delegations	19 th December 2019
CAZ - Signage (Contract 3)	RW Services Civil Engineering Ltd	Head of Transport Projects, Transport and Connectivity under scheme of delegations	19 th December 2019
CAZ - Signage (Contract 4)	Parade Civil Engineering Ltd	Head of Transport Projects, Transport and Connectivity under scheme of delegations	14 th February 2020
CAZ - Signage (Contract 5)	RW Services Civil Engineering Ltd	Head of Transport Projects, Transport and Connectivity under scheme of delegations	20 th April 2020

Stage 2 Civils Engineering Works – Contracts Requiring Award

The following table details the three stage 2 civil engineering works contracts which require approval to award via delegated authority in accordance with the delegated procurement route (DPR). These works have begun without a formal contract award, though the contractors have been engaged under the terms and conditions of the contracts that were tendered and finalising the documents is a priority upon approval of this FBC.

Table 2

Description of Works	Supplier
Camera Poles and Electrics (East)	Fitzgerald Civil Engineering Ltd
Camera Poles and Electrics (West)	Fitzgerald Civil Engineering Ltd
Gantry and Bridge Signs	Fitzgerald Civil Engineering Ltd

Stage 2 Civils Engineering Works - Contracts yet to be Tendered

Table 3, below, details stage 2 contracts which have not yet been tendered for and will be procured in accordance with the approved procurement strategy detailed above. Subsequent contract awards will be made via delegated authority in accordance with the DPR process.

Table 3

Description of Works	Supplier
CAZ - Signage (Contract 6)	<i>Work not yet tendered</i>
CAZ - Radial (Contract 7) East	<i>Work not yet tendered</i>
CAZ - Radial (Contract 8) West	<i>Work not yet tendered</i>

ANPR Cameras and IT Back Office Solution – Contracts Awarded

The following table details IT related contracts which were procured by Capita ICTDS on behalf of the Council and were subsequently novated back to the Council in July 2019. Contract awards are detailed in the table below.

Table 4

Description of Services	Supplier
ANPR Cameras and back office IT solution	ICTDS / Siemens
PCN Enforcement Solution	Siemens – related to the above business solution, ANPR Cameras and back office IT solution - Contract Modification (please refer to the below section for further details)
Imperial 3Sixty Upgrade	ICTDS / Imperial
Permit Smarti for Whitelist	ICTDS / Imperial
Hospital Whitelist Solution	ICTDS / Imperial
Hospital Voucher Production	ICTDS / CDS
Grant Management Scope	ICTDS
Grant Management Solution	ICTDS
Metro Upgrade	ICTDS

Cameras and IT Back Office Solution – Contract Modification

Cameras and IT Back Office Solution – this element includes the procurement of the cameras and the back-office system that enables camera information to be processed. It also interfaces with the JAQU payment system to identify nationally exempt vehicles, those which have paid, and ultimately identify vehicles for which Penalty Charge Notices should be produced for non-payment. It is an integral part of the system and forms part of the overall ANPR camera solution.

In reference to paragraphs 2.8 to 2.10 detailed in the associated Cabinet Member's report, since the procurement of the ANPR enforcement solution from Siemens in April 2019, and at the start of the new financial year, JAQU has transferred the responsibility of the PCN enforcement solution to the Council. Given that this technology is integral to the existing ANPR functionality, the Council will modify its existing contract with Siemens to deliver the required solution in accordance with the Procurement Contract Regulations 2015 and Regulation 72: Modifications To Contracts During Their Term.

Given that the original ANPR cameras and IT solution was not procured in accordance with PCR2015, (for reasons set out in paragraphs 3.9 to 3.11 in the Cabinet Member's report) a VEAT notice was issued to the market to notify it of the proposed modification of the existing ANPR Camera and IT solution contract, prior to the modification taking place. This necessary action was taken to mitigate against the risk of a procurement challenge.

Following publication of the VEAT Notice on 17th June 2020 no procurement challenges have been raised.

Cameras and IT Back Office Solution – Support and Maintenance

To enable the delivery of the CAZ the following support and maintenance activity will need to be carried out:

- **Communications**
 - 10GB Per Month / Per Camera
- **AWS Hosting**
 - Amazon Web Services (AWS) Cloud based Infrastructure
- **SOC Support**
 - Siemens Service Operation Centre (24/7/365)
- **Annual Inspection**
 - Incl Camera Inspection, Cleans & Lighting Check
- **Annual Ground Truthing**
 - Ground Truthing Processing (Data Numeration)
- **Reactive / Fault Support**
 - Fault Response as Per Service Level Agreement
- **Software Support**
 - CAZ ERCU ZenGrab Software License & Software Support
- **Software Support**
 - Outstation Software Support

The following procurement options were considered for these services:

- **Open procurement** – This was discounted as the proprietary software and equipment used for the CAZ solution is exclusive to Siemens and therefore cannot be supported by any other supplier. Therefore, an open procurement would not be possible.
- **Direct Award (SCN)** – This is the preferred option as it allows the Council to contract directly with Siemens for support and maintenance subject to the justification satisfying the criteria for single contractor negotiations (SCN).
- **Do Nothing** – This is not an option as it would leave the CAZ solution without the support and maintenance required for the CAZ to operate.

An SCN report will be submitted outlining the justification for a direct award and the planned negotiations. Subject to approval, negotiations will be carried out by the IT&D Commercial team to

validate Siemens support and maintenance costs. The final support and maintenance offer will be submitted for approval via delegated authority in accordance with the DPR process.

D3. Staffing and TUPE implications

No implications (see executive report.)

E. FINANCIAL CASE

This sets out the cost and affordability of the project

E1. Financial implications and funding

The figures referred to below are mirrored in the original FBC and CAZ financial model approved by Cabinet on 11th December 2018 and remain appropriate for assigned tasks.

Capital Costs

The total capital cost for the works covered by this report is broken down in the table below:

Table 1

			2019/20	2020/21	Total
			£m	£m	£m
CAPITAL EXPENDITURE					
Capital costs :					
	Detailed Design		0.799		0.799
	Signage			2.133	2.133
	Camera Solutions			3.087	3.087
	IT Back Office Solution			1.555	1.555
	Project Management		0.535	1.109	1.644
Total capital expenditure			1.334	7.884	9.218
CAPITAL FUNDING:					
Implementation costs funded by:					
	Clean Air Implementation Grant from DEFRA		1.334	7.884	9.218
Total capital funding			1.334	7.884	9.218
Note 1; A separate Risk Pot has been set aside to cover any identified risk as part of the CAZ Delivery Programme					

Revenue Costs

Table 2

			2019/20	2020/21	2021/22	Later Yrs	Total	
			£m	£m	£m	£m	£m	
REVENUE CONSEQUENCES								
Operating period expenditure:								
	Sign Maintenance		0.000	0.004	0.007	0.056	0.067	
	ANPR Maintenance		0.000	0.200	0.450	3.600	4.250	
	ICT Service Level Agreement		0.000	0.200	0.200	1.600	2.000	
Net revenue consequences			0.000	0.404	0.657	5.256	6.317	
REVENUE FUNDING:								
	CAZ Operating Income			(0.404)	(0.657)	(5.256)	(6.317)	
Total revenue funding			0.000	(0.404)	(0.657)	(5.256)	(6.317)	
Net Balance			0.000	0.000	0.000	0.000	0.000	

E2. Evaluation and comment on financial implications

Capital

The Council accepted the Implementation Grant Funding from JAQU of £14.215m on 28th March 2019. £9.218m of this funding was allocated to the implementation of the main CAZ infrastructure (civils and camera solution) as detailed in section A4 (scope).

Table 3 below illustrates the current budget of £9.218m.

As the CAZ project progresses it remains within the funding envelope and indications from suppliers reinforce this position. The Council is confident that, including the risk allocation, the works can be delivered within this budget.

Table 3

Scheme Element	Project Budget (£m)	Comment
Detailed Design	0.799	Detailed design is complete.
Signage	2.133	Current estimate based on tender prices and awarded contracts. Actual costs are likely to be higher but within budget.
Camera Solutions	3.087	An integrated solution is being developed for the provision of a camera network and back office system. These two deliverables are therefore best reported together.
IT Back Office Solution	1.555	
Project Management	1.644	
Total Expected Costs	9.218	Council staff project management costs.

A further breakdown of the costs that inform the figures in Table 3 is included in the Appendix F.

A number of the contracts have associated terms which drive value for money through mechanisms which do not permit absolute cost certainty until those contracts are complete.

The grant award letters do not contain any funding claw-back provisions.

Any shortfall will have to be met from the risk allocation agreed as part of the total CAZ FBC in December 2018. In addition, in line with the terms and conditions of the grant funding, should these projects be completed within the allocated budget, the remaining funds will be carried forward alongside the programme risk allocation to fund any increased costs as required, helping to ensure delivery of the wider CAZ programme.

Additional works to the back office IT solution must be undertaken by the Council as a result of a change in JAQU deliverables as detailed in this FBC, and the costs and financial risks associated with this option detailed in Appendix F. The estimated cost associated with this work is included in the total capital costs in section E1, Table 1 above.

Revenue

The CAZ will incur operating and maintenance costs for the duration of its enforcement, some of which will derive from the installation of the cameras, signs and systems to which this report relates. All operational and maintenance costs incurred will be funded by the CAZ revenue, generated by payment of CAZ charges.

The costs and funding were detailed and captured in the overall CAZ Programme FBC approved by Cabinet on 11th December 2018 which included the following:

- Sign maintenance – required maintenance for road signs.
- ANPR camera maintenance – required maintenance for ANPR cameras.

- IT support and maintenance – annual maintenance charge to support IT back office.

The operating costs are estimated to total £0.657m annually, as detailed below: This is a decrease of £0.373m from the £1.030m stated for operation and maintenance in the FBC approved in December 2018. This decrease has resulted from more accurate information being available from the Council's suppliers. These costs are broken down below:

Sign Maintenance - As part of the City Council's obligations under the Highway Maintenance and Management Private Finance Initiative (HMMPFI) contract, Birmingham Highways Limited have been formally notified of the proposed changes to the highway inventory resulting from the introduction of the CAZ signs. This change amounts to £0.007m per year in additional maintenance.

ANPR Camera Maintenance – The designed solution will incur ongoing operations and maintenance costs for the following activities:

- Communications (wireless, between the cameras and systems)
- Hosting of web services
- Operations centre support
- Annual inspection
- Annual ground truthing
- Emergency support (to maintain an enforceable CAZ within minimal downtime)
- Software licences
- Exemption Listing

These activities are anticipated to cost £0.450m annually and will be funded by the CAZ income from the payment of charges.

ICT SLA - The IT costs for the system and back office function set up and development are covered in the scope of this report. The IT system will be supported through a service level agreement with the Council's IT department, the ongoing costs of which are estimated to be £0.200m per year. These form part of the overall CAZ operating costs.

E3. Approach to optimism bias and provision of contingency

Optimism bias has not been applied to figures included in this report, as this applies to economic appraisal aspects. However, a risk pot has been set aside to cover those key risks identified in the development of the scheme and have been agreed by JAQU and included in the Grant Award. This risk pot is managed at programme level. Additionally, any efficiencies generated through elements of the scheme included in this report will be used to fund shortfalls elsewhere in this scheme if required, before the programme risk allocation is utilised.

Further information is provided in E2 above.

E4. Taxation

Describe any tax implications and how they will be managed, including VAT

The maintenance of highways is a statutory function of the Council such that any VAT paid to contractors or on the acquisition of land is reclaimable.

F. PROJECT MANAGEMENT CASE

This considers how project delivery plans are robust and realistic

F1. Key Project Milestones

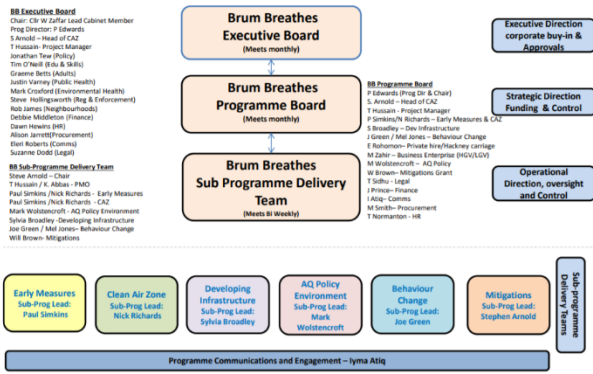
The summary Project Plan and milestones is attached at G1 below

Planned Delivery Dates

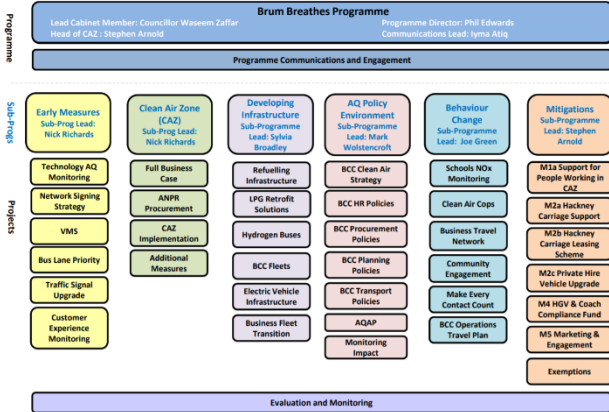
Detailed Design commenced	June 2019
Detail Design complete	December 2019
Full Business Case approval	August 2020
Charging Order Issued	Expected Summer 2020
Contractors appointed	Ongoing
Works commenced	Jan 2020
ANPR Cameras Installation Complete	September 2020
IT Solutions Integrated into JAQU Systems	November 2020
Works complete	December 2020
Date of Post Implementation Review/Lessons Learned	6 Months Post Completion
F2. Achievability	
<i>Describe how the project can be delivered given the organisational skills and capacity available</i>	
<p>In light of the recent developments regarding the COVID-19 pandemic, the delivery schedule is considerably at risk. The intention remains to deliver the works as soon as possible, and the schedule will be reviewed and updated on a regular basis.</p> <p>The Civil Engineering element such as sign installation is a routine activity that is delivered by the Project Team.</p> <p>The ANPR Camera Solution is similar to the Bus Lane Enforcement system that currently operating within the city. The output from the Camera Solution will interface with the existing Enforcement IT system which is currently used for Bus Lane Enforcement and Parking Enforcement.</p> <p>Human resource where required has been augmented using consultancies either to provide additional design support or project management as required.</p>	
F3. Dependencies on other projects or activities	
<p>A key dependency for the project stems from the current restrictions on the UK population, and therefore workforce, due to the COVID-19 pandemic. The project will incur delay until such time as the restrictions are lifted and works can commence once again. The Council is in regular dialogue with its contractors so to understand what is achievable in the circumstances.</p> <p>The implementation of the CAZ and the ability to charge for entry is dependant on the Vehicle Compliance Checker and Payment Portal which are being managed by JAQU and are out of the scope of this report. These elements form part of the Central Clean Air Zone Service and are required to function properly to enable a full end to end solution. The scope of the Council's works includes testing and integration of the Council's systems only, not testing the systems JAQU are developing.</p> <p>JAQU are developing an Operational Level Agreement which will detail the roles and responsibilities of the parties to that agreement and also contain the necessary data sharing agreements to manage the information flowing between systems in accordance with GDPR. The agreement must be agreed and signed before the CAZ can be enforced.</p>	
F4. Officer support	
Project Manager:	Nick Richards – Transport Delivery Specialist

Tel: 0121 675 7325 Email: Nicholas.richards@birmingham.gov.uk	
Programme Manager:	Stephen Arnold – Head of Clean Air Zone Tel: 0121 675 6520 Email: Stephen.Arnold@birmingham.gov.uk
Project Accountant:	John Prince – Interim Commercial Project Accountant Tel: 0121 303 5519 Email: John.Prince@birmingham.gov.uk
Project Sponsor:	Philip Edwards – Assistant Director Transport and Connectivity Tel: 0121 303 6467 Email: Philip.Edwards@birmingham.gov.uk
F5. Project Management	
<i>Describe how the project will be managed, including the responsible Project Board and who its members are</i>	
<p>The project will be managed through the Brum Breathes programme board and monitoring arrangements for the overall CAZ. Key members are as follows:</p> <p>Executive Board – Councillor Waseem Zaffar – Cabinet Member for Transport and Environment</p> <p>Project Sponsor – Phil Edwards - Assistant Director Transport and Connectivity</p> <p>Senior Responsible Officer – Phil Edwards – Assistant Director Transport and Connectivity</p> <p>Programme Manager - Stephen Arnold - Head of CAZ –Project Manager – Nick Richards – Transport Delivery Specialist</p> <p>Project Accountant – John Prince – Interim Commercial Project Accountant</p> <p>A schematic of the Brum Breathes governance and management structure can be seen below. Regular reporting on project milestones and deliverables is undertaken at monthly Brum Breathes Programme Boards. These Boards also monitor and manage risks and the associated mitigating actions. Key issues are escalated to the Brum Breathes Executive Board, which also sits monthly and receives high level reporting of decisions, actions and risks agreed by the Programme Board.</p>	

Brum Breathes Programme (Delivery Stage) Governance



Brum Breathes Delivery Stage Programme Structure



The camera solution deliverables and integration which were originally procured through Capita are now being managed by the Council's ITDS team.

G. SUPPORTING INFORMATION

(Please adapt or replace the formats as appropriate to the project)

G1. Project Plan

Detailed Project Plan supporting the key milestones in section F1 above

Please see Appendix E which contains the current programme.

G2. Summary of Risks and Issues Register

Risks should include Optimism Bias, and risks during the development to FBC

Grading of severity and likelihood: High – Significant – Medium - Low

		Risk after mitigation:	
Risk or Issue	Mitigation	Severity	Likelihood
1. Issue – COVID-19 related Government restrictions on the UK population and workforce will delay implementation and development works.	Regular dialogue with the supply chain to understand what is achievable under the circumstances.	High	Realised
2. Issue – Council unable to progress to Stage 2 (construction) with original contractor.	Re tendering of work, split into smaller work packages, to engage other contractors on existing frameworks.	Medium	Realised
3. Issue – Ongoing integration with the Central Clean Air Zone Service has lead to additional, originally unidentified, works.	A separate programme-wide risk allocation will be used to mitigate the financial impact. A further funding request has been sent to JAQU to cover anticipated additional scope.	Medium	Realised
4. Risk – Late instruction of contractors could leave to delay to ‘go-live’.	The contractors have been engaged early and have mobilised.	Medium	Low
5. Risk – Delay to instalment of camera will leave less time for systems integration and testing.	Work to integrate systems is underway using ‘dummy data’ to concurrently reduce the integration risk.	Medium	Medium
6. Risk – Installation of signs may require reinforcement of gantry’s/existing infrastructure.	Structural surveys will be conducted, and smaller signs used where necessary in the interim.	Low	Medium
7. Risk - Additional road closures required to facilitate sign instalment and other civils works.	Utilise or extend existing road closures where possible.	Low	Medium
8. Risk - Additional development activities to ensure full integration with	Close liaison with JAQU to get foresight of additional requirements. Council developers to assess current	Medium	Medium

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JAQU systems, noting that the final requirements are yet to be released by JAQU to the Council.	requirements and highlight areas of concern.		
9. Risk - Increased contractor costs resulting from the COVID-19 restrictions and delays.	Contractors to develop method statements which comply with Government restrictions.	Medium	High
10. Risk - Project management costs incurred from additional delays.	Continue to review project management resource requirements.	High	Medium
11. Risk – Court intervention on unclear grounds for justifying the direct award contained within the VEAT.	VEAT published and no response for potential challengers received	Low	Low

G3. External funding and other financial details

Description of external funding arrangements and conditions, and other financial details supporting the financial implications in section E1 above (if appropriate)

The Council accepted the Implementation Grant Funding from JAQU of £14.215m on 28th March 2019. £9.218m of this funding was allocated to the implementation of the main CAZ infrastructure (civils and camera solution) as detailed in section A4 (scope).

The letters to the Council awarding the grant funding can be seen on the Committee Management Information System (CMIS) under reference 006463/2019.

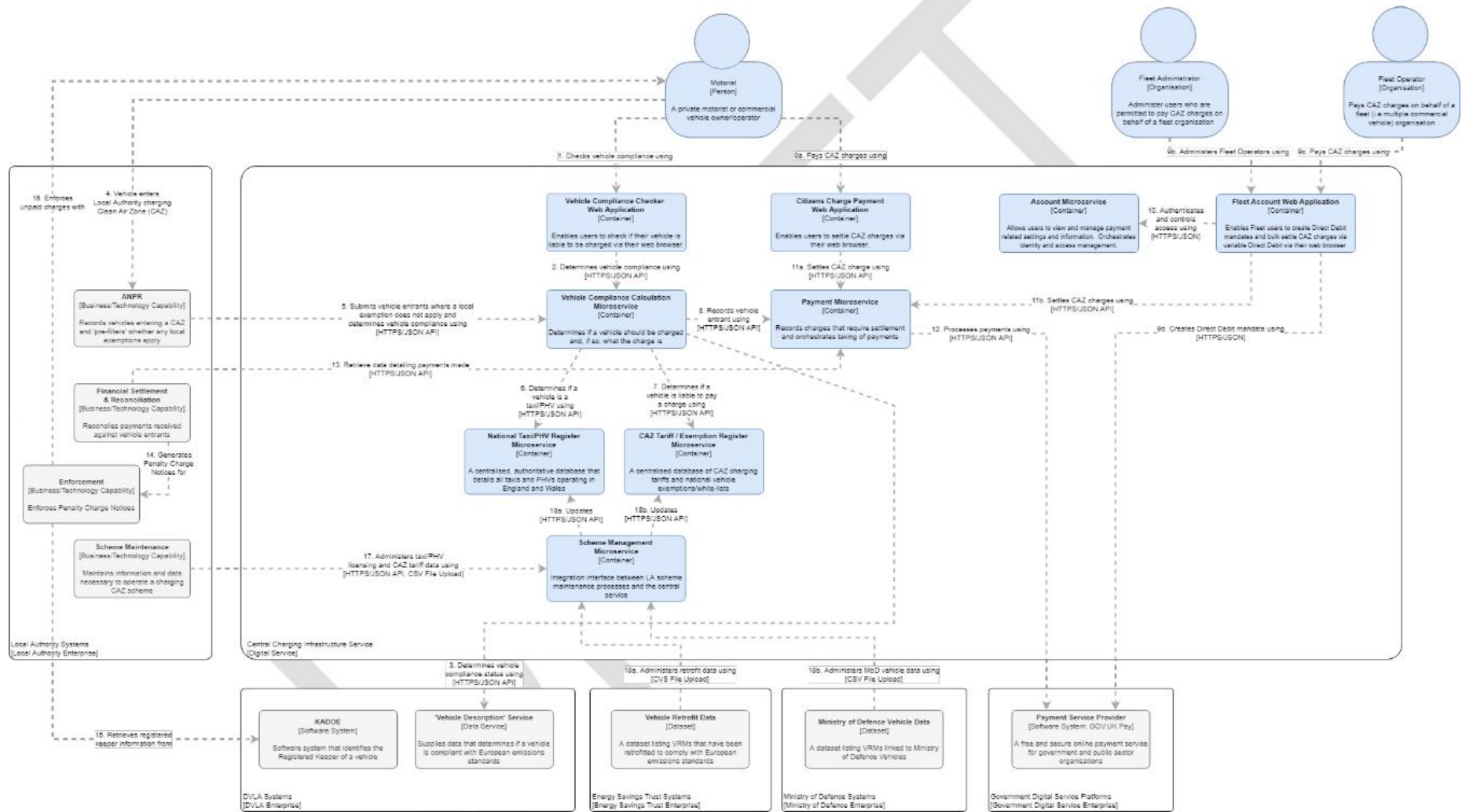
G4. Stakeholder Analysis

Stakeholder	Role and Significance	How stakeholder relationships will be managed
Civils Contractors	Responsible for the timely delivery of the civils infrastructure work.	Managed through utilisation of existing framework contracts and project manager interfaces.
Birmingham City Council Officers and Representatives	A unified effort across Council bodies is required to implement the Clean Air Zone.	Managed through regular reporting and governance at programme and executive board.
Joint Air Quality Unit	Funding body for the Clean Air Zone, and key player in the integration of back office systems to achieve functionality.	Regular interfaces between the Council IT contractor and JAQU IT systems teams.
Members of the public	Will be directly impacted by the introduction of the Zone.	Regular engagement events are held with representatives from the Clean Air Zone team at Ward meetings and well publicised 'drop in' sessions.

A comprehensive stakeholder engagement plan for the Clean Air Zone in its entirety was detailed in the 11th December 2018 Cabinet report and associated FBC. It can be found in Appendix 5C to that FBC.

Other Attachments	
<ul style="list-style-type: none"> • Appendix B - EQUA120 Birmingham Clean Air Zone Submission of FBC and request to proceed with implementation • Appendix C – Location Plans showing Cameras and sign location. • Appendix D - Risk Register • Appendix E – Indicative Programme(etc) • Appendix F – Exempt Information <p>Not attached but available for reference:</p> <ul style="list-style-type: none"> • Tackling Air Quality in Birmingham - Clean Air Zone – Submission of Business Case to Government, Cabinet Report 10th Sept 2018. CMIS Reference 005425/2018. • Birmingham Clean Air Zone Submission of Full Business Case and Request to Proceed with Implementation, Cabinet Report 11th December 2018. CMIS Reference 005939/2018 • Clean Air Zone Grant Acceptance Cabinet report dated 28th March 2019. CMIS Reference 006463/2019 • Clean Air Zone: Charging Order and Indicative Allocation of Net Proceeds, Cabinet Report 25th June 2019. CMIS Reference 006457/2019. 	

ANNEX 1 to APPENDIX A



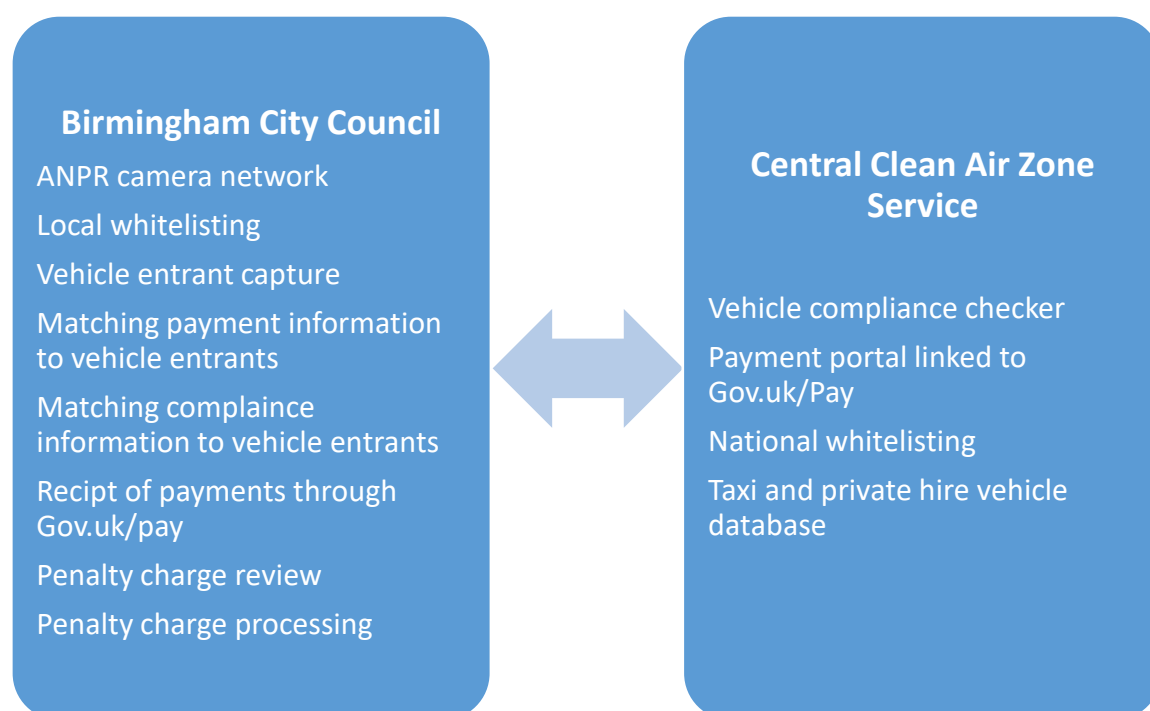
Description of CAZ Components and Operation

1 Introduction

Birmingham City Council are introducing a Clean Air Zone (CAZ) to address the issue of air quality in the City, specifically by targeting roadside nitrogen oxide (NO_x) emissions from motor vehicles. This will be enforced using ANPR technology to identify vehicle entries and determine vehicle compliance and the end to end system is made up of a number of components delivered by different organisations.

This document identifies the key system components in the process and provides a short description of the anticipated role of each component to aid the understanding of those unfamiliar with the project.

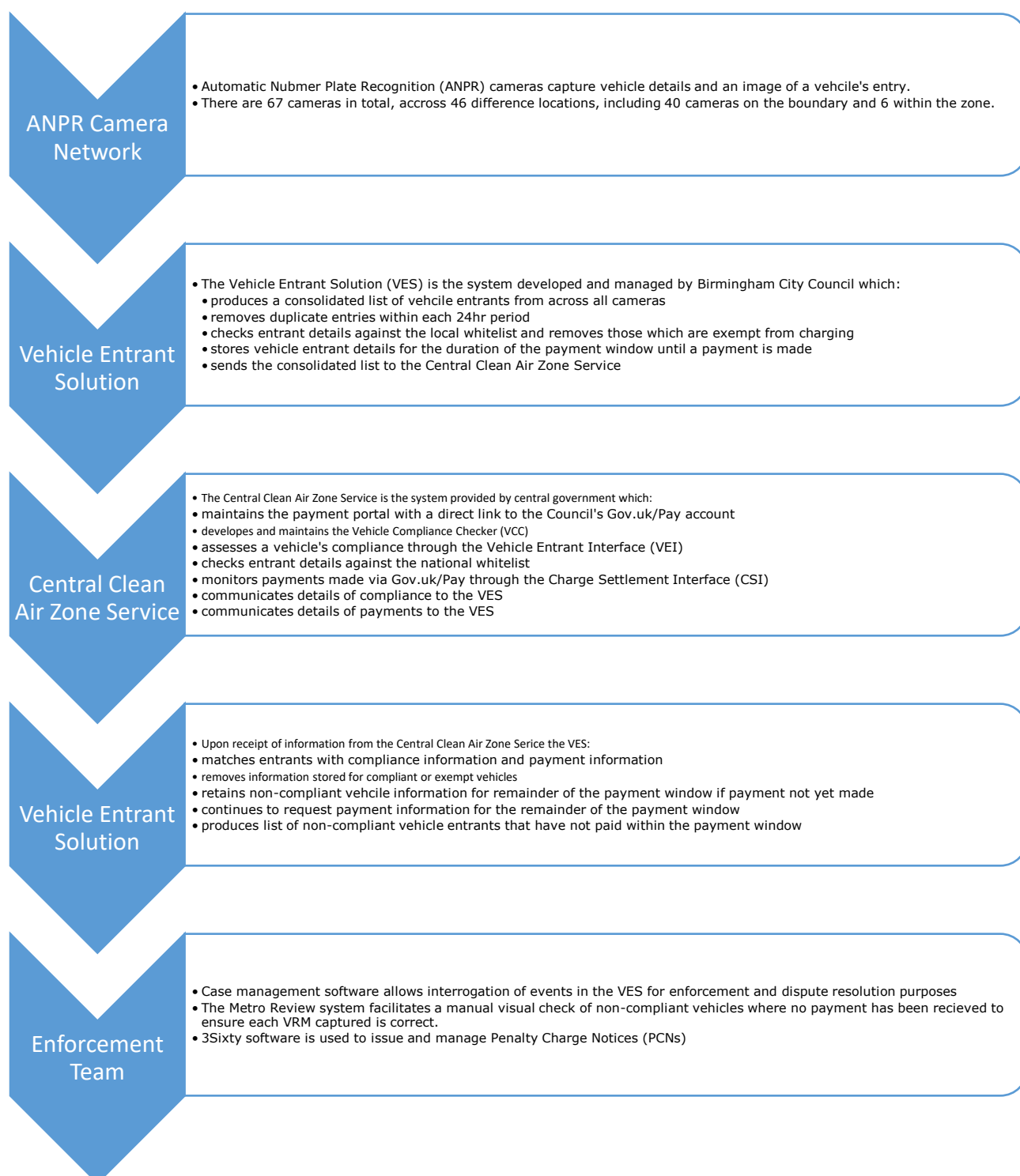
There are two main parties delivering the works required to establish a complete end-to-end solution, Birmingham City Council and the Central Clean Air Zone Service. Each organisation is supported by data sharing agreements with the Driver and Vehicle Licensing Agency (DVLA) to access specific vehicle and owner details. Responsibilities within the end to end process can therefore effectively be divided between two owners.



Initially the Central Clean Air Zone Service will be developed and operated under the Joint Air Quality Unit (JAQU) but is intended to operate more permanently under the oversight of the DVLA.

2 CAZ Information Flow

The following flow chart identifies the key elements in the CAZ vehicle information processing cycle.



3 Individual Components Involved in Data Flow

Each component described in the process outlined in section 2 is detailed further below:

Automatic Number Plate Recognition Cameras

Automated Number Plate Recognition (ANPR) cameras are installed in various locations on the roadside to determine record which vehicles are within the zone, and then to pass on the data to the Vehicle Entrant Solution. The data is communicated wirelessly via 3G or 4G using SIM cards installed in the cameras. The cameras capture images of each vehicles entry and also have the capability to read each VRM and store the information in a digital format.

The cameras store information locally for download at regular intervals and have infrared capability for operation through both night and day. Captured images that are not required, for example of compliant or exempt vehicles, are automatically deleted and are not retained.

Vehicle Entrant Solution (VES)

The Vehicle Entrance Solution processes vehicle registrations from the ANPR camera network and is a bespoke solution produced by the Council. The VES has the job of consolidating all of the pieces of information from various sources to ultimately determine where PCNs are required. It is also capable of producing reports regarding the volume of vehicles it has processed.

The VES consolidates information at the front end of the process to produce a list of vehicle entrants which does not have any duplicates for each 24hr period. Next, it removes any vehicle entrant VRMs which match those contained in the local exemption list before finally communicating the residual VRMs to the Central Clean Air Zone Service.

At the back end, the VES matches information received from the Central Service regarding the compliance and payment status of each vehicle. This information is retained if the payment window has not yet passed for each entrant until either information regarding a payment is received, the vehicle is determined to be compliant, or the payment window expires.

The output from the VES is a list of non-compliant vehicles which are not exempt from charging and for which a payment has not been made. This is passed on the enforcement team for manual checks and penalty charges to be issued.

The VES user interface allows for the interrogation of events captured within the system, a functionality known as 'case management' or 'administrative tools'. This allows the enforcement team to deal with any challenges to PCNs and uphold or withdraw the penalty.

Permit Smarti

Locally exempt vehicle information is stored in Permit Smarti which forms a local exemption list. This list is cross referenced as part of the reconciliation process undertaken by the VES to ensure exempt non-compliant vehicles are not charged for CAZ entry, or issued with a PCN. This local exemption list contains both temporary and permanent exemptions.

Vehicle Compliance Checker (VCC)

The vehicle compliance checker is the 'single source of truth' for determining a vehicle's compliance in relation to any clean air zone scheme. The vehicle checker is developed and owned by the Central Clean Air Zone Service and is linked to the DVLA database. The VCC can be accessed online by individuals, or through the Vehicle Entrant Interface for multiple enquiries.

Vehicle Entrant Interface (VEI)

The VEI is the interface through which the VES can request information about the compliance of a vehicle, or a list of vehicles. It is linked to the VCC and so will return the same response that an individual would see if they used the VCC online. The VEI also allows a local authority to determine if a vehicle is exempt from being charged based on national exemptions. It also allows a local authority to determine if a vehicle is not exempt, and whether the vehicle should be charged and the level of tariff that applies to that vehicle.

The compliance status of each vehicle is returned to the VES with a response containing the following details:

- Vehicle VRM
- Vehicle make
- Vehicle model
- Vehicle colour
- Vehicle type approval category
- Compliance Status
 - Exempt
 - Compliant
 - Not Compliant but Pre-paid
 - Not Compliant and Not Pre-Paid
 - Unrecognised but Paid (e.g. foreign vehicle)
 - Unrecognised Not Paid
- Whether it is a taxi or private hire vehicle.

Charge Settlement Interface (CSI)

In the first instance, the payment status of a vehicle is included in the information received from the VEI. If a payment has not been made at the time of the first query to the VEI, that vehicle information is stored, and the CSI is queried for the remainder of the payment window. The CSI retrieves data detailing payments made and communicates the payment status to the VES. By determining whether a CAZ charge has been paid or not, the CSI also allows for enforcement action to be taken through the issuing of a PCN.

The CSI retrieves data about a payment transaction, including the date a payment was made, the value of the charge paid and the dates of travel that the payment relates to. The CSI then updates the status of a paid CAZ charge to reflect any action that is being taken with the payment (e.g. the processing of a refund or chargeback).

The payment status of each vehicle is returned to the VES with a response containing the following details:

- Payment Status
 - Paid
 - Not paid
 - Refunded
 - Chargeback (where payment is disputed, this information is added retrospectively via the admin tools)
 - Numeric reference generated by Gov.UK/Pay

Payment Portal

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The payment portal is developed, maintained, and hosted by the Clean Air Zone Central Service. It is the means through which CAZ users can pay the charge either in advance of entry, on the day of entry, or within the payment window after entry to any CAZ. The portal captures the details of the vehicle and determines the charge payable, which is multiplied across the number of days the user selects to pay the charge for. The payment portal automatically redirects the user to Gov.uk/Pay for the payment to be made, and communicates details of the payment amount, dates of entry, and payment reference to the CSI.

Gov.uk/Pay

This website is owned and operated by central Government and is responsible for processing and managing the actual transactions through which CAZ charges are paid. The platform is the only means for receiving payments, and also has the functionality to permit refunds to be processed for specific transactions.

The Council will receive all payments related to the Birmingham CAZ as they will be made directly through their own Gov.uk/Pay account.

Metro Review

The Metro Review system facilitates a manual review of the evidence collected whenever a penalty charge is to be issued. This involves a review of the data capture to make sure the correct VRM has been registered on the system. The team may use this in conjunction with the administrative tools to ensure PCNs are only issued when necessary.

3Sixty

3Sixty is the software used by the enforcement team to manage the issue and status tracking of penalty charge notices. The enforcement team request registered keeper information from the DVLA through a Keeper of Vehicle at Date of an Event (KADOE) agreement. The VES has been designed to complement existing processes and procedures wherever possible.