

# Cabinet

## Supplementary Information



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### 16. Improving Public Health - Bristol Clean Air Zone Update

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(Pages 2 - 65)

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**Bristol City Council Clean Air Plan  
Full Business Case**

**Finance Report**

**FBC-41 | 8**

**22 February 2021**

**Bristol City Council**

Draft

## Bristol City Council Clean Air Plan

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# 1. Introduction

## 1.1 Disclaimer

The financial case sets out the anticipated costs of the scheme based on the current scheme design (including both charging and non-charging measures) as of February 3<sup>rd</sup> 2021. It will set out the current understanding of the financial situation and outline the resources available for the project including all available funding sources (the primary sources of funding considered in the financial model are the Clean Air Fund and Implementation Fund).

A financial model was prepared to profile the scheme costs (capital and operational) against the funding sources and revenue from the CAZ. This model provides an approximation of the level of revenue that could be accumulated from the CAZ. The financial model is based on the traffic and air quality modelling outputs, and so the accuracy will be no greater than the accuracy of the transport and air quality models, which contain a number of limitations. Further, the financial model is predicated on key operational assumptions provided by BCC based on their experience of administering similar projects (in particular, parking and bus lane enforcement). The financial model is suitable to indicate whether the revenue from the CAZ is likely to be sufficient to cover the operating costs based on these key assumptions, but it does not give an accurate forecast of the revenue from the scheme. Jacobs does not therefore take responsibility for the accuracy of this financial model.

## 1.2 Note on Project Costs

The project costs presented in Section 1-6 are based on an previous iteration of the cost estimates. The updated costs are incorporated into the 'core' scenario and an additional sensitivity test (Sensitivity Test 9) in Section 7: Addendum. The updated costs presented in the Addendum reflect the current cost assumptions and supersede those costs listed in Sections 1-6.

That said, there is minimal variance in costs between the historical and current set. As such, the conclusions drawn in Sections 1-6 would not be materially affected by updating all analysis presented in Section 1-6 to the current set of costs. Nevertheless, primary focus should be given to the analysis presented in Section 7: Addendum.

Cost differences between historical costs and current costs can be summarised as follows:

- CAPEX: increased due to
  - Additional ANPR camera required
  - Additional non-charging measure added
- OPEX: decreased due to:
  - Reduction in system operations and maintenance, partially offset by increase to camera, communications, signage and building maintenance and operation, CAZ project delivery and operational management team (staff resources) and CAZ publicity and advertising costs.

## 1.3 Background and Context

Poor air quality is the largest known environmental risk to public health in the UK<sup>1</sup>. Investing in cleaner air and doing more to tackle air pollution are priorities for the EU and UK governments, as well as for Bristol City Council (BCC). The Mayor of Bristol has often cited Bristol's 'moral and legal duty' to improve air quality in the city and the administration recognises that achieving improved air quality is not solely a transport issue. Notwithstanding the Council's work on a Clean Air Zone, efforts have been made to make citizens more aware of – and take personal responsibility for – various sources of air pollution, from traffic fumes to solid fuel burning. The Mayor has articulated a 'call to action' for local people, businesses and organisations to consider how small changes can make a significant difference in cutting toxic fumes across the city. BCC has monitored and endeavoured to address air quality in Bristol for decades and declared its first Air Quality Management Area in 2001. Despite this,

<sup>1</sup> Public Health England (2014) Estimating local mortality burdens associated with particular air pollution.  
<https://www.gov.uk/government/publications/estimating-local-mortality-burdens-associated-with-particulate-air-pollution>

Bristol has ongoing exceedances of the legal limits for Nitrogen Dioxide (NO<sub>2</sub>) and these are predicted to continue until around 2027 without intervention.

The added context is that of the COVID-19 pandemic. Recent research suggests that poor air quality may be correlated with higher death / infection rates from COVID-19. This is further compounded by growing evidence that suggests that those from black, Asian and minority ethnic communities are more at risk of catching and dying from the virus and the fact that individuals from these communities are more likely to live in areas where air quality is poor. The challenge of maintaining public health and supporting economic recovery while also achieving legal air quality levels after lockdown restrictions are lifted will remain live and intersecting issues for the foreseeable future.

The UK Government continue to transpose European Union law into its Environment Bill<sup>2</sup>, to ensure that certain standards of air quality continue to be met, by setting air quality assessment levels (AQALs) on the concentrations of specific air pollutants. It's very unlikely that these AQALs will differ to EU Limit Values prescribed by the European Union's Air Quality Directive and transcribed in the UK's Air Quality Standards Regulation 2010. Therefore, these Limit Values will remain in enforcement post-Brexit. In common with many EU member states, the EU Limit Value for annual mean nitrogen dioxide (NO<sub>2</sub>) is breached in the UK and there are on-going breaches of the NO<sub>2</sub> limit value in Bristol. The UK government is taking steps to remedy this breach in as short a time as possible, with the aim of reducing the harmful impacts on public health. Within this objective, the Government has published a UK Air Quality Plan and a Clean Air Zone Framework, both originally published in 2017 (noting there have been subsequent revisions). The latter document provides the expected approach for local authorities when implementing and operating a Clean Air Zone (CAZ). The following business cases have been submitted to JAQU for the Clean Air Plan; Strategic Outline Case (April 2018), and an Outline Business Case (November 2019 and updated between April and June 2020).

## 1.4 Purpose of this Report

This document is written to support the Full Business Case (FBC) and acts as a detailed appendix to the financial case presented in the main FBC document. It outlines the funding and expenditure requirements for the CAP, as well as outlining wider financial impacts and consequences of the proposed arrangement for BCC and Government. It is underpinned by a financial model (appended to this report), which profiles the scale and sources of proposed funding along with the timing of expenditure. Explicitly, it details the revenue and capital needs (and associated profile) to deliver the project, within the context of the BCC's wider financial situation.

Earlier versions of this report were published in January 2019, October 2019 and June 2020 in support of the developing economic case published as part of the Strategic Outline Case, Outline Business Case and Revised Outline Business Case.

This document reflects the updated Bristol Clean Air Zone modelling, including the modelled impacts of the Bristol Street Space Schemes on the Bristol highway network and Small CAZ D.

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<sup>2</sup> Environment Bill 2019-21 <https://services.parliament.uk/bills/2019-21/environment.html>

## 2. General Structure and Assumptions

### 2.1 Model Structure

In line with the Defra/DfT Joint Air Quality Unit (JAQU) Guidance<sup>3</sup>, the financial model comprises the following elements:

- Funding Profile – outlining the profile for capital and revenue funding requirements, split by funding source (including Implementation Fund, Clean Air Fund, BCC and other funding opportunities).
- Capital Expenditure Summary – providing detail on the cost and spending profile for capital assets delivered as part of Clean Air Plan implementation, split by funding source (as above).
- Operational Summary – providing detail on the cost and spending profile for ongoing operation of the Clean Air Plan, set against any revenues generated by the scheme elements to arrive at a net cash flow position.
- Impact on BCC Accounts – assessing the impact of the Clean Air Plan on BCC' income and expenditure account and balance sheet.

In addition to these standard financial model components, the model also contains a detailed Bill of Materials (BoM), which drives the cost estimates for CAPEX and OPEX. The BoM is underpinned by the cost estimates provided in FBC33 'Project Costs' in Appendix J of the FBC. Further, the model provides detailed analysis around the costs associated with enforcing CAZ regulations and dealing with any contraventions, based on BCC advice and experience on similar projects (e.g. car parking/bus lane enforcement). Detailed consideration of these issues is required due to the convoluted and potentially costly nature of enforcement, particularly related to the Penalty Charge Notice (PCN) process for individuals in contravention of the Clean Air Plan's proposed regulations. More detail on this analysis is provided below.

### 2.2 Approach to Analysis

A financial model was developed for the preferred intervention option i.e.

- Small Area Class D CAZ (charging non-compliant cars, buses, coaches, taxis, HGVs and LGVs);
- Fast Track measures;
  - a) Closure of Cumberland Road inbound to general traffic; and
  - b) Holding bus traffic to the city centre through the use of existing signals.

The financial modelling for the operational phase of the CAP assumes that the CAZ scheme is in operation over two horizons:

- Three year operation from October 2021 to September 2024; and
- Ten year operation from October 2021 to December 2030 (i.e. end of appraisal period).

The shorter operational period recognises that the CAP is anticipated to reduce the annual mean concentrations of NO<sub>2</sub> to below the EU limit value threshold by 2023. Continuing the scheme until September 2024 will allow a further period of consolidation of NO<sub>2</sub> concentrations, supporting a stabilised, long-run concentration level within the EU limit values. The longer operational period is also considered to reflect the potential for the CAP to be extended into a long-term programme and to ensure steady-state compliance with EU limit values. This longer operational period could provide transport operators with a more stable environment in which to make investment decisions.

With reference to the longer term operational period in particular, it is acknowledged that the schemes are forecast to achieved compliance well before 2030. Hence, the scale of revenues and costs are both expected to diminish towards the end of the appraisal period.

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<sup>3</sup> Outline Business Case Workshop, May 2018



### 3. Capital Expenditure Summary

A central estimate for scheme implementation cost is £43.1 million (2021 prices). Given capital expenditure (CAPEX) is expected to take place in 2021, no inflation adjustments are made to this estimated cost. Note that around 17% of the capital funding request will be targeted towards the Implementation Fund. The remainder will be targeted towards the Clean Air Fund.

Tables 3.1 and 3.2 present a summary of how the CAPEX estimate is built up, split by broad theme and funding source. A more detailed breakdown of CAPEX costs is provided in BoQ format in FBC33: Project Costs, which forms Appendix J of the FBC.

Table 3-1: CAPEX by broad theme and funding source (£2021 prices)

| CAPEX Item                                  | Implementation Fund | Clean Air Fund    | Total             |
|---|---------------------|-------------------|-------------------|
| Enforcement System                          | 663,324             |                   | 663,324           |
| Street Works                                | 3,233,840           |                   | 3,233,840         |
| Other CAPEX                                 | 20,149              |                   |                   |
| Non-Charging Measures - Implementation Fund | 515,000             |                   | 515,000           |
| Non-Charging Measures – Clean Air Fund      |                     | 35,878,344        | 35,878,344        |
| QRA (P80)                                   | 2,801,000           |                   | 2,801,000         |
| <b>Total</b>                                | <b>7,233,313</b>    | <b>35,878,344</b> | <b>43,111,657</b> |

The scale and profile of expenditure is outlined in Table 3-3 which provide more comprehensive Capital Expenditure Summary for the project. Further detail on cost estimation is provided in FBC33: which forms Appendix J of the FBC, noting the changes explained in section 2.1.



## 4. Operational Summary

The operational summary reconciles the revenue generating potential of the project with the cost of ongoing operation and enforcement of the CAZ and maintenance of capital assets.

### 4.1 Strategic Assumptions

The operational model is underpinned by key assumptions that are presented throughout the subsequent operational summary section below. However, for ease of reference, the key assumptions are also consolidated into the following list:

- Non-compliant buses, coaches, taxis, private hire vehicles (PHVs), HGVs, LGVs and cars are all charged for travel into/through the small area CAZ boundary. CAZ charges are imposed as follows:
  - £9 for cars, taxis, PHVs and LGVs;
  - £100 for buses, coaches and HGVs
- No change in CAZ charges are assumed over the appraisal period. The current CAZ charges proposed are kept constant for the entire appraisal period. In contrast, operational costs are assumed to increase at the prevailing rate for general operational costs (2.9% per annum) and staff costs (2.0% per annum<sup>5</sup>).
- Operational phase begins in October 2021. The forecast number of non-compliant vehicles in 2021, 2023 and 2031 is adopted from transport modelling outputs with non-compliant vehicles forecasts for intervening years based on interpolation also undertaken as part of transport modelling. Note that given the traffic modelling outputs provide average annual daily flows, the 2021 non-compliant vehicles are profiled from October 1<sup>st</sup> to December 31<sup>st</sup> only, rather than for the full year.
- To reflect the introduction of exemption from CAZ charges some 11% of unique non-compliant cars that would otherwise be expected to pay the CAZ charge are exempt in the first year of operation (October 2021-September 2022). Informed by traffic modelling this reflects the proportion of non-compliant cars registered to low income households that are interacting with the CAZ for work/education purposes and residents of the CAZ that travel out of the zone for work<sup>6</sup>.
- To reflect the anticipated roll out of the financial assistance schemes as part of the CAF bid, the following further adjustments are made to the baseline non-compliant vehicle forecast for the duration of the appraisal:
  - 17% reduction in non-compliant cars
  - 95% reduction in non-compliant taxis
  - 48% reduction in non-compliant LGVs
  - 52% reduction in non-compliant buses/coaches
  - 43% reduction in HGVs
- A contravention rate of 5% is applied to capture non-compliant vehicles that do not pay the charge and are instead issued with a penalty charge notice (PCN). The contravention rate remains static across the appraisal period. This assumption reflects BCC's experience of contravention of other schemes (e.g. car parking, bus lane enforcement), but also the wider national experience provided by contravention of schemes such as ULEZ and Dartford Crossing.
- Based on BCC's experience of the contravention and resulting PCN process, some 65% of vehicles issued with a PCN are assumed to pay the resulting charge. The vast majority pay at the discount rate (92% at £60, plus

<sup>4</sup> As per retail price index published by OBR

<sup>5</sup> In line with average growth in BCC salaries

<sup>6</sup> It is accepted that the proposed exemptions are more far-reaching than the two specific exemptions factored into the analysis here. However, due to a lack of data, it is not possible to accurately forecast the potential impact of exemptions on other user groups. The analysis therefore presents a conservative view on the potential reduction in non-compliant vehicles paying the CAZ charge in the first year of operation due to the introduction of exemptions.

the original CAZ charge), with the residual contraveners paying at the full rate (8% at £120, plus the original CAZ charge). Of the 35% of contraveners that do not pay the charge, the following outcomes are anticipated:

- 46% of PCNs cancelled; no charge incurred
  - 6% issued with a Charge Certificate (50% increase on full PCN rate)
  - 15% followed up with Traffic Enforcement Centre (TEC) proceedings (at full PCN rate)
  - 34% of PCNs written off
- First time offenders are not charged or issued with PCNs. Instead, individuals are issued with a warning letter only.
  - All charge and PCN income is assumed to be accrued in the same month that the non-compliant vehicle enters the CAZ. No delay or deferment of charge or PCN income is assumed.<sup>7</sup>
  - As advised by BCC, PCN operations incur costs of £0.30 per PCN for Traffic Penalty Tribunal (TPT) charges, £1.43 per PCN for stationary and supplies and £0.85 per PCN for postage. A multiplier of 1.35 is applied to postage costs to reflect additional communication efforts resulting from unresponsive contraveners.
  - Further, BCC advised that staff costs to manage PCN operations include civil enforcement officers (CEOs, c. £55,000 per annum per role) and appeals officers (c. £55,000 per annum per role). Based on current operations, BCC indicated that 50,000 PCNs per annum necessitated CEOs and 3 Appeals Officers.
  - A proportion of revenue secured through CAZ charge payments are transferred to JAQU. Although the exact figure has not been determined at this stage, a 10% and 20% transfer of CAZ charge revenue is considered.

This range of assumptions to shape the base scenario and result in more scenario for operational analysis outlined below.

## 4.2 Revenue Generation

### 4.2.1 Overview

The Clean Air Zone Framework states that local authorities should not set the level of charge as a revenue raising measure. The Transport Act 2017 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. These should aim to improve air quality and support the delivery of the ambitions of the zone. The revenue re-investment reserve described below provides a mechanism for utilising any excess revenue generated within these parameters.

In this context the project is expected to lead to some revenue generation in the early years as a result of the CAZ-related charges levied on non-compliant vehicles. Revenue generation is a function of two interconnected components:

- The number of non-compliant vehicles entering the CAZ and paying the respective charge based on vehicle type.
- The number of non-compliant vehicles entering the CAZ, not paying the respective charge based on vehicle type and instead facing a fine via the PCN process.

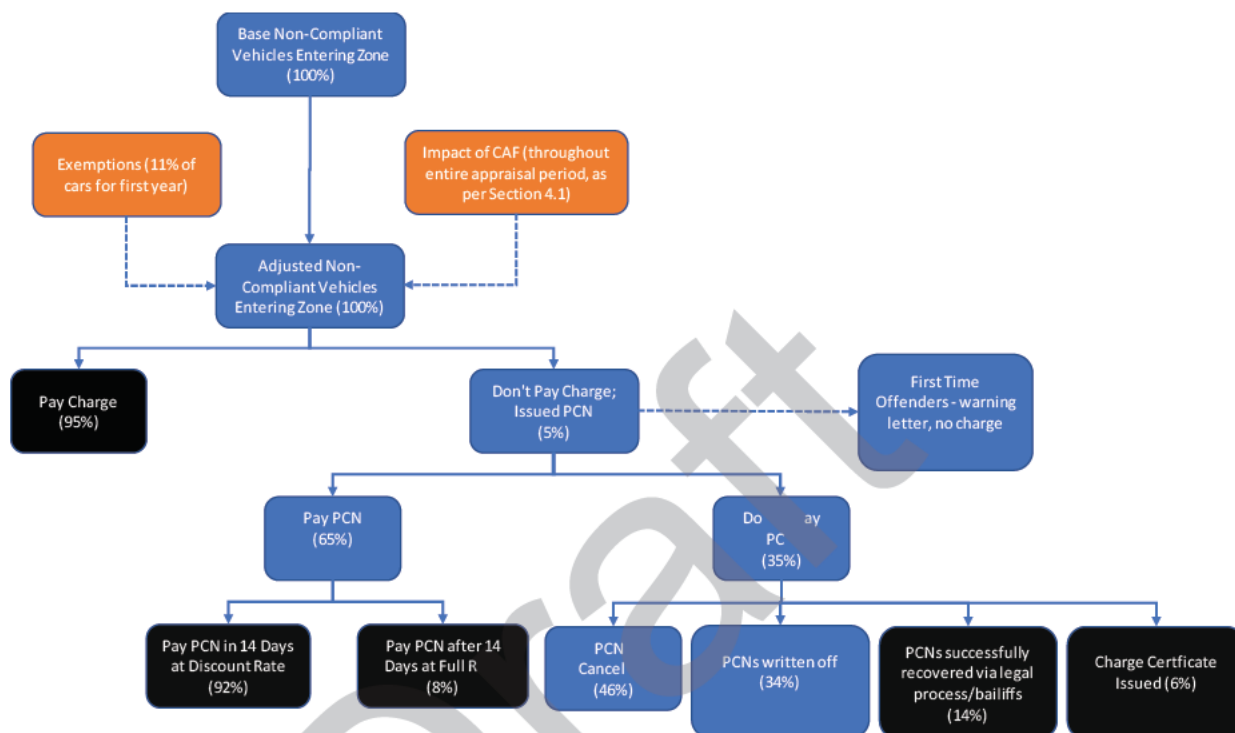
The overarching framework for revenue generation as a result of CAZ is underpinned by the assumptions specified in Section 4.1 and outlined in Figure 4.1. The various revenue generating streams emanating from the starting position of the number of non-compliant vehicles are discussed within this chapter, including further explanation of key assumptions in this calculation.

An initial estimate is made here based on reasonable estimates of key assumptions, established through benchmarking against other local schemes (e.g. bus lane enforcement and parking charge experience in Bristol)

<sup>7</sup> It is accepted that this approach to profiling revenue represents a simplification of the charge and fine payment process. However, in the absence of detailed evidence regarding the extent of deferment or delay in payments, including potentially lengthy delays related to tribunal and legal activity associated with some PCN payments, a simplified approach to revenue forecasting was considered most robust.

and wider experience. However, it should be noted that there is a considerable level of uncertainty in these assumptions since a CAZ scheme that involves charging non-compliant vehicles has not yet been implemented within the UK. Hence, a number of sensitivity scenarios are in development which will consider variations in key assumptions. These sensitivity tests will need to be considered in detail to understand the range of potential range of revenue generation.

Figure 4.1: CAZ Revenue Generation Framework



#### 4.2.2 Non-Compliant Vehicles Entering the Zone

The profile of non-compliant vehicle entering the CAZ zone is outlined in Table 4.1, based on outputs from traffic modelling. These figures account for anticipated behavioural responses to the proposed scheme, including altering route to avoid the zone, cancelling a trip entirely, and switching the mode of transport used for the journey. The analysis demonstrates that the volume of non-compliant traffic falls quickly from project implementation in 2021.

Whilst the traffic and air quality modelling indicate that compliance with air quality is achieved in 2023, the ten-year operation component of Table 4-1 demonstrates that a significant number of non-compliant trips persist throughout the appraisal period. This provides further justification for ongoing consideration of a ten year operational period, alongside the shorter three year operational period within which NO<sub>2</sub> concentrations are expected to fall within EU limit values.

Table 4-1: Base Non-Compliant Vehicles Subject to CAZ Charge

| Number of Non-Compliant Vehicles Subject to CAZ Charge |         |         |         |         |         |         |         |         |         |         |           |
|--|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|-----------|
| Vehicle Type   | 2021    | 2022    | 2023    | 2024    | 2025    | 2026    | 2027    | 2028    | 2029    | 2030    | Total     |
| <b>Three Year Operation</b>                            |         |         |         |         |         |         |         |         |         |         |           |
| Cars   | 164,689 | 545,503 | 430,915 | 285,363 | 0       | 0       | 0       | 0       | 0       | 0       | 1,915,168 |
| Taxis  | 610     | 2,127   | 1,833   | 1,195   | 0       | 0       | 0       | 0       | 0       | 0       | 7,577     |
| LGV  | 109,293 | 354,882 | 276,156 | 183,149 | 0       | 0       | 0       | 0       | 0       | 0       | 1,247,795 |
| HGV rigid  | 11,122  | 34,517  | 24,909  | 16,433  | 0       | 0       | 0       | 0       | 0       | 0       | 119,984   |
| Buses  | 3,401   | 10,776  | 8,057   | 5,252   | 0       | 0       | 0       | 0       | 0       | 0       | 37,579    |
| Total  | 289,116 | 947,805 | 741,871 | 491,392 | 0       | 0       | 0       | 0       | 0       | 0       | 3,328,102 |
| <b>Ten Year Operation</b>                              |         |         |         |         |         |         |         |         |         |         |           |
| Cars   | 164,689 | 545,503 | 430,915 | 381,529 | 331,333 | 282,600 | 234,164 | 185,986 | 135,796 | 89,865  | 3,271,617 |
| Taxis  | 610     | 2,127   | 1,833   | 1,598   | 1,362   | 1,127   | 901     | 676     | 451     | 225     | 12,722    |
| LGV  | 109,293 | 354,882 | 276,156 | 244,869 | 215,833 | 182,296 | 152,357 | 120,468 | 90,824  | 61,299  | 2,130,341 |
| HGV rigid  | 11,122  | 34,517  | 24,909  | 21,970  | 19,122  | 16,093  | 13,280  | 10,468  | 7,656   | 4,843   | 196,892   |
| Buses  | 3,401   | 10,776  | 8,057   | 6,022   | 5,587   | 4,952   | 3,962   | 2,971   | 1,981   | 990     | 60,192    |
| Total  | 289,116 | 947,805 | 741,871 | 656,988 | 589,125 | 487,147 | 404,664 | 320,569 | 236,706 | 157,223 | 5,671,765 |



### 4.2.3 CAZ Charge

The drivers of the non-compliant vehicles presented in Table 4-1 are, until the CAZ is removed, liable to pay a variable charge depending on type of vehicle. The charging schedule for the scheme is outlined in Table 4-2. It is set at the minimum level that is expected to induce changes in travel behaviour (i.e. a shift away from use of non-compliant vehicles) to the extent that concentrations of NO<sub>2</sub> comply with the EU Limit Values as quickly as possible. The process for determining the appropriate charging level was informed by the Stated Preference Survey outlined in Appendix F.

Table 4-2: Charging Schedule

| Vehicle Type    | Charge  |
|-----------------|---------|
| Cars/PHVs/Taxis | £9.00   |
| LGVs            | £9.00   |
| Buses/Coaches   | £100.00 |
| HGVs            | £100.00 |

### 4.2.4 CAZ Charge Payment

Case study evidence of road-charging operations and enforcement reveals that not all individuals pay the required charge and are therefore in contravention of the scheme. There is no direct precedent for the CAZ in the UK, it is not possible to estimate the contravention rates from an existing CAZ scheme. In the absence of a direct comparison, BCC is of the view that current patterns of contravention relating to bus lane enforcement and car parking, combined with wider evidence from charging schemes in other locations (e.g. ULEZ/Dartford Crossing) represent the best proxies to apply to potential CAZ contravention. Such evidence based on local and wider traveller behaviour suggests that a contravention rate of 5% could apply to CAZ charging. This assumption is considered to be robust, prudent and comparable to assumptions made for CAZ schemes in other locations. In line with historic patterns of contravention, this contravention rate is assumed to remain stable across the appraisal period.

Based on the contravention rate assumption discussed above, Table 4-3 outlines the number of vehicles anticipated to pay the appropriate CAZ charge, pivoting from the base number of non-compliant vehicles subject to the CAZ charge outlined in Table 4-1. As noted in Section 4.1, some 11% of car traffic is expected to be exempt from CAZ charges in the first year of operation. This will reduce the volume of non-compliant vehicles paying the CAZ charge, as outlined in Table 4-4. Further, the CAF-based financial assistance schemes intended to support the upgrading of non-compliant vehicles to compliant vehicles will also reduce the scale of vehicles paying the CAZ charge suggested in Table 4-3. Table 4-5 provides an adjusted estimate of vehicles paying the CAZ charge, taking into account the impact of both exemptions and the CAF-based financial assistance schemes. The exemptions and CAF-adjusted approach to estimating the operational position of the CAP is adopted as the 'core' scenario presented in the remainder of Section 4. This is considered a conservative view of potential revenue generation from the CAZ, given that it significantly reduces the potential scale of non-compliant vehicles through exemptions and financial assistance schemes. Nevertheless, the base non-compliant data and the exemptions-adjusted data (i.e. without further adjustments for the impact of CAF) underpin two of the sensitivity tests presented in Section 4.5.

Pivoting from the derived 'core' scenario, the resulting number of vehicles in contravention of the CAZ regulations and issued with a PCN is outlined in Table 4-6. Note that the number of vehicles contravening the CAZ regulations and issued with a PCN in Table 4-6 reflects the proposed BCC policy to waive any fine associated with an issued PCN for first time contravention offences. Instead, first time offenders will be issued with a warning letter only. Hence the 5% non-payment rate in Table 4-6 accounts for first-time offenders, and all figures relating to the number of PCNs paid or avoided reported in subsequent tables is also net of first-time offenders.

Table 4-3: Base Number of Vehicles Paying the CAZ Charge

| Number of Vehicles Paying the CAZ Charge |         |         |         |         |         |         |         |         |         |         |           |
|--|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|-----------|
| Vehicle Type                             | 2021    | 2022    | 2023    | 2024    | 2025    | 2026    | 2027    | 2028    | 2029    | 2030    | Total     |
| <b>Three Year Operation</b>              |         |         |         |         |         |         |         |         |         |         |           |
| Payment Rate                             | 95%     | 95%     | 95%     | 95%     | 95%     | 95%     | 95%     | 95%     | 95%     | 95%     |           |
| Cars                                     | 156,455 | 518,228 | 409,370 | 271,095 | 0       | 0       | 0       | 0       | 0       | 0       | 1,355,147 |
| Taxis                                    | 580     | 2,021   | 1,741   | 1,135   | 0       | 0       | 0       | 0       | 0       | 0       | 5,477     |
| LGV                                      | 103,828 | 337,138 | 262,348 | 173,991 | 0       | 0       | 0       | 0       | 0       | 0       | 877,306   |
| HGV                                      | 10,566  | 32,791  | 23,664  | 15,611  | 0       | 0       | 0       | 0       | 0       | 0       | 82,632    |
| Bus/Coaches                              | 3,231   | 10,237  | 7,654   | 4,989   | 0       | 0       | 0       | 0       | 0       | 0       | 26,112    |
| Total                                    | 274,660 | 900,415 | 704,778 | 466,822 | 0       | 0       | 0       | 0       | 0       | 0       | 2,346,674 |
| <b>Ten Year Operation</b>                |         |         |         |         |         |         |         |         |         |         |           |
| Payment Rate                             | 95%     | 95%     | 95%     | 95%     | 95%     | 95%     | 95%     | 95%     | 95%     | 95%     |           |
| Cars                                     | 156,455 | 518,228 | 409,370 | 362,45  | 31 03   | 8 546   | 222,456 | 176,687 | 129,006 | 85,371  | 2,643,774 |
| Taxis                                    | 580     | 2,021   | 1,741   | 518     | 1,29    | 1, 0    | 856     | 642     | 428     | 214     | 10,365    |
| LGV                                      | 103,828 | 337,138 | 262,348 | 23 26   | 202,903 | 173,181 | 144,739 | 114,444 | 86,282  | 58,234  | 1,715,725 |
| HGV                                      | 10,566  | 32,791  | 23,664  | 20,87   | 18,080  | 15,288  | 12,616  | 9,944   | 7,273   | 4,601   | 155,695   |
| Bus/Coaches                              | 3,231   | 10,237  | 7,654   | 6,671   | 5 8     | 4,704   | 3,764   | 2,823   | 1,882   | 941     | 47,594    |
| Total                                    | 274,660 | 900,415 | 704,778 | 624,139 | 5 3,168 | 462,790 | 384,431 | 304,540 | 224,871 | 149,362 | 4,573,153 |



Table 4-4: Exemptions-Adjusted Number of Vehicles Paying the Charge

| Number of Vehicles Paying the CAZ Charge |         |         |         |         |         |         |         |         |         |           |           |
|--|---------|---------|---------|---------|---------|---------|---------|---------|---------|-----------|-----------|
| Vehicle Type                             | 2021    | 2022    | 2023    | 2024    | 2025    | 2026    | 2027    | 2028    | 2029    | 2030      | Total     |
| <b>Three Year Operation</b>              |         |         |         |         |         |         |         |         |         |           |           |
| Payment Rate                             | 95%     | 95%     | 95%     | 95%     | 95%     | 95%     | 95%     | 95%     | 95%     | 95%       |           |
| Cars                                     | 139,347 | 475,846 | 409,370 | 271,095 | 0       | 0       | 0       | 0       | 0       | 0         | 1,295,658 |
| Taxis                                    | 580     | 2,021   | 1,741   | 1,135   | 0       | 0       | 0       | 0       | 0       | 0         | 5,477     |
| LGV                                      | 103,828 | 337,138 | 262,348 | 173,991 | 0       | 0       | 0       | 0       | 0       | 0         | 877,306   |
| HGV                                      | 10,566  | 32,791  | 23,664  | 15,611  | 0       | 0       | 0       | 0       | 0       | 0         | 82,632    |
| Bus/Coaches                              | 3,231   | 10,237  | 7,654   | 4,989   | 0       | 0       | 0       | 0       | 0       | 0         | 26,112    |
| Total                                    | 257,552 | 858,032 | 704,778 | 466,822 | 0       | 0       | 0       | 0       | 0       | 0         | 2,287,184 |
| <b>Ten Year Operation</b>                |         |         |         |         |         |         |         |         |         |           |           |
| Payment Rate                             | 95%     | 95%     | 95%     | 95%     | 95%     | 95%     | 95%     | 95%     | 95%     | 95%       |           |
| Cars                                     | 139,347 | 475,846 | 409,370 | 362,453 | 203     | 68,546  | 222,456 | 176,687 | 129,006 | 85,371    | 2,584,284 |
| Taxis                                    | 580     | 2,021   | 1,741   | 1,135   | 1,270   | 70      | 856     | 642     | 428     | 214       | 10,365    |
| LGV                                      | 103,828 | 337,138 | 262,348 | 202,903 | 173,181 | 144,739 | 114,444 | 86,282  | 58,234  | 1,715,725 |           |
| HGV                                      | 10,566  | 32,791  | 23,664  | 20,818  | 18,080  | 15,288  | 12,616  | 9,944   | 7,273   | 4,601     | 155,695   |
| Bus/Coaches                              | 3,231   | 10,237  | 7,654   | 6,671   | 5,618   | 4,704   | 3,764   | 2,823   | 1,882   | 941       | 47,594    |
| Total                                    | 257,552 | 858,032 | 704,778 | 624,139 | 168     | 462,790 | 384,431 | 304,540 | 224,871 | 149,362   | 4,513,664 |

Table 4-5: Exemptions and CAF-Adjusted Number of Vehicles Paying the Charge

| Number of Vehicles Paying the CAZ Charge |         |         |         |         |         |         |         |         |         |         |           |
|--|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|-----------|
| Vehicle Type                             | 2021    | 2022    | 2023    | 2024    | 2025    | 2026    | 2027    | 2028    | 2029    | 2030    | Total     |
| <b>Three Year Operation</b>              |         |         |         |         |         |         |         |         |         |         |           |
| Payment Rate                             | 95%     | 95%     | 95%     | 95%     | 95%     | 95%     | 95%     | 95%     | 95%     | 95%     |           |
| Cars                                     | 116,265 | 397,025 | 341,561 | 226,190 | 0       | 0       | 0       | 0       | 0       | 0       | 1,081,041 |
| Taxis                                    | 29      | 101     | 87      | 57      | 0       | 0       | 0       | 0       | 0       | 0       | 274       |
| LGV                                      | 54,343  | 176,455 | 137,311 | 91,066  | 0       | 0       | 0       | 0       | 0       | 0       | 459,175   |
| HGV                                      | 5,982   | 18,567  | 13,399  | 8,839   | 0       | 0       | 0       | 0       | 0       | 0       | 46,787    |
| Bus/Coaches                              | 1,547   | 4,902   | 3,665   | 2,389   | 0       | 0       | 0       | 0       | 0       | 0       | 12,505    |
| Total                                    | 178,167 | 597,050 | 496,023 | 328,541 | 0       | 0       | 0       | 0       | 0       | 0       | 1,599,781 |
| <b>Ten Year Operation</b>                |         |         |         |         |         |         |         |         |         |         |           |
| Payment Rate                             | 95%     | 95%     | 95%     | 95%     | 95%     | 95%     | 95%     | 95%     | 95%     | 95%     |           |
| Cars                                     | 116,265 | 397,025 | 341,561 | 302,415 | 992     | 24,064  | 185,607 | 147,420 | 107,637 | 71,230  | 2,156,216 |
| Taxis                                    | 29      | 101     | 87      | 6       |         | 54      | 43      | 32      | 21      | 11      | 519       |
| LGV                                      | 54,343  | 176,455 | 137,311 | 1754    | 106,198 | 90,642  | 75,755  | 59,899  | 45,160  | 30,479  | 897,996   |
| HGV                                      | 5,982   | 18,567  | 13,399  | 11,8    | 10,237  | 8,656   | 7,143   | 5,631   | 4,118   | 2,605   | 88,155    |
| Bus/Coaches                              | 1,547   | 4,902   | 3,665   | 3,195   | 2,7     | 2,253   | 1,802   | 1,352   | 901     | 451     | 22,792    |
| Total                                    | 178,167 | 597,050 | 496,023 | 439,258 | 215     | 325,668 | 270,351 | 214,334 | 157,837 | 104,776 | 3,165,679 |

Table 4-6: Number of Vehicles in Contravention of CAZ Regulations and Issued with PCN (net of first time offenders)

| Number of Vehicles in Contravention of CAZ Regulations |       |        |        |        |       |        |        |        |       |       |         |
|--|-------|--------|--------|--------|-------|--------|--------|--------|-------|-------|---------|
| Vehicle Type   | 2021  | 2022   | 2023   | 2024   | 2025  | 2026   | 2027   | 2028   | 2029  | 2030  | Total   |
| <b>Three Year Operation</b>                            |       |        |        |        |       |        |        |        |       |       |         |
| Payment Rate   | 5%    | 5%     | 5%     | 5%     | 5%    | 5%     | 5%     | 5%     | 5%    | 5%    |         |
| Cars   | 5,701 | 19,468 | 16,748 | 11,091 | 0     | 0      | 0      | 0      | 0     | 0     | 53,008  |
| Taxis  | 1     | 5      | 4      | 3      | 0     | 0      | 0      | 0      | 0     | 0     | 14      |
| LGV  | 2,453 | 7,965  | 6,198  | 4,110  | 0     | 0      | 0      | 0      | 0     | 0     | 20,726  |
| HGV  | 252   | 782    | 564    | 372    | 0     | 0      | 0      | 0      | 0     | 0     | 1,970   |
| Bus/Coaches  | 67    | 213    | 159    | 104    | 0     | 0      | 0      | 0      | 0     | 0     | 542     |
| Total  | 8,474 | 28,432 | 23,674 | 15,680 | 0     | 0      | 0      | 0      | 0     | 0     | 76,260  |
| <b>Ten Year Operation</b>                              |       |        |        |        |       |        |        |        |       |       |         |
| Payment Rate   | 5%    | 5%     | 5%     | 5%     | 5%    | 5%     | 5%     | 5%     | 5%    | 5%    |         |
| Cars   | 5,701 | 19,468 | 16,748 | 14,829 | 896   | 10,987 | 9,101  | 7,229  | 5,278 | 3,493 | 105,729 |
| Taxis  | 1     | 5      | 4      | 4      |       | 3      | 2      | 2      | 1     | 1     | 27      |
| LGV  | 2,453 | 7,965  | 6,198  | 496    | 4,793 | 4,091  | 3,419  | 2,704  | 2,038 | 1,376 | 40,533  |
| HGV  | 252   | 782    | 564    | 4      | 431   | 364    | 301    | 237    | 173   | 110   | 3,712   |
| Bus/Coaches  | 67    | 213    | 159    | 139    | 1     | 98     | 78     | 59     | 39    | 20    | 988     |
| Total  | 8,474 | 28,432 | 23,674 | 20,964 | 242   | 15,543 | 12,902 | 10,230 | 7,530 | 4,998 | 150,989 |

#### 4.2.5 CAZ Charge Income

Combining the CAZ charges in Table 4-2 with the number of vehicles paying the CAZ charge under the 'core' scenario in Table 4-5 and reprofiling the analysis to reflect financial years rather than calendar years demonstrates that the CAZ charge could generate a stream of revenue over the appraisal period that amounts to £19.8 million at the end of a three year operational period, or £38.6 million in 2030 across the ten year operational period. Note that for the longer operational period in particular, the scale of CAZ charge income declines rapidly over time from £7.2 million in the first full year of operation (2022/23) to £0.9 million at the end of the appraisal period (2030/31).

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Table 4-7: Direct CAZ Income – From CAZ Charge Payments (£'000s)

| Direct CAZ Income           |           |           |           |           |           |           |         |         |           |         |            |
|-----------------------------|-----------|-----------|-----------|-----------|-----------|-----------|---------|---------|-----------|---------|------------|
| Vehicle Type                | 2021/22   | 2022/23   | 2023/24   | 2024/25   | 2025/26   | 2026/27   | 2027/28 | 2028/29 | 2029/30   | 2030/31 | Total      |
| <b>Three Year Operation</b> |           |           |           |           |           |           |         |         |           |         |            |
| Total                       | 4,113,828 | 7,167,654 | 5,845,038 | 2,667,015 | 0         | 0         | 0       | 0       | 0         | 0       | 19,793,535 |
| <b>Ten Year Operation</b>   |           |           |           |           |           |           |         |         |           |         |            |
| Total                       | 4,113,828 | 7,167,654 | 5,845,038 | 5,146,831 | 4,447,839 | 3,756,918 | 7 51    | 394,967 | 1,715,458 | 919,970 | 38,587,355 |

#### 4.2.6 CAZ Charge Contravention – PCN Process

Those vehicles that contravene the CAZ payment process will be issued with a PCN that levies a fine in line with the charging order. In line with The Road User Charging Schemes (Penalty Charges, Adjudication and Enforcement) (England) Regulations 2013, the charging order will specify a fine of £120 per vehicle (reduced to £60 if paid within fourteen days), plus the initial CAZ charge. In theory, all vehicles in contravention of the CAZ payment process will be subject to the PCN fine. However, BCC experience of the PCN process for other fining mechanisms (in particular car parking and bus lane enforcement) reveals that the PCN payment rate is around 65%. Adopting this benchmark, the number of vehicles expected to pay the PCN is outlined in Table 4-88.

Of the 65% of vehicles that pay the PCN, BCC experience also suggests that 92% pay at the reduced payment rate (i.e. within fourteen days, £60 plus initial CAZ charge). The residual 8% of payments are at the full payment rate (i.e. after the fourteen-day window, £120 plus the initial CAZ charge). The number of vehicles paying at the reduced and full PCN payment rate are outlined in Table 4-9 and Table 4-10 respectively.

As only 65% of people receiving a PCN are expected to pay the fine levied against them, the residual 35% of PCN recipients make representations against the PCN and have it cancelled, written off or are referred to the Traffic Penalty Tribunal (TPT) System. BCC experience suggests that:

- 46% of all non-paid PCNs are cancelled after a successful representation which results in no revenue generation for BCC.
- 34% of all non-paid PCNs are not recovered and are written off instead, which results in no revenue generation for BCC
- 14% of all non-paid PCNs are recovered via the TPT process or other legal action (e.g. bailiffs).
- 6% of all non-paid PCNs are followed by a charge certificate, which adds 50% to the fine levied.

Within this context, Table 4-11 presents the number of non-paid PCNs expected to be cancelled or written off and Table 4-12 outlines the number of non-paid PCNs successfully recovered via the TPT, other legal processes or through issuance of a charge certificate.

#### 4.2.7 CAZ Contravention Income

Combining the number of reduced fine PCN payments (Table 4-9) the number of full fine PCN payments (Table 4-10 and Table 4-12 [including the 5 % premium fine on Charge Certificates where appropriate]) and the associated fine levels (£60 plus initial CAZ charge for reduced fines and £120 plus initial charge for full fines), it is possible to estimate indirect CAZ income related to PCN payments. Reprofiled to reflect financial years rather than calendar years, Table 4-133 demonstrates that the PCN process could generate a stream of revenue over the appraisal period that amounts to £4.6 million at the end of a three year operational period, or £9.1 million in 2030 across the ten year operational period. Note that for the longer operational period in particular, the scale of PCN income declines rapidly over time from £1.7 million in the first full year of operation (2022/23) to £0.2 million at the end of the appraisal period (2030/31).

#### 4.2.8 CAZ Revenue Generation

Combining the direct CAZ income with the indirect CAZ income the CAZ could gross £24.4 million at the end of a three year operational period, or £47.7 million in 2030 across the ten year operational period, as set out in Table 4-144. Note that for the longer operational period in particular, the scale of total income generation declines rapidly over time from £8.9 million in the first full year of operation (2022/23) to £1.1 million at the end of the appraisal period (2030/31).

It should be noted that the revenue generation predicted in Table 4-144 is reliant on a number of key assumptions which are not certain. BCC have made reasonable attempts to estimate these assumptions based on similar schemes administered locally, but since a CAZ of this type has not yet been implemented, the available evidence

is limited and hence the forecasts are uncertain. As noted above, a range of detailed sensitivity tests are presented in Section 4.5 to help understand the impact of amending key assumptions on the forecast revenue generation

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Table 4-8: Number of Vehicles Paying the PCN

| Number of Vehicles Paying the PCN |       |        |        |        |       |        |       |       |       |       |        |
|-----------------------------------|-------|--------|--------|--------|-------|--------|-------|-------|-------|-------|--------|
| Vehicle Type                      | 2021  | 2022   | 2023   | 2024   | 2025  | 2026   | 2027  | 2028  | 2029  | 2030  | Total  |
| <b>Three Year Operation</b>       |       |        |        |        |       |        |       |       |       |       |        |
| Cars                              | 3,706 | 12,654 | 10,886 | 7,209  | 0     | 0      | 0     | 0     | 0     | 0     | 34,455 |
| Taxis                             | 1     | 3      | 3      | 2      | 0     | 0      | 0     | 0     | 0     | 0     | 9      |
| LGV                               | 1,594 | 5,177  | 4,029  | 2,672  | 0     | 0      | 0     | 0     | 0     | 0     | 13,472 |
| HGV                               | 164   | 508    | 367    | 242    | 0     | 0      | 0     | 0     | 0     | 0     | 1,281  |
| Bus/Coaches                       | 44    | 138    | 103    | 67     | 0     | 0      | 0     | 0     | 0     | 0     | 352    |
| Total                             | 5,508 | 18,481 | 15,388 | 10,192 | 0     | 0      | 0     | 0     | 0     | 0     | 49,569 |
| <b>Ten Year Operation</b>         |       |        |        |        |       |        |       |       |       |       |        |
| Cars                              | 3,706 | 12,654 | 10,886 | 9,639  | 8,382 | 7,141  | 5,916 | 4,699 | 3,431 | 2,270 | 68,724 |
| Taxis                             | 1     | 3      | 3      | 3      | 2     | 2      | 1     | 1     | 1     | 0     | 17     |
| LGV                               | 1,594 | 5,177  | 4,029  | 72     | 3,1   | 2      | 59    | 2,223 | 1,757 | 1,325 | 26,347 |
| HGV                               | 164   | 508    | 367    | 323    | 280   | 237    | 196   | 154   | 113   | 71    | 2,413  |
| Bus/Coaches                       | 44    | 138    | 103    |        | 77    | 63     | 51    | 38    | 25    | 13    | 642    |
| Total                             | 5,508 | 18,481 | 15,388 | 13,627 | 11 8  | 10,103 | 8,386 | 6,649 | 4,894 | 3,249 | 98,143 |



Table 4-9: Number of Vehicles Paying the Reduced PCN Fine

| Number of Vehicles Paying the Reduced Rate PCN |       |        |        |       |        |       |       |       |       |       |        |
|--|-------|--------|--------|-------|--------|-------|-------|-------|-------|-------|--------|
| Vehicle Type                                   | 2021  | 2022   | 2023   | 2024  | 2025   | 2026  | 2027  | 2028  | 2029  | 2030  | Total  |
| <b>Three Year Operation</b>                    |       |        |        |       |        |       |       |       |       |       |        |
| Cars   | 3,421 | 11,681 | 10,049 | 6,655 | 0      | 0     | 0     | 0     | 0     | 0     | 31,805 |
| Taxis  | 1     | 3      | 3      | 2     | 0      | 0     | 0     | 0     | 0     | 0     | 8      |
| LGV  | 1,472 | 4,779  | 3,719  | 2,466 | 0      | 0     | 0     | 0     | 0     | 0     | 12,436 |
| HGV  | 151   | 469    | 339    | 223   | 0      | 0     | 0     | 0     | 0     | 0     | 1,182  |
| Bus/Coaches                                    | 40    | 128    | 95     | 62    | 0      | 0     | 0     | 0     | 0     | 0     | 325    |
| Total  | 5,085 | 17,059 | 14,204 | 9,408 | 0      | 0     | 0     | 0     | 0     | 0     | 45,756 |
| <b>Ten Year Operation</b>                      |       |        |        |       |        |       |       |       |       |       |        |
| Cars   | 3,421 | 11,681 | 10,049 | 8,897 | 7,737  | 6,592 | 5,461 | 4,337 | 3,167 | 2,096 | 63,437 |
| Taxis  | 1     | 3      | 3      | 2     | 2      | 2     | 1     | 1     | 1     | 0     | 16     |
| LGV  | 1,472 | 4,779  | 3,719  | 3,297 | 876    | 2,455 | 2,052 | 1,622 | 1,223 | 825   | 24,320 |
| HGV  | 151   | 469    | 339    | 92    | 2      | 19    | 180   | 142   | 104   | 66    | 2,227  |
| Bus/Coaches                                    | 40    | 128    | 95     | 83    | 71     | 59    | 47    | 35    | 23    | 12    | 593    |
| Total  | 5,085 | 17,059 | 14,204 | 12,5  | 10,945 | 9,326 | 7,741 | 6,138 | 4,518 | 2,999 | 90,593 |

Table 4-10: Number of Vehicles Paying the Full PCN Fine

| Number of Vehicles Paying the Full Rate PCN |      |       |       |       |      |      |      |      |      |      |       |
|---|------|-------|-------|-------|------|------|------|------|------|------|-------|
| Vehicle Type                                | 2021 | 2022  | 2023  | 2024  | 2025 | 2026 | 2027 | 2028 | 2029 | 2030 | Total |
| <b>Three Year Operation</b>                 |      |       |       |       |      |      |      |      |      |      |       |
| Cars  | 285  | 973   | 837   | 555   | 0    | 0    | 0    | 0    | 0    | 0    | 2,650 |
| Taxis                                       | 0    | 0     | 0     | 0     | 0    | 0    | 0    | 0    | 0    | 0    | 1     |
| LGV   | 123  | 398   | 310   | 206   | 0    | 0    | 0    | 0    | 0    | 0    | 1,036 |
| HGV   | 13   | 39    | 28    | 19    | 0    | 0    | 0    | 0    | 0    | 0    | 99    |
| Bus/Coaches                                 | 3    | 11    | 8     | 5     | 0    | 0    | 0    | 0    | 0    | 0    | 27    |
| Total                                       | 424  | 1,422 | 1,184 | 784   | 0    | 0    | 0    | 0    | 0    | 0    | 3,813 |
| <b>Ten Year Operation</b>                   |      |       |       |       |      |      |      |      |      |      |       |
| Cars  | 285  | 973   | 837   | 741   | 645  | 549  | 45   | 361  | 264  | 175  | 5,286 |
| Taxis                                       | 0    | 0     | 0     | 0     | 0    | 0    | 0    | 0    | 0    | 0    | 1     |
| LGV   | 123  | 398   | 310   | 275   | 240  | 20   | 171  | 135  | 102  | 69   | 2,027 |
| HGV   | 13   | 39    | 28    | 5     | 22   | 18   | 15   | 12   | 9    | 5    | 186   |
| Bus/Coaches                                 | 3    | 11    | 8     |       | 6    | 5    | 4    | 3    | 2    | 1    | 49    |
| Total                                       | 424  | 1,422 | 1,184 | 1,048 | 912  | 777  | 645  | 511  | 376  | 250  | 7,549 |

Table 4-11: Number of Non-Paid PCNs Cancelled or Written Off

| Number of Non-Paid PCNs Cancelled or Written Off |       |       |       |       |       |       |       |       |       |       |        |
|--|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|--------|
| Vehicle Type                                     | 2021  | 2022  | 2023  | 2024  | 2025  | 2026  | 2027  | 2028  | 2029  | 2030  | Total  |
| <b>Three Year Operation</b>                      |       |       |       |       |       |       |       |       |       |       |        |
| Cars   | 1,596 | 5,451 | 4,689 | 3,106 | 0     | 0     | 0     | 0     | 0     | 0     | 14,842 |
| Taxis  | 0     | 1     | 1     | 1     | 0     | 0     | 0     | 0     | 0     | 0     | 4      |
| LGV  | 687   | 2,230 | 1,735 | 1,151 | 0     | 0     | 0     | 0     | 0     | 0     | 5,803  |
| HGV  | 71    | 219   | 158   | 104   | 0     | 0     |       |       | 0     | 0     | 552    |
| Bus/Coaches                                      | 19    | 60    | 44    | 29    | 0     | 0     | 0     | 0     | 0     | 0     | 152    |
| Total  | 2,373 | 7,961 | 6,629 | 4,390 | 0     | 0     | 0     | 0     | 0     | 0     | 21,353 |
| <b>Ten Year Operation</b>                        |       |       |       |       |       |       |       |       |       |       |        |
| Cars   | 1,596 | 5,451 | 4,689 | 4,152 | 3,611 | 76    | 2,548 | 2,024 | 1,478 | 978   | 29,604 |
| Taxis  | 0     | 1     | 1     | 1     | 1     | 1     |       | 0     | 0     | 0     | 7      |
| LGV  | 687   | 2,230 | 1,735 | 1,539 |       | 46    | 957   | 757   | 571   | 385   | 11,349 |
| HGV  | 71    | 219   | 158   | 13    | 121   | 10    | 84    | 66    | 49    | 31    | 1,039  |
| Bus/Coaches                                      | 19    | 60    | 44    |       | 33    | 27    | 22    | 16    | 11    | 5     | 277    |
| Total  | 2,373 | 7,961 | 6,629 | 5,870 | 5,108 | 4,352 | 3,612 | 2,864 | 2,108 | 1,400 | 42,277 |

Table 4-12: Number of Non-Paid PCNs Ordered to Pay Full Fine Through TPT, other legal processes or Charge Certificate

| Number of Non-Paid PCNs Recovered |      |       |       |       |      |      |      |      |      |      |        |
|-----------------------------------|------|-------|-------|-------|------|------|------|------|------|------|--------|
| Vehicle Type                      | 2021 | 2022  | 2023  | 2024  | 2025 | 2026 | 2027 | 2028 | 2029 | 2030 | Total  |
| <b>Three Year Operation</b>       |      |       |       |       |      |      |      |      |      |      |        |
| Cars                              | 399  | 1,363 | 1,172 | 776   | 0    | 0    | 0    | 0    | 0    | 0    | 3,711  |
| Taxis                             | 0    | 0     | 0     | 0     | 0    | 0    | 0    | 0    | 0    | 0    | 1      |
| LGV                               | 172  | 558   | 434   | 288   | 0    | 0    | 0    | 0    | 0    | 0    | 1,451  |
| HGV                               | 18   | 55    | 39    | 26    | 0    | 0    | 0    | 0    | 0    | 0    | 138    |
| Bus/Coaches                       | 5    | 15    | 11    | 7     | 0    | 0    | 0    | 0    | 0    | 0    | 38     |
| Total                             | 593  | 1,990 | 1,657 | 1,098 | 0    | 0    | 0    | 0    | 0    | 0    | 5,338  |
| <b>Ten Year Operation</b>         |      |       |       |       |      |      |      |      |      |      |        |
| Cars                              | 399  | 1,363 | 1,172 | 1,038 | 903  | 719  | 63   | 506  | 369  | 244  | 7,401  |
| Taxis                             | 0    | 0     | 0     | 0     | 0    | 0    | 0    | 0    | 0    | 0    | 2      |
| LGV                               | 172  | 558   | 434   | 385   | 336  | 86   | 239  | 189  | 143  | 96   | 2,837  |
| HGV                               | 18   | 55    | 39    | 35    | 30   | 21   | 21   | 17   | 12   | 8    | 260    |
| Bus/Coaches                       | 5    | 15    | 11    | 10    | 8    | 5    | 5    | 4    | 3    | 1    | 69     |
| Total                             | 593  | 1,990 | 1,657 | 1,468 | 777  | 118  | 903  | 716  | 527  | 350  | 10,569 |

Table 4-13: Indirect CAZ Income – From PCN Fine Payments

| Indirect CAZ Income  |         |           |           |           |           |         |         |         |         |         |           |
|----------------------|---------|-----------|-----------|-----------|-----------|---------|---------|---------|---------|---------|-----------|
| Vehicle Type         | 2021/22 | 2022/23   | 2023/24   | 2024/25   | 2025/26   | 2026/27 | 2027/28 | 2028/29 | 2029/30 | 2030/31 | Total     |
| Three Year Operation |         |           |           |           |           |         |         |         |         |         |           |
| Total                | 927,966 | 1,652,325 | 1,382,138 | 631,371   | 0         | 0       | 0       | 0       | 0       | 0       | 4,593,800 |
| Ten Year Operation   |         |           |           |           |           |         |         |         |         |         |           |
| Total                | 927,966 | 1,652,325 | 1,382,138 | 1,218,893 | 1,055,400 | 893,848 | 734,545 | 573,504 | 413,654 | 225,098 | 9,077,372 |

Table 4-14: Total CAZ Income

| Total CAZ Income     |           |           |           |           |           |           |           |           |           |           |            |
|----------------------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|------------|
| Vehicle Type         | 2021/22   | 2022/23   | 2023/24   | 2024/25   | 2025/26   | 2026/27   | 2027/28   | 2028/29   | 2029/30   | 2030/31   | Total      |
| Three Year Operation |           |           |           |           |           |           |           |           |           |           |            |
| Total                | 5,041,794 | 8,819,979 | 7,227,175 | 3,298,386 | 0         | 0         | 0         | 0         | 0         | 0         | 24,387,335 |
| Ten Year Operation   |           |           |           |           |           |           |           |           |           |           |            |
| Total                | 5,041,794 | 8,819,979 | 7,227,175 | 6,365,250 | 5,503,239 | 4,650,106 | 3,813,397 | 2,968,471 | 2,129,112 | 1,145,068 | 47,664,727 |

## 4.3 Operational Costs

### 4.3.1 Overview

Operational costs will be incurred by BCC across a range of activities:

- Systems operations and maintenance
- Camera, communications, signage and buildings maintenance
- CAZ delivery and ongoing operational management
- Monitoring and evaluation
- Decommissioning
- PCN production
- CAZ publicity and advertising

The majority of these operational costs are accrued on either a fixed annual basis for the lifecycle of the project or as one-off costs. However, some cost items relating to PCN production activities and systems operations and management are contingent on variations in vehicle non-compliance and contravention as outlined in the section above and are therefore worthy of more detailed discussion.

Note that the CAZ Project Delivery and Ongoing Operational Management Team roles and CAZ Publicity and Advertising line items are represented as lasting for nine months in the financial model (i.e. Jan 2021-Sep 2021). However, it is now acknowledged that these roles will be required for a longer duration, beyond scheme switch on. This is not reflected in the costs presented at this stage. Also note that the CAZ Project Delivery and Ongoing Operational Management Team roles are presented as OPEX in the current financial modelling presented in this report. However, it is acknowledged that these roles will switch to CAPEX.

### 4.3.2 PCN Administration Costs

The non-compliance and contravention rate estimates presented above demonstrate that large volumes of vehicles could enter the CAZ and avoid paying the relevant charge in a single year. This volume of contraventions would require a significant administrative effort to process and enforce the charging order. For example, every PCN generated by vehicles in contravention of the charging order generates workload in terms of civil enforcement, reviewing ANPR footage, preparing and distributing correspondence.

In terms of PCN preparation, the CAZ-related PCN process could necessitate significant recruitment of administrative staff, potentially on short-term and temporary contracts to reflect the sharp decline in contravention rates Table 4.4.. Based on BCC's existing PCN processes (for issuing parking and bus lane enforcement fines), the following staffing requirements would be generated by the significant PCN process:

- 2 civil enforcement officer (CEO) per 50,000 PCNs
- 3 appeals officer per 50,000 PCNs

Applying these benchmarks to the forecast number of PCN's required as a result of the project will indicate the number of full-time equivalent administrative roles that would need to be filled across the CAZ operation period. The bulk of these roles would be obsolete over time as vehicular compliance improves, hence the potential focus on short-term and temporary contracts.

Further, a permanent TPT senior officer would be required across the operation of the CAZ. Applying BCC average staff costs for these roles (including salary and direct overheads), the council could incur additional wage costs of £0.9 million under the three year operational period, rising to £2.3 million over the longer operational period.

Administration costs will also arise from BCC's obligation to make a financial contribution to the TPT process, stationery and supplies (processing) and PCN postage (distribution) of each PCN. BCC advise that benchmark costs for these activities (based on car parking and bus lane enforcement experience) are:

- PCN Generation - £0.30 per PCN towards the ongoing existence of this independent panel
- Stationery and Supplies - £1.43 per PCN for printing and processing
- PCN postage - £0.85 per PCN for distribution

Note that an additional multiplier of 1.35 is applied to the PCN postage costs to reflect the need for follow-up communications on some individual cases. Adopting these benchmarks, the number of PCNs issued would lead to additional costs of between £0.3 million (shorter operational period) and £0.5 million (longer operational period) (Table 4-155).

#### **4.3.3 Summary**

Inclusive of the variable staffing and PCN process costs outlined above, the core estimate for the scheme's operational costs including all cost items is between £8.7 million (shorter operational period) and £17.9 million (longer operational period) (2021 prices). This estimate increases to between £9.0 million and £19.4 million taking into account inflation (labour costs inflated at 2% per annum based on BCC's annual wage uplift estimates and other operating costs inflated at 2.9% in line with OBR's retail price index growth forecast). Table 4-166 presents a summary of how this OPEX estimate is built up, split by broad theme.

A more detailed breakdown of OPEX costs is provided in BoQ format in Appendix J. The timing of expenditure is outlined in Table 4-17, which provides a more comprehensive Operational Expenditure Summary for the project.

Table 4-15: Additional Costs Arising from PCN Process

|                             | Administration Costs Arising from PCN Process (£s) |         |         |         |         |         |         |         |         |         |         |
|-----------------------------|--|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| Type of Additional Cost     | 2021/22  | 2022/23 | 2023/24 | 2024/25 | 2025/26 | 2026/27 | 2027/28 | 2028/29 | 2029/30 | 2030/31 | Total   |
| <b>Three Year Operation</b> |  |         |         |         |         |         |         |         |         |         |         |
| PCN Generation              | 5,157  | 9,401   | 8,111   | 3,789   | 0       | 0       | 0       | 0       | 0       | 0       | 26,458  |
| Stationery and supplies     | 24,583   | 44,812  | 38,664  | 18,060  | 0       | 0       | 0       | 0       | 0       | 0       | 126,119 |
| PCN postage                 | 19,727   | 35,959  | 31,026  | 14,492  | 0       | 0       | 0       | 0       | 0       | 0       | 101,204 |
| Total                       | 49,467   | 90,173  | 77,801  | 36,340  | 0       | 0       | 0       | 0       | 0       | 0       | 253,781 |
| <b>Ten Year Operation</b>   |  |         |         |         |         |         |         |         |         |         |         |
| PCN Generation              | 5,157  | 9,401   | 8,111   | 7,362   | 6,56    | 5 9     | 4,837   | 3,887   | 2,888   | 1,612   | 55,535  |
| Stationery and supplies     | 24,583   | 44,812  | 38,664  | 35,091  | 31,     | 27,     | 23,058  | 18,528  | 13,765  | 7,685   | 264,718 |
| PCN postage                 | 19,727   | 35,959  | 31,026  | 8,159   | 094     | 21,875  | 18,503  | 14,868  | 11,046  | 6,166   | 212,422 |
| Total                       | 49,467   | 90,173  | 77,801  | 70,612  | 62, 6   | 54,855  | 46,397  | 37,283  | 27,698  | 15,463  | 532,675 |

Table 4-16: OPEX by broad theme and funding source (£)

| OPEX Item  | Three Year Operation |                   | Ten Year Operation |                   |
|--|----------------------|-------------------|--------------------|-------------------|
|  | 2021 Prices (£)      | Outturn Costs (£) | 2021 Prices (£)    | Outturn Costs (£) |
| Systems Operations and Maintenance                                   | 4,946,050            | 5,055,644         | 12,264,665         | 13,157,612        |
| Camera, Comms, Signage and Building Maintenance and Operation - OPEX | 770,108              | 809,898           | 2,374,501          | 2,736,766         |
| CAZ Project Delivery & Ongoing Operational Management Team           | 1,567,913            | 1,567,913         | 1,567,913          | 1,567,913         |



| OPEX Item                               | Three Year Operation |                   | Ten Year Operation |                   |
|---|----------------------|-------------------|--------------------|-------------------|
|   | 2021 Prices (£)      | Outturn Costs (£) | 2021 Prices (£)    | Outturn Costs (£) |
| Monitoring and Evaluation               | 389,869              | 428,827           | 389,869            | 428,827           |
| Decommissioning at Scheme End<br>- OPEX | 681,616              | 742,653           | 681,616            | 881,614           |
| PCN Production                          | 242,283              | 253,781           | 9 34               | 532,675           |
| CAZ Publicity and Advertising           | 112,500              | 112,500           | 112, 0             | 112,500           |
| <b>Total</b>                            | <b>8,710,339</b>     | <b>8,971,214</b>  | <b>7,870,497</b>   | <b>19,417,907</b> |

Table 4-17: Operational Expenditure Summary

## Three Year Operation

|  | Totals   |           |           |           |           |         |         |         |         |        |   |            | Totals   |           |           |           |           |         |         |         |         |         |            |
|--|----------|-----------|-----------|-----------|-----------|---------|---------|---------|---------|--------|---|------------|----------|-----------|-----------|-----------|-----------|---------|---------|---------|---------|---------|------------|
| Systems Operation and Maintenance  | 0        | 933,577   | 1,742,507 | 1,545,658 | 724,308   | 0       | 0       | 0       | 0       | 0      | 0 | 4,946,050  | 0        | 939,166   | 1,769,802 | 1,592,333 | 754,344   | 0       | 0       | 0       | 0       | 0       | 5,055,644  |
| Camera, Comms, Signage and Building Maintenance and Operation - OPEX         | 0        | 128,351   | 256,703   | 256,703   | 128,351   | 0       | 0       | 0       | 0       | 0      | 0 | 770,108    | 0        | 130,213   | 266,062   | 273,778   | 139,845   | 0       | 0       | 0       | 0       | 0       | 809,898    |
| CAZ Project Delivery & Ongoing Operational Management Team (staff resources) | 522,638  | 1,045,275 | 0         | 0         | 0         | 0       | 0       | 0       | 0       | 0      | 0 | 1,567,913  | 522,638  | 1,045,275 | 0         | 0         | 0         | 0       | 0       | 0       | 0       | 0       | 1,567,913  |
| Monitoring and Evaluation  | 0        | 24,367    | 48,734    | 48,734    | 48,734    | 48,734  | 48,734  | 48,734  | 48,734  | 24,367 | 0 | 389,869    | 0        | 24,639    | 50,099    | 51,217    | 52,362    | 53,532  | 54,730  | 55,955  | 57,209  | 29,083  | 428,827    |
| Decommissioning at Scheme End - OPEX   | 0        | 0         | 0         | 0         | 681,616   | 0       | 0       | 0       | 0       | 0      | 0 | 6,616      | 0        | 0         | 0         | 0         | 742,653   | 0       | 0       | 0       | 0       | 0       | 742,653    |
| PCN Production   | 0        | 48,834    | 87,094    | 73,002    | 33,353    | 0       | 0       | 0       | 0       | 0      | 0 | 2,283      | 0        | 49,467    | 90,173    | 77,801    | 36,340    | 0       | 0       | 0       | 0       | 0       | 253,781    |
| CAZ Publicity and Advertising  | 37,500   | 75,000    | 0         | 0         | 0         | 0       | 0       | 0       | 0       | 0      | 0 | 500        | 37,500   | 75,000    | 0         | 0         | 0         | 0       | 0       | 0       | 0       | 0       | 112,500    |
| Totals   | 560,138  | 2,255,404 | 2,135,037 | 1,924,096 | 1,616,363 | 48,734  | 48,734  | 48,734  | 48,734  | 2      | 0 | 8,909      | 560,138  | 2,263,759 | 2,176,135 | 1,995,129 | 1,725,544 | 53,532  | 54,730  | 55,955  | 57,209  | 29,083  | 8,971,214  |
| Net Cash Flow  | -560,138 | 2,786,390 | 6,684,942 | 5,303,080 | 1,682,024 | -48,734 | -48,734 | -48,734 | -48,734 | -24,36 | 0 | 15,676,9   | -560,138 | 2,778,035 | 6,643,844 | 5,232,047 | 1,572,843 | -53,532 | -54,730 | -55,955 | -57,209 | -29,083 | 15,416,120 |
| Net Cash Flow (Post-Implementation Fund Revenue Grant)                       | 0        | 3,906,665 | 6,684,942 | 5,303,080 | 1,682,024 | -48,734 | -48,734 | -48,734 | -48,734 | -24,36 | 0 | 17,357,409 | 0        | 3,898,310 | 6,643,844 | 5,232,047 | 1,572,843 | -53,532 | -54,730 | -55,955 | -57,209 | -29,083 | 17,096,533 |

## Ten Year Operation

|  | Totals   |           |           |           |           |           |           |           |           |           |           |                   |  | Totals   |           |           |           |           |           |           |           |           |           |           |                   |  |
|--|----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-------------------|--|----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-------------------|--|
| Systems Operation and Maintenance  | 0        | 933,577   | 1,742,507 | 1,545,658 | 1,424,896 | 1,349,997 | 1,267,258 | 1,158,511 | 1,090,123 | 1,022,172 | 729,966   | <b>12,264,665</b> |  | 0        | 939,166   | 1,769,802 | 1,592,333 | 1,489,668 | 1,435,025 | 1,371,721 | 1,279,120 | 1,231,588 | 1,184,952 | 864,238   | <b>13,157,612</b> |  |
| Camera, Comms, Signage and Building Maintenance and Operation - OPEX         | 0        | 128,351   | 256,703   | 256,703   | 256,703   | 256,703   | 256,703   | 256,703   | 256,703   | 256,703   | 192,527   | <b>2,374,501</b>  |  | 0        | 130,213   | 266,062   | 273,778   | 281,718   | 289,887   | 298,294   | 306,945   | 315,846   | 325,006   | 249,018   | <b>2,736,766</b>  |  |
| CAZ Project Delivery & Ongoing Operational Management Team (staff resources) | 522,638  | 1,045,275 | 0         | 0         | 0         | 0         | 0         | 0         | 0         | 0         | 0         | <b>1,567,913</b>  |  | 522,638  | 1,045,275 | 0         | 0         | 0         | 0         | 0         | 0         | 0         | 0         | 0         | <b>1,567,913</b>  |  |
| Monitoring and Evaluation  | 0        | 24,367    | 48,734    | 48,734    | 48,734    | 48,734    | 48,734    | 48,734    | 48,734    | 48,734    | 24,367    | <b>389,869</b>    |  | 0        | 24,639    | 50,099    | 51,217    | 52,362    | 53,532    | 54,730    | 55,955    | 57,209    | 29,083    | 0         | <b>428,827</b>    |  |
| Decommissioning at Scheme End - OPEX   | 0        | 0         | 0         | 0         | 0         | 0         | 0         | 0         | 0         | 0         | 681,686   | <b>681,686</b>    |  | 0        | 0         | 0         | 0         | 0         | 0         | 0         | 0         | 0         | 0         | 881,614   | <b>881,614</b>    |  |
| PCN Production   | 0        | 48,834    | 87,094    | 73,002    | 64,394    | 55,774    | 47,256    | 38,852    | 30,350    | 21,923    | 11,955    | <b>479,434</b>    |  | 0        | 49,467    | 90,173    | 77,801    | 70,612    | 62,926    | 54,855    | 46,397    | 37,283    | 27,698    | 15,463    | <b>532,675</b>    |  |
| CAZ Publicity and Advertising  | 37,500   | 75,000    | 0         | 0         | 0         | 0         | 0         | 0         | 0         | 0         | 0         | <b>112,500</b>    |  | 37,500   | 75,000    | 0         | 0         | 0         | 0         | 0         | 0         | 0         | 0         | 0         | <b>112,500</b>    |  |
| Totals   | 560,138  | 2,255,404 | 2,135,037 | 1,924,096 | 1,794,727 | 1,711,208 | 1,619,951 | 1,502,800 | 1,425,909 | 1,325,164 | 1,616,065 | <b>17,870,497</b> |  | 560,138  | 2,263,759 | 2,176,135 | 1,995,129 | 1,894,359 | 1,841,371 | 1,779,600 | 1,688,418 | 1,641,926 | 1,566,739 | 2,010,332 | <b>19,417,907</b> |  |
| Net Cash Flow  | -560,138 | 2,786,390 | 6,684,942 | 5,303,080 | 4,570,998 | 3,792,032 | 3,030,816 | 2,310,597 | 1,542,562 | 803,9     | -470      | <b>29 229</b>     |  | -560,138 | 2,778,035 | 6,643,844 | 5,232,047 | 4,471,366 | 3,661,868 | 2,871,166 | 2,124,979 | 1,326,545 | 562,373   | -865,264  | <b>28,246,820</b> |  |
| Net Cash Flow (Post-Implementation Fund Revenue Grant)                       | 0        | 3,906,665 | 6,684,942 | 5,303,080 | 4,570,998 | 3,792,032 | 3,030,816 | 2,310,597 | 1,542,562 | 8         | 8         | <b>-470,9 642</b> |  | 0        | 3,898,310 | 6,643,844 | 5,232,047 | 4,471,366 | 3,661,868 | 2,871,166 | 2,124,979 | 1,326,545 | 562,373   | -865,264  | <b>29,927,233</b> |  |

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#### 4.4 Net Operational Position

In line with JAQU guidance, the intention – as far as it is possible – is to cover all operating costs (i.e. those related to running and administering the CAZ itself) through revenue generated by the scheme.

Based on the scale and timing of revenue generation and operational costs reported in Table 4-14 and 4-16 respectively, Table 4.18 outlines the net operational cashflow associated with the Clean Air Plan, under the core scenario for each intervention option. The analysis indicates that cumulatively, revenue generation will exceed operational costs, resulting in a net operational surplus of between £17.1 million (three year operation) and £29.9 million (ten year operation) across the appraisal periods.

However, the scheme is forecast to generate a net operational deficit in the pre-implementation phase (as no revenue is forecast to materialise prior to October 2021, but some costs are incurred<sup>8</sup>). Further, for the ten year operation scenario, the later years of the appraisal period are also forecast to generate a net operational deficit (as the number of non-compliant vehicles falls but scheme operations are maintained). Whilst it is intended that the net operational deficit identified in the later years of the appraisal period can be covered by the anticipated net operational surplus identified above, it is not possible to directly use this surplus for upfront operational costs incurred prior to the receipt of revenue. As such, BCC are requesting funding from JAQU's Implementation Fund to cover any operational costs incurred prior to CAZ commencement. These costs are forecast to reach c. £1.7 million prior to October 2021, across financial years 2020/21 and 2021/22.

<sup>8</sup> Specifically in relation to CAZ publicity and advertising costs and CAZ project delivery and ongoing operational management team costs.

Table 4-18: Net Cash Flow Position: Core Scenario (Outturn Prices)

| Net Cash Flow Position (£'000s)               |         |         |                     |         |         |         |         |         |         |         |         |         |        |
|---|---------|---------|---------------------|---------|---------|---------|---------|---------|---------|---------|---------|---------|--------|
| Operational Item                              | 2019/20 | 2020/21 | 2021/22             | 2022/23 | 2023/24 | 2024/25 | 2025/26 | 2026/27 | 2027/28 | 2028/29 | 2029/30 | 2030/31 | Total  |
| <b>Three Year Operation</b>                   |         |         |                     |         |         |         |         |         |         |         |         |         |        |
| Operational Income                            | 0       | 0       | 5,042               | 8,820   | 7,227   | 3 98    | 0       | 0       | 0       | 0       | 0       | 0       | 24,387 |
| CAZ-Related OPEX <sup>9</sup>                 | 0       | 560     | 2,264               | 2,176   | 1,995   | 1,72    | 54      | 55      | 56      | 57      | 29      | 0       | 8,971  |
| Net Operating Position (pre IF grant)         | 0       | -560    | 2,778               | 6,644   | 5,232   | 573     | -54     | -55     | -56     | -57     | -29     | 0       | 15,416 |
| Implementation Fund Operational Grant Request | 0       | 560     | 1,120 <sup>10</sup> | 0       | 0       |         |         | 0       | 0       | 0       | 0       | 0       | 1,680  |
| Net Operating Position (post IF grant)        | 0       | 0       | 3,898               | 6,644   | 5 23    | 1,57    | -54     | -55     | -56     | -57     | -29     | 0       | 17,097 |
| <b>Ten Year Operation</b>                     |         |         |                     |         |         |         |         |         |         |         |         |         |        |
| Operational Income                            | 0       | 0       | 5,042               | 8,820   | 7,227   | 6       | 5,503   | 4,651   | 3,813   | 2,968   | 2,129   | 1,145   | 47,665 |
| CAZ-Related OPEX                              | 0       | 560     | 2,264               | 2, 6    | 1,9 5   | 894     | 1,841   | 1,780   | 1,688   | 1,642   | 1,567   | 2,010   | 19,418 |
| Net Operating Position (pre IF grant)         | 0       | -560    | 2 778               | 6, 6    | 5,23    | 4,471   | 3,662   | 2,871   | 2,125   | 1,327   | 562     | -865    | 28,247 |
| Implementation Fund Operational Grant Request | 0       | 560     | 1,120               | 0       | 0       | 0       | 0       | 0       | 0       | 0       | 0       | 0       | 1,680  |
| Net Operating Position (post IF grant)        | 0       |         | 3,898               | 44      | ,232    | 4,471   | 3,662   | 2,871   | 2,125   | 1,327   | 562     | -865    | 29,927 |

<sup>9</sup> Note that although the CAZ is assumed to switch off after three years, ongoing monitoring and evaluation costs will persist for eight years, hence the ongoing OPEX after September 2024..

<sup>10</sup> IF revenue grant is required for the period April 2021-September 2021, where costs are incurred but no revenue is forecast to be generated

<sup>11</sup> As above

Table 4.18 represents the current best estimate for operational revenues and costs. However, acknowledging that Clean Air Plans are a nascent concept and that there is no precedent or direct benchmark for the timing and scale of revenues in particular, a significant degree of uncertainty can be attached to the above analysis (see Section 4.5 Sensitivity Testing).

Notwithstanding this uncertainty, the core analysis demonstrates that the CAZ revenue is sufficient to cover operational costs of the scheme under both operational period scenarios. In fact, the proposed Clean Air Plan is forecast to generate a considerable positive cash flow over the appraisal period. Any cashflow surplus associated with the scheme will be ringfenced for the following purposes, in order of priority:

- Deficit coverage for ongoing and long-term operational expenditure, particularly in latter years of operation when the various schemes are anticipated to face an operational deficit, as well as decommissioning.
- Creation of a reinvestment reserve to support:
  - Any underestimation of operational costs.
  - Delivery of BCC's 'Liveable Neighbourhoods' aspiration (estimated cost range £45m to £283m);
  - Supplementary schemes to the CAF measures, as well as providing an opportunity to further invest in engagement with businesses and local residents affected by the schemes. For example, this funding source would support or extend some of the following measures which may form part of the CAF bid:
- Additional financial support to businesses and residents to upgrade vehicles;
- Increase, Improve, update Legible City Signage on key roads and in city centre; and
- An 'unintended consequences' fund for minor local interventions such as one-ways; and
- Support for additional buses to the Bristol Royal Infirmary.

Within this context, the individual cash position for the CAP in Bristol is expected to be neutral throughout the appraisal periods, as demonstrated in Tables 4.19 and 4.20.

Table 4-19: Residual Cash Flow Position – Three Year Operation (£'000s)

| Net Cash Flow Position (£'000s) Outturn Values |          |          |          |          |          |         |         |          |          |          |          |          |          |
|--|----------|----------|----------|----------|----------|---------|---------|----------|----------|----------|----------|----------|----------|
| Operational Item                               | 2019/20  | 2020/21  | 2021/22  | 2022/23  | 2023/24  | 2024/25 | 2025/26 | 2026/27  | 2027/28  | 2028/29  | 2029/30  | 2030/31  | Total    |
| Net Cashflow                                   | 0        | 0        | 3,898    | 6,644    | 5,232    | 1,573   | -54     | -55      | -56      | -57      | -29      | 0        | 17,097   |
| Deficit Coverage                               | 0        | 0        | 251      | 0        | 0        | 0       | 0       | 0        | 0        | 0        | 0        | 0        | 251      |
| Reinvestment Reserve (residual monies)         | 0        | 0        | 3,648    | 6,644    | 5,232    | 1,573   | 0       | 0        | 0        | 0        | 0        | 0        | 17,097   |
| <b>Residual Cash Position</b>                  | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b> |         |         | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b> |

Table 4-20: Residual Cash Flow Position – Ten Year Operation (£'000s)

| Net Cash Flow Position (£'000s) Outturn Values |          |          |          |          |          |          |          |          |          |          |          |          |          |
|--|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| Operational Item                               | 2019/20  | 2020/21  | 2021/22  | 2022/23  | 2023/24  | 2024 25  | 2025/26  | 2026/27  | 2027/28  | 2028/29  | 2029/30  | 2030/31  | Total    |
| Net Cashflow                                   | 0        | 0        | 3,898    | 6,64     | 5,232    | 471      | 3,662    | 2,871    | 2,125    | 1,327    | 562      | -865     | 29,927   |
| Deficit Coverage                               | 0        | 0        | 8        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 865      |
| Reinvestment Reserve (residual monies)         | 0        | 0        | 3,033    | 6,64     | 5, 2     | 4,471    | 3,662    | 2,871    | 2,125    | 1,327    | 562      | 0        | 29,927   |
| <b>Residual Cash Position</b>                  | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b> |

## 4.5 Sensitivity Testing

In light of the significant uncertainty and lack of precedent regarding operation of Clean Air Plan's, extensive sensitivity testing is being undertaken to better understand the potential range of net operating positions for the project, based on variance in key assumptions. The following key sensitivities are considered:

- Base Non-Compliant Traffic Analysis: no consideration of exemptions or CAF impacts on base traffic flows.
- Base + Exemptions Non-Compliant Traffic Analysis: consideration of exemptions but not CAF impacts on base traffic flows.
- Sensitivity Test 1: As per 'core' scenario, but with 20% JAQU revenue payment instead of 10%
- Sensitivity Test 2: As per 'core' scenario, but increase in contravention rate from 5% to 20%
- Sensitivity Test 3: As per 'core' scenario, but reduction in CAZ and PCN Charges by 50%
- Sensitivity Test 4: As per 'core' scenario, but reduction in non-compliant traffic flows by 25% compared to core scenario
- Sensitivity Test 5: As per 'core' scenario, but increase non-compliant traffic flows by 25% compared to core scenario
- Sensitivity Test 6: As per 'core' scenario, but exponential profile of non-compliant traffic flow reduction rather than more gradual profile suggested by traffic modelling
- Sensitivity Test 7: Combination of Sensitivity Tests 4 and 6, plus an assumption that the contravention rate declines at an exponential rate rather than stabilising at 5% across the appraisal period, representing a worst-case revenue generating scenario that has:
  - 20% JAQU revenue payment instead of 10%
  - Reduction in CAZ and PCN Charges by 50%
  - Reduction in non-compliant traffic flows by 25% compared to core scenario
  - Exponential profile of non-compliant traffic flow reduction rather than more gradual profile suggested by traffic modelling
- Sensitivity Test 8: As per 'core' scenario, but reduction in non-compliant traffic flows to 82% of 'core' scenario levels, reflecting traffic patterns for Bristol in wake of COVID19 pandemic. Details of the changes in traffic levels associated with COVID-19 are reported in the Clean Air Zone Board Report – Traffic Behaviour 2019-2020 (Appendix S of the Option Assessment Report)

The outputs of these sensitivity tests in terms of outturn cashflow is presented in the following table. The outputs demonstrate that a change in the profile of non-compliant traffic reduction and the value of the CAZ/PCN charges are the key drivers of net operating position. In particular, any acceleration in the reduction of non-compliant traffic over time (as modelled through Sensitivity Test 6 and captured as part of Sensitivity Test 7) has a particularly significant impact on operating position.



Table 4-21: Sensitivity Test Outputs (Outturn Values, £'000s)

| Option/ Scenario            | 2020/21 | 2021/22 | 2022/23 | 2023/24 | 2024/25 | 2025/26 | 2026/27 | 2027/28 | 2028/29 | 2029/30 | 2030/31 | Total   |
|-----------------------------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| <b>Three Year Operation</b> |         |         |         |         |         |         |         |         |         |         |         |         |
| Base                        | 0       | 6,653   | 11,082  | 8,487   | 3,032   | -54     | -55     | -56     | -57     | -29     | 0       | 29,003  |
| Base + Exemptions           | 0       | 6,317   | 10,776  | 8,487   | 3,032   | -5      | -55     | -56     | -57     | -29     | 0       | 28,361  |
| Core Scenario               | 0       | 3,898   | 6,644   | 5,232   | 1,573   | -54     | -55     | -56     | -57     | -29     | 0       | 17,097  |
| Sensitivity Test 1          | 0       | 3,487   | 5,927   | 4,648   | 1,306   | 54      | -55     | -56     | -57     | -29     | 0       | 15,117  |
| Sensitivity Test 2          | 0       | 5,646   | 9,781   | 7,872   | 2,776   | -5      | -56     | -57     | -29     | -29     | 0       | 25,825  |
| Sensitivity Test 3          | 0       | 1,583   | 2,592   | 1,911   | 57      | -54     | -55     | -56     | -57     | -29     | 0       | 5,893   |
| Sensitivity Test 4          | 0       | 2,781   | 4,697   | 3,633   | 8 4     | 54      | -55     | -56     | -57     | -29     | 0       | 11,684  |
| Sensitivity Test 5          | 0       | 5,030   | 8,647   | 6,859   | 2,2 3   | - 4     | -55     | -56     | -57     | -29     | 0       | 22,578  |
| Sensitivity Test 6          | 0       | 2,097   | 736     | -489    | -1,223  | 54      | -55     | -56     | -57     | -29     | 0       | 870     |
| Sensitivity Test 7          | 0       | 340     | -573    | 993     | -1,339  | -54     | -55     | -56     | -57     | -29     | 0       | -2,815  |
| Sensitivity Test 8          | 0       | 3,101   | 5,25    | 4,09    | 34      | -54     | -55     | -56     | -57     | -29     | 0       | 13,235  |
| <b>Ten Year Operation</b>   |         |         |         |         |         |         |         |         |         |         |         |         |
| Base                        | 0       | 6,653   | 11,08   | 8,487   | 7,296   | 6,128   | 4,940   | 3,821   | 2,678   | 1,530   | -351    | 52,264  |
| Base + Exemptions           | 0       | 6,317   | 10,776  | 8,487   | 7,296   | 6,128   | 4,940   | 3,821   | 2,678   | 1,530   | -351    | 51,622  |
| Core Scenario               | 0       | 3,898   | 6,644   | 2       | 4,471   | 3,662   | 2,871   | 2,125   | 1,327   | 562     | -865    | 29,927  |
| Sensitivity Test 1          | 0       | 3,487   | 5,927   | 4,648   | 3,957   | 3,217   | 2,495   | 1,817   | 1,087   | 391     | -957    | 26,068  |
| Sensitivity Test 2          | 0       | 5,646   | 9,781   | 7,872   | 6,792   | 5,666   | 4,551   | 3,474   | 2,406   | 1,316   | -416    | 47,089  |
| Sensitivity Test 3          | 0       | 1,583   | 2,592   | 1,911   | 1,546   | 1,133   | 734     | 372     | -38     | -416    | -1,392  | 8,024   |
| Sensitivity Test 4          | 0       | 2,781   | 4,697   | 3,633   | 3,041   | 2,472   | 1,861   | 1,260   | 654     | 80      | -1,125  | 19,354  |
| Sensitivity Test 5          | 0       | 5,030   | 8,647   | 6,859   | 5,858   | 4,866   | 3,911   | 2,944   | 1,999   | 1,045   | -606    | 40,553  |
| Sensitivity Test 6          | 0       | 2,097   | 736     | -489    | -977    | -1,174  | -1,267  | -1,321  | -1,360  | -1,366  | -1,902  | -7,023  |
| Sensitivity Test 7          | 0       | 340     | -573    | -993    | -1,163  | -1,242  | -1,292  | -1,330  | -1,364  | -1,367  | -1,903  | -10,886 |

Table 4-21: Sensitivity Test Outputs (Outturn Values, £'000s)

| Option/ Scenario   | 2020/21 | 2021/22 | 2022/23 | 2023/24 | 2024/25 | 2025/26 | 2026/27 | 2027/28 | 2028/29 | 2029/30 | 2030/31 | Total  |
|--------------------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|--------|
| Sensitivity Test 8 | 0       | 3,101   | 5,257   | 4,093   | 3,431   | 2,778   | 2,157   | 1,502   | 842     | 215     | -1,052  | 22,324 |

## 5. Financial Statements

The budget, funding and cashflow statements for the core scenario of the preferred option are outlined in Table 5-1 to Table 5-3 for the three year operational period scenario and Table 5-4 to Table 5-6 for the longer operational period scenario. The key findings of the financial statements are:

- The budget statement demonstrates that the aggregate net operating income is in surplus across both appraisal period, leading to the development of a revenue reinvestment reserve amounting to between £17.1 million (three-year operational period) and £29.9 million (ten-year operational period).
- The funding statement demonstrates that the implementation and operation of the preferred option will require £43.1 million in external capital funding and £1.7 million in external operational funding. The Implementation Fund (£7.2 million in CAPEX and £1.7m in OPEX) and Clean Air Fund (£35.9 million) are the proposed central government funding streams.
- The cashflow statement demonstrates that the net cashflow is positive at an aggregate level over the appraisal period

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Table 5-1: Budget Statement – Three Year Operation (Outturn Values)

| Operational Item              | 2019/20 | 2020/21 | 2021/22 | 2022/23 | 2023/24 | 2024/25 | 2025/26 | 2026/27 | 2027/28 | 2028/29 | 2029/30 | 2030/31 | Total  |
|-------------------------------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|--------|
| <b>Operating Income</b>       |         |         |         |         |         |         |         |         |         |         |         |         |        |
| Operating Revenue             | 0       | 0       | 5,042   | 8,820   | 7,227   | 3,298   | 0       | 0       | 0       | 0       | 0       | 0       | 24,387 |
| Operating Grant               | 0       | 560     | 1,120   | 0       | 0       | 0       | 0       | 0       | 0       | 0       | 0       | 0       | 1,680  |
| <b>Operating Expenses</b>     |         |         |         |         |         |         |         |         |         |         |         |         |        |
| Operating Costs               | 0       | 560     | 2,264   | 2,176   | 1,995   | 983     | 5       | 55      | 56      | 57      | 29      | 0       | 8,229  |
| Decommissioning               | 0       | 0       | 0       | 0       | 0       | 743     | 0       | 0       | 0       | 0       | 0       | 0       | 743    |
| Total                         | 0       | 560     | 2,264   | 2,176   | 1,995   | 1,726   | 54      | 55      | 56      | 57      | 29      | 0       | 8,971  |
| <b>Net Operating Income</b>   | 0       | 0       | 3,898   | 6,644   | 5,232   | 1,573   | 54      | -55     | -56     | -57     | -29     | 0       | 17,097 |
| <b>Use of Net Income</b>      |         |         |         |         |         |         |         |         |         |         |         |         |        |
| Deficit Coverage              | 0       | 0       | 251     | 0       | 0       | 0       | 0       | 0       | 0       | 0       | 0       | 0       | 251    |
| Reinvestment Reserve          | 0       | 0       | 3,648   | 6,644   | 5,232   | 1,573   | 0       | 0       | 0       | 0       | 0       | 0       | 17,097 |
| <b>Residual Cash Position</b> | 0       | 0       | 0       | 0       | 0       | 0       | 0       | 0       | 0       | 0       | 0       | 0       | 0      |

Table 5-2: Funding Statement – Three Year Operation (Outturn Values)

| Operational Item           | 2019/20 | 2020/21 | 2021/22 | 2022/23 | 2023/24 | 2024/25 | 2025/26 | 2026/27 | 2027/28 | 2028/29 | 2029/30 | 2030/31 | Total  |
|----------------------------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|--------|
| <b>Implementation Fund</b> |         |         |         |         |         |         |         |         |         |         |         |         |        |
| Capital                    | 0       | 0       | 7,233   | 0       | 0       | 0       | 0       | 0       | 0       | 0       | 0       | 0       | 7,233  |
| Revenue                    | 0       | 560     | 1,120   | 0       | 0       | 0       | 0       | 0       | 0       | 0       | 0       | 0       | 1,680  |
| Total                      | 0       | 560     | 8,354   | 0       | 0       | 0       | 0       | 0       | 0       | 0       | 0       | 0       | 8,914  |
| <b>Clean Air Fund</b>      |         |         |         |         |         |         |         |         |         |         |         |         |        |
| Capital                    | 0       | 0       | 35,878  | 0       | 0       | 0       | 0       | 0       | 0       | 0       | 0       | 0       | 35,878 |
| Revenue                    | 0       | 0       | 0       | 0       | 0       | 0       | 0       | 0       | 0       | 0       | 0       | 0       | 0      |
| Total                      | 0       | 0       | 35,878  | 0       | 0       | 0       | 0       | 0       | 0       | 0       | 0       | 0       | 35,878 |
| <b>Total</b>               |         |         |         |         |         |         |         |         |         |         |         |         |        |

| Operational Item | 2019/20 | 2020/21 | 2021/22 | 2022/23 | 2023/24 | 2024/25 | 2025/26 | 2026/27 | 2027/28 | 2028/29 | 2029/30 | 2030/31 | Total  |
|------------------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|--------|
| Capital          | 0       | 0       | 43,112  | 0       | 0       | 0       | 0       | 0       | 0       | 0       | 0       | 0       | 43,112 |
| Revenue          | 0       | 560     | 1,120   | 0       | 0       | 0       | 0       | 0       | 0       | 0       | 0       | 0       | 1,680  |
| Total            | 0       | 560     | 44,232  | 0       | 0       | 0       | 0       | 0       | 0       | 0       | 0       | 0       | 44,792 |

Table 5-3: Cashflow Statement – Three Year Operation (Outturn Values)

| Operational Item          | 2019/20 | 2020/21 | 2021/22 | 2022/23 | 2023/24 | 2024/25 | 2025/26 | 2026/27 | 2027/28 | 2028/29 | 2029/30 | 2030/31 | Total  |
|---------------------------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|--------|
| Capital Grant from IF/CAF | 0       | 0       | 43,112  | 0       | 0       | 0       | 0       | 0       | 0       | 0       | 0       | 0       | 43,112 |
| Operating Revenue         | 0       | 0       | 5,042   | 8,820   | 7,227   | 3,298   | 0       | 0       | 0       | 0       | 0       | 0       | 24,387 |
| Revenue Grant from IF/CAF | 0       | 560     | 1,120   | 0       | 0       | 0       | 0       | 0       | 0       | 0       | 0       | 0       | 1,680  |
| Capital Costs             | 0       | 0       | 43,112  | 0       | 0       | 0       | 0       | 0       | 0       | 0       | 0       | 0       | 43,112 |
| Operating Costs           | 0       | 560     | 2,264   | 2,176   | 1,995   | 98      | 54      | 55      | 56      | 57      | 29      | 0       | 8,229  |
| Decommissioning           | 0       | 0       | 0       | 0       |         | 743     | 0       | 0       | 0       | 0       | 0       | 0       | 743    |
| Net Cashflow              | 0       | 0       | 3,898   | 44      | 5,232   | 1,573   | -54     | -55     | -56     | -57     | -29     | 0       | 17,097 |

Table 5-4: Budget Statement – Ten Year Operation (Outturn Values)

| Operational Item          | 2019/20 | 2020/21 | 2021/22 | 2022/23 | 2023/24 | 2024/25 | 2025/26 | 2026/27 | 2027/28 | 2028/29 | 2029/30 | 2030/31 | Total  |
|---------------------------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|--------|
| <b>Operating Income</b>   |         |         |         |         |         |         |         |         |         |         |         |         |        |
| Operating Revenue         | 0       | 0       | 5,042   | 8,820   | 7,227   | 6,366   | 5,503   | 4,651   | 3,813   | 2,968   | 2,129   | 1,145   | 47,665 |
| Operating Grant           | 0       | 560     | 1,120   | 0       | 0       | 0       | 0       | 0       | 0       | 0       | 0       | 0       | 1,680  |
| <b>Operating Expenses</b> |         |         |         |         |         |         |         |         |         |         |         |         |        |
| Operating Costs           | 0       | 560     | 2,264   | 2,176   | 1,995   | 1,894   | 1,841   | 1,780   | 1,688   | 1,642   | 1,567   | 1,129   | 18,536 |
| Decommissioning           | 0       | 0       | 0       | 0       | 0       | 0       | 0       | 0       | 0       | 0       | 0       | 882     | 882    |
| Total                     | 0       | 560     | 2,264   | 2,176   | 1,995   | 1,894   | 1,841   | 1,780   | 1,688   | 1,642   | 1,567   | 2,010   | 19,418 |
| Net Operating Income      | 0       | 0       | 3,898   | 6,644   | 5,232   | 4,471   | 3,662   | 2,871   | 2,125   | 1,327   | 562     | -865    | 29,927 |
| <b>Use of Net Income</b>  |         |         |         |         |         |         |         |         |         |         |         |         |        |

| Operational Item              | 2019/20  | 2020/21  | 2021/22  | 2022/23  | 2023/24  | 2024/25  | 2025/26  | 2026/27  | 2027/28  | 2028/29  | 2029/30  | 2030/31  | Total    |
|-------------------------------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| Deficit Coverage              | 0        | 0        | 865      | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 865      |
| Reinvestment Reserve          | 0        | 0        | 3,033    | 6,644    | 5,232    | 4,471    | 3,662    | 2,871    | 2,125    | 1,327    | 562      | 0        | 29,927   |
| <b>Residual Cash Position</b> | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b> |

Table 5-5: Funding Statement – Ten Year Operation (Outturn Values)

| Operational Item           | 2019/20  | 2020/21    | 2021/22       | 2022/23  | 2023/24  | 2024/25  | 2025/26  | 2026/27  | 2027/28  | 2028/29  | 2029/30  | 2030/31  | Total         |
|----------------------------|----------|------------|---------------|----------|----------|----------|----------|----------|----------|----------|----------|----------|---------------|
| <b>Implementation Fund</b> |          |            |               |          |          |          |          |          |          |          |          |          |               |
| Capital                    | 0        | 0          | 7,233         | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 7,233         |
| Revenue                    | 0        | 560        | 1,120         | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 1,680         |
| <b>Total</b>               | <b>0</b> | <b>560</b> | <b>8,354</b>  | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b> | <b>8,914</b>  |
| <b>Clean Air Fund</b>      |          |            |               |          |          |          |          |          |          |          |          |          |               |
| Capital                    | 0        | 0          | 35,878        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 35,878        |
| Revenue                    | 0        | 0          | 0             | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0             |
| <b>Total</b>               | <b>0</b> | <b>0</b>   | <b>35,878</b> | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b> | <b>35,878</b> |
| <b>Total</b>               |          |            |               |          |          |          |          |          |          |          |          |          |               |
| Capital                    | 0        | 0          | 43,112        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 43,112        |
| Revenue                    | 0        | 560        | 1,120         | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 1,680         |
| <b>Total</b>               | <b>0</b> | <b>560</b> | <b>44,232</b> | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b> | <b>44,792</b> |

Table 5-6: Cashflow Statement – Ten Year Operation (Outturn Values)

| Operational Item          | 2019/20 | 2020/21 | 2021/22 | 2022/23 | 2023/24 | 2024/25 | 2025/26 | 2026/27 | 2027/28 | 2028/29 | 2029/30 | 2030/31 | Total  |
|---------------------------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|--------|
| Capital Grant from IF/CAF | 0       | 0       | 43,112  | 0       | 0       | 0       | 0       | 0       | 0       | 0       | 0       | 0       | 43,112 |
| Operating Revenue         | 0       | 0       | 5,042   | 8,820   | 7,227   | 6,366   | 5,503   | 4,651   | 3,813   | 2,968   | 2,129   | 1,145   | 47,665 |
| Revenue Grant from IF/CAF | 0       | 560     | 1,120   | 0       | 0       | 0       | 0       | 0       | 0       | 0       | 0       | 0       | 1,680  |
| Capital Costs             | 0       | 0       | 43,112  | 0       | 0       | 0       | 0       | 0       | 0       | 0       | 0       | 0       | 43,112 |
| Operating Costs           | 0       | 560     | 2,264   | 2,176   | 1,995   | 1,894   | 1,841   | 1,780   | 1,688   | 1,642   | 1,567   | 1,129   | 18,536 |

| Operational Item | 2019/20 | 2020/21 | 2021/22 | 2022/23 | 2023/24 | 2024/25 | 2025/26 | 2026/27 | 2027/28 | 2028/29 | 2029/30 | 2030/31 | Total  |
|------------------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|--------|
| Decommissioning  | 0       | 0       | 0       | 0       | 0       | 0       | 0       | 0       | 0       | 0       | 0       | 882     | 882    |
| Net Cashflow     | 0       | 0       | 3,898   | 6,644   | 5,232   | 4,471   | 3,662   | 2,871   | 2,125   | 1,327   | 562     | -865    | 29,927 |

## 6. Summary and Conclusions

The financial analysis of the Clean Air Plan options demonstrates that the capital cost of implementation will amount to £43.1 million (outturn values). BCC is requesting between 17% of this funding from the Implementation Fund to support capital expenditure. BCC is requesting the residual funding from the Clean Air Fund to support capital expenditure on mitigation measures.

From an operational perspective, the financial analysis demonstrates that CAZ revenue is sufficient to cover operational costs for all Clean Air Plan options based on core scenario analysis. However, it is likely that the operational stage of the CAZ will incur costs prior to any revenue being accrued. As such, BCC are requesting upfront funding support of c. £1.7 million to cover operational staff costs and publicity and advertising costs prior to CAZ commencement and accrual of CAZ revenue.

Further, there is significant uncertainty around the timing, profile and scale of CAZ revenue generation. Sensitivity testing demonstrates that changes to profiling of the reduction in non-compliant traffic have the largest impact on the operational position of the Clean Air Plan. For example, significant acceleration in the reduction of non-compliant vehicles (e.g. because the rate of vehicle upgrading or behavioural choices towards non-car travel materialise faster than forecast) could significantly reduce CAZ income and transform any operational surplus into an operational deficit.

In summary, the total request to central government for the delivery of the Clean Air Plan can be summarised as follows:

- £43.1 million in capital grant funding, of which:
  - £7.2 million from the Implementation Fund
  - £35.9 million from the Clean Air Fund
- £1.7 million in operational funding from the Implementation Fund

The operational revenue funding requirement is necessary to cover upfront operational costs associated with staff costs and publicity/advertising costs which will precede CAZ commencement (and therefore any revenue generation). That said, under the core scenario for financial modelling, both operational period scenarios can achieve a net operational surplus of between c. £17.1 million and c. £29.9 million over the appraisal period. It is intended that any surplus can be used to:

- Cover any operational deficits in later stages of the appraisal period;
- Creation of a reinvestment reserve to support:
  - Any underestimation of operational costs.
  - Delivery of BCC's 'Liveable Neighbourhoods' aspirations (estimated cost range £45m to £283m);
  - Supplementary schemes to the CAF measures, as well providing an opportunity to further invest in engagement with businesses and local residents affected by the schemes. For example, this funding source would support or extend some of the following measures which may form part of the CAF bid:
- Additional financial support to businesses and residents to upgrade vehicles;
- Increase, Improve, update Legible City Signage on key radials and in city centre;
- An 'unintended consequences' fund for minor local implementations such as one-ways; and
- Support for additional buses to the Bristol Royal Infirmary.



## 7. Addendum on Updated Project Costs

### 7.1 Overview

The following section presents an updated analysis of the 'core' scenario based on the updated scheme costs. It also applies the updated scheme costs to an additional sensitivity test (Sensitivity Test 9). No other existing scenario is reconsidered.

### 7.2 Capital Expenditure Summary

A central estimate for scheme implementation cost is £44.3 million (2021 prices). Given capital expenditure (CAPEX) is expected to take place in 2021, no inflation adjustments are made to this estimated cost. Note that around 19% of the capital funding request will be targeted towards the Implementation Fund. The remainder will be targeted towards the Clean Air Fund.

Tables 7.1 and 7.2 present a summary of how the CAPEX estimate is built up, split by broad theme and funding source. A more detailed breakdown of CAPEX costs is provided in Box format in FBC33: Project Costs, which forms Appendix J of the FBC.

Table 7-1: CAPEX by broad theme and funding source (£2021 prices)

| CAPEX Item                                  | Implementation Fund | Clean Air Fund    | Total             |
|---|---------------------|-------------------|-------------------|
| Enforcement System                          | 700,291             |                   | 700,291           |
| Street Works                                | 3,603,044           |                   | 3,603,044         |
| Other CAPEX                                 | 20,149              |                   | 20,149            |
| Non-Charging Measures - Implementation Fund | 1,265,726           |                   | 1,265,726         |
| Non-Charging Measures - Clean Air Fund      |                     | 35,878,344        | 35,878,344        |
| QRA (P80)                                   | 2,801,000           |                   | 2,801,000         |
| <b>Total</b>                                | <b>8,390,210</b>    | <b>35,878,344</b> | <b>44,268,554</b> |

The scale and profile of expenditure is outlined in Table 7-2 which provides a more comprehensive Capital Expenditure Summary for the project. Further detail on cost estimation is provided in FBC33: which forms Appendix J of the FBC.



## 7.3 Operational Summary

### 7.3.1 Revenue

The CAZ is estimated to gross £24.4 million in revenue at the end of a three year operational period, or £47.7 million in 2030 across the ten year operational period, as set out in Table 7.3. Note that for the longer operational period in particular, the scale of total income generation declines rapidly over time from £8.8 million in the first full year of operation (2022/23) to £1.1 million at the end of the appraisal period (2030/31).

It should be noted that the revenue generation predicted in Table 7.3 is reliant on a number of key assumptions which are not certain. BCC have made reasonable attempts to estimate these assumptions based on similar schemes administered locally, but since a CAZ of this type has not yet been implemented, the available evidence is limited and hence the forecasts are uncertain.

### 7.3.2 Operational Costs

The core estimate for the scheme's operational costs is between £7.7 million (shorter operational period) and £15.9 million (longer operational period) (2021 prices). This estimate increases to between £7.9 million and £17.3 million taking into account inflation (labour costs inflated at 2% p.a. based on BCC's annual wage uplift estimates and other operating costs inflated at 2.9% in line with OBR retail price index growth forecast). Table 4-16 presents a summary of how this OPEX estimate is built up split by broad theme.

A more detailed breakdown of OPEX costs is provided in BoQ format in Appendix J. The timing of expenditure is outlined in Table 7.4, which provides a more comprehensive Operational Expenditure Summary for the project.

### 7.3.3 Net Operational Position

In line with JAQU guidance, the intention as far as it is possible – is to cover all operating costs (i.e. those related to running and administering the CAZ itself) through revenue generated by the scheme.

Based on the scale and timing of revenue generation and operational costs reported in Table 7-5 and 7-6 respectively, Table 7.5 outlines the net operational cashflow associated with the Clean Air Plan, under the core scenario for each intervention option. The analysis indicates that cumulatively, revenue generation will exceed operational costs, resulting in a net operational surplus of between £17.5 million (three year operation) and £31.4 million (ten year operation) across the appraisal periods.

However, the scheme is forecast to generate a net operational deficit in the pre-implementation phase (as no revenue is forecast to materialise prior to October 2021, but some costs are incurred). Further, for the ten year operation scenario, the later years of the appraisal period are also forecast to generate a net operational deficit (as the number of non-compliant vehicles falls but scheme operations are maintained). Whilst it is intended that the net operational deficit identified in the later years of the appraisal period can be covered by the anticipated net operational surplus identified above, it is not possible to directly use this surplus for upfront operational costs incurred prior to the receipt of revenue. As such, BCC are requesting funding from JAQU's Implementation Fund to cover any operational costs incurred prior to CAZ commencement. These costs are forecast to reach c. £1.0 million prior to October 2021, across financial years 2020/21 and 2021/22. BCC recognise that in the event that the CAZ generates sufficient operational surplus in financial year 2021/22, there is scope to refund the requested Implementation Fund grant of £1.0 million to cover upfront pre-opening operational costs. This position will be determined through full reconciliation and audit at the end of the financial year.

Table 7-5 represents the current best estimate for operational revenues and costs. However, acknowledging that Clean Air Plans are a nascent concept and that there is no precedent or direct benchmark for the timing and scale of revenues in particular, a significant degree of uncertainty can be attached to the above analysis.

Notwithstanding this uncertainty, the core analysis demonstrates that the CAZ revenue is sufficient to cover operational costs of the scheme under both operational period scenarios. In fact, the proposed Clean Air Plan is

forecast to generate a considerable positive cash flow over the appraisal period. Any cashflow surplus associated with the scheme will be ringfenced for the following purposes, in order of priority:

- Deficit coverage for ongoing and long-term operational expenditure, particularly in latter years of operation when the various schemes are anticipated to face an operational deficit, as well as decommissioning.
- Potential repayment of £1.0 million request from Implementation Fund to support operational costs incurred prior to October 2021 switch-on (subject to sufficient surplus and full reconciliation and audit).
- Creation of a reinvestment reserve to support:
  - Any underestimation of operational costs.
  - Delivery of BCC's 'Liveable Neighbourhoods' aspirations (estimated cost range £45m to £283m);
  - Supplementary schemes to the CAF measures, as well providing an opportunity to further invest in engagement with businesses and local residents affected by the schemes. For example, this funding source would support or extend some of the following measures which may form part of the CAF bid:
    - Additional financial support to businesses and residents to upgrade vehicles;
    - Increase, Improve, update Legible City Signage on key roads and in city centre;
    - An 'unintended consequences' fund for minor local implementations such as one-ways; and
    - Support for additional buses to the Bristol Royal Infirmary.

Within this context, the residual cash position for the CAF Bristol is expected to be neutral throughout the appraisal periods, as demonstrated in Tables 7-6 and 7-7.

Table 7-3: Total CAZ Income

| Total CAZ Income            |           |           |           |           |           |           |           |           |         |         |            |
|-----------------------------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|---------|---------|------------|
| Vehicle Type                | 2021/22   | 2022/23   | 2023/24   | 2024/25   | 2025/26   | 2026/27   | 2027/28   | 2028/29   | 2029/30 | 2030/31 | Total      |
| <b>Three Year Operation</b> |           |           |           |           |           |           |           |           |         |         |            |
| Total                       | 5,041,794 | 8,819,979 | 7,227,175 | 3,298,386 | 0         | 0         | 0         | 0         | 0       | 0       | 24,387,335 |
| <b>Ten Year Operation</b>   |           |           |           |           |           |           |           |           |         |         |            |
| Total                       | 5,041,794 | 8,819,979 | 7,227,175 | 6,365,725 | 5,503,239 | 4,650,766 | 3,813,397 | 2,968,411 | 129,112 | 68      | 47,664,727 |

Table 7-4: OPEX by broad theme and funding source (£)

| OPEX Item  | Three Year Operation |                   | Ten Year Operation |                   |
|--|----------------------|-------------------|--------------------|-------------------|
|  | 2021 Prices (£)      | Outturn Costs (£) | 2021 Price (£)     | Outturn Costs (£) |
| Systems Operations and Maintenance                                   | 4,367,378            | 4,0919            | 10,228,412         | 10,921,727        |
| Camera, Comms, Signage and Building Maintenance and Operation - OPEX | 994,559              | 1,045,5           | 3,066,556          | 3,534,404         |
| CAZ Project Delivery & Ongoing Operational Management Team           | 888,813              | 88,813            | 888,813            | 888,813           |
| Monitoring and Evaluation  | 389,869              | 428,827           | 389,869            | 428,827           |
| Decommissioning at Scheme End - OPEX                                 | 681,616              | 742,653           | 681,616            | 881,614           |
| PCN Production   | 242,283              | 253,781           | 479,434            | 532,675           |
| CAZ Publicity and Advertising  | 127,500              | 127,500           | 127,500            | 127,500           |
| <b>Total</b>   | <b>7,692,018</b>     | <b>7,948,437</b>  | <b>15,862,200</b>  | <b>17,315,560</b> |

Table 7-5: Net Cash Flow Position: Core Scenario (Outturn Prices)

| Net Cash Flow Position (£'000s)               |         |         |         |         |         |         |         |         |         |         |         |         |        |
|---|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|--------|
| Operational Item                              | 2019/20 | 2020/21 | 2021/22 | 2022/23 | 2023/24 | 2024/25 | 2025/26 | 2026/27 | 2027/28 | 2028/29 | 2029/30 | 2030/31 | Total  |
| <b>Three Year Operation</b>                   |         |         |         |         |         |         |         |         |         |         |         |         |        |
| Operational Income                            | 0       | 0       | 5,042   | 8,820   | 7,227   | 3,29    | 0       | 0       | 0       | 0       | 0       | 0       | 24,387 |
| CAZ-Related OPEX <sup>12</sup>                | 0       | 339     | 1,765   | 2,055   | 1,873   | 1,666   | 54      | 55      | 56      | 57      | 29      | 0       | 7,948  |
| Net Operating Position (pre IF grant)         | 0       | -339    | 3,277   | 6,765   | 5,355   | 6       | 54      | -55     | -56     | -57     | -29     | 0       | 16,439 |
| Implementation Fund Operational Grant Request | 0       | 339     | 678     | 0       | 0       | 0       | 0       | 0       | 0       | 0       | 0       | 0       | 1,016  |
| Net Operating Position (post IF grant)        | 0       | 0       | 3,954   | 6,765   | 5,355   | 1,632   | -54     | -55     | -56     | -57     | -29     | 0       | 17,455 |
| <b>Ten Year Operation</b>                     |         |         |         |         |         |         |         |         |         |         |         |         |        |
| Operational Income                            | 0       | 0       | 5,042   | 8,820   | 27      | 6,3     | 5,503   | 4,651   | 3,813   | 2,968   | 2,129   | 1,145   | 47,665 |
| CAZ-Related OPEX                              | 0       | 339     | 1,765   | 2,055   | 1,873   | 1,72    | 1,696   | 1,605   | 1,546   | 1,474   | 1,350   | 1,840   | 17,316 |
| Net Operating Position (pre IF grant)         | 0       | -339    | 3,277   | 6,76    | 5,355   | ,593    | 3,807   | 3,046   | 2,268   | 1,494   | 779     | -694    | 30,349 |
| Implementation Fund Operational Grant Request | 0       | 339     | 678     | 0       | 0       | 0       | 0       | 0       | 0       | 0       | 0       | 0       | 1,016  |
| Net Operating Position (post IF grant)        | 0       | 0       | 3,954   | 6,      | 5,5     | 4,593   | 3,807   | 3,046   | 2,268   | 1,494   | 779     | -694    | 31,365 |

Table 7-6: Residual Cash Flow Position – Three Year Operation (£'000s)

| Net Cash Flow Position (£'000s) Outturn Values |         |         |         |         |         |         |         |         |         |         |         |         |        |
|--|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|--------|
| Operational Item                               | 2019/20 | 2020/21 | 2021/22 | 2022/23 | 2023/24 | 2024/25 | 2025/26 | 2026/27 | 2027/28 | 2028/29 | 2029/30 | 2030/31 | Total  |
| Net Cashflow                                   | 0       | 0       | 3,954   | 6,765   | 5,355   | 1,632   | -54     | -55     | -56     | -57     | -29     | 0       | 17,455 |
| Deficit Coverage                               | 0       | 0       | 251     | 0       | 0       | 0       | 0       | 0       | 0       | 0       | 0       | 0       | 251    |
| Reinvestment Reserve (residual monies)         | 0       | 0       | 3,704   | 6,765   | 5,355   | 1,632   | 0       | 0       | 0       | 0       | 0       | 0       | 17,455 |
| <b>Residual Cash Position</b>                  | 0       | 0       | 0       | 0       | 0       | 0       | 0       | 0       | 0       | 0       | 0       | 0       | 0      |

<sup>12</sup> Note that although the CAZ is assumed to switch off after three years, ongoing monitoring and evaluation costs will persist for eight years, hence the ongoing OPEX after September 2024..

Table 7-7: Residual Cash Flow Position – Ten Year Operation (£'000s)

| Net Cash Flow Position (£'000s) Outturn Values |         |         |         |         |         |         |         |         |         |         |         |         |        |
|--|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|--------|
| Operational Item                               | 2019/20 | 2020/21 | 2021/22 | 2022/23 | 2023/24 | 2024/25 | 2025/26 | 2026/27 | 2027/28 | 2028/29 | 2029/30 | 2030/31 | Total  |
| Net Cashflow                                   | 0       | 0       | 3,954   | 6,765   | 5,355   | 4,593   | 3,807   | 3,046   | 2,268   | 1,494   | 779     | -694    | 31,365 |
| Deficit Coverage                               | 0       | 0       | 694     | 0       | 0       | 0       | 0       | 0       | 0       | 0       | 0       | 0       | 694    |
| Reinvestment Reserve (residual monies)         | 0       | 0       | 3,260   | 6,765   | 5,355   | 4 93    | 3,807   | 3,046   | 2,268   | 1,494   | 779     | 0       | 31,365 |
| Residual Cash Position                         | 0       | 0       | 0       | 0       | 0       |         |         | 0       | 0       | 0       | 0       | 0       | 0      |





Ten Year Operation

|  | 2021 Prices |           |           |           |           |           |           |           |           |           |           | Totals     |
|--|-------------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|------------|
| Systems Operation and Maintenance  | 0           | 840,479   | 1,547,764 | 1,350,245 | 1,231,313 | 1,136,541 | 1,028,444 | 950,650   | 862,530   | 755,681   | 524,766   | 10,228,412 |
| Camera, Comms, Signage and Building Maintenance and Operation - OPEX         | 0           | 165,760   | 331,520   | 331,520   | 331,520   | 331,520   | 331,520   | 331,520   | 331,520   | 331,520   | 248,640   | 3,066,556  |
| CAZ Project Delivery & Ongoing Operational Management Team (staff resources) | 296,271     | 592,542   | 0         | 0         | 0         | 0         | 0         | 0         | 0         | 0         | 0         | 888,813    |
| Monitoring and Evaluation  | 0           | 24,367    | 48,734    | 48,734    | 48,734    | 48,734    | 48,734    | 48,734    | 48,734    | 24,367    | 0         | 389,869    |
| Decommissioning at Scheme End - OPEX   | 0           | 0         | 0         | 0         | 0         | 0         | 0         | 0         | 0         | 0         | 681,616   | 681,616    |
| PCN Production   | 0           | 48,834    | 87,094    | 73,002    | 64,394    | 55,774    | 47,256    | 38,852    | 30,350    | 21,923    | 11,955    | 479,434    |
| CAZ Publicity and Advertising  | 42,500      | 85,000    | 0         | 0         | 0         | 0         | 0         | 0         | 0         | 0         | 0         | 127,500    |
| Totals   | 338,771     | 1,756,981 | 2,015,111 | 1,803,500 | 1,675,961 | 1,572,568 | 1,455,953 | 1,369,755 | 1,273,133 | 1,133,490 | 1,466,977 | 15,862,200 |
| Net Cash Flow  | -338,771    | 3,284,813 | 6,804,868 | 5,423,676 | 4,689,764 | 3,930,671 | 3,194,813 | 2,443,642 | 1,695,338 | 995,622   | -321,909  | 31,802,526 |
| Net Cash Flow (Post-Implementation Fund Revenue Grant)                       | 0           | 3,962,355 | 6,804,868 | 5,423,676 | 4,689,764 | 3,930,671 | 3,194,813 | 2,443,642 | 1,695,338 | 995,622   | -321,909  | 32,818,839 |

|  | Forecast Outturn Prices |           |           |           |           |           |           |           |           |           |           | Totals     |
|--|-------------------------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|------------|
|  | 0                       | 845,323   | 1,571,360 | 1,389,942 | 1,285,691 | 1,205,585 | 1,110,145 | 1,047,125 | 971,801   | 873,918   | 620,838   | 10,921,727 |
|  | 0                       | 168,163   | 343,607   | 353,571   | 363,825   | 374,376   | 385,233   | 396,405   | 407,900   | 419,729   | 321,595   | 3,534,404  |
|  | 296,271                 | 592,542   | 0         | 0         | 0         | 0         | 0         | 0         | 0         | 0         | 0         | 888,813    |
|  | 0                       | 24,639    | 50,099    | 51,217    | 52,362    | 53,532    | 54,730    | 55,955    | 57,209    | 29,083    | 0         | 428,827    |
|  | 0                       | 0         | 0         | 0         | 0         | 0         | 0         | 0         | 0         | 0         | 881,614   | 881,614    |
|  | 0                       | 49,467    | 90,173    | 77,801    | 70,612    | 62,926    | 54,855    | 46,397    | 37,283    | 27,698    | 15,463    | 532,675    |
|  | 42,500                  | 85,000    | 0         | 0         | 0         | 0         | 0         | 0         | 0         | 0         | 0         | 127,500    |
|  | 338,771                 | 1,765,134 | 2,055,238 | 1,872,532 | 1,772,489 | 1,696,419 | 1,604,963 | 1,545,882 | 1,474,194 | 1,350,429 | 1,839,509 | 17,315,560 |
|  | -338,771                | 3,276,660 | 6,764,741 | 5,354,643 | 4,593,236 | 3,806,820 | 3,045,803 | 2,267,514 | 1,494,278 | 778,683   | -694,441  | 30,349,166 |
|  | 0                       | 3,954,202 | 6,764,741 | 5,354,643 | 4,593,236 | 3,806,820 | 3,045,803 | 2,267,514 | 1,494,278 | 778,683   | -694,441  | 31,365,480 |

## 7.4 Sensitivity Testing

As noted in Section 1.2, an additional sensitivity test has been prepared. Sensitivity Test 9 reflects the updated costs that are also incorporated into the 'core' scenario outlined in Section 7.1-7.3. Sensitivity Test 9 is consistent with the 'core' scenario, but with an increase in CAZ & contravention charges of 25% to reflect the possibility of increase the charges if the level of compliance is not achieved.

The outputs of the additional sensitivity test in terms of outturn cashflow is presented in the following table. The outputs demonstrate that an increase in CAZ charges will increase the net operating position for the CAZ<sup>13</sup>.

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<sup>13</sup> Note that this sensitivity test assumes no change in the volume of non-compliant traffic as a result of higher charges. The higher charges are applied to the same volume of traffic assumed to interact with the CAZ as part of the core scenario. In reality, an increase in charges could dissuade some non-compliant traffic, however, in the absence of detailed traffic modelling to support this assumption, traffic flows are not altered in this sensitivity test.

Table 0-9: Sensitivity Test Outputs (Outturn Values, £'000s)

| Option/ Scenario            | 2020/21 | 2021/22 | 2022/23 | 2023/24 | 2024/25 | 2025/26 | 2026/27 | 2027/28 | 2028/29 | 2029/30 | 2030/31 | Total  |
|-----------------------------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|--------|
| <b>Three Year Operation</b> |         |         |         |         |         |         |         |         |         |         |         |        |
| Core Scenario               | 0       | 3,954   | 6,765   | 5,355   | 1,632   | -54     | -55     | -56     | -57     | -29     | 0       | 17,455 |
| Sensitivity Test 9          | 0       | 5,112   | 8,791   | 7,015   | 2,390   | 54      | -55     | -56     | -57     | -29     | 0       | 23,057 |
| <b>Ten Year Operation</b>   |         |         |         |         |         |         |         |         |         |         |         |        |
| Core Scenario               | 0       | 3,954   | 6,765   | 5,355   | 4,593   | 3,8     | 3 46    | 2,268   | 1,494   | 779     | -694    | 31,365 |
| Sensitivity Test 9          | 0       | 5,112   | 8,791   | 7,015   | 6,056   | 5,071   | 4,115   | 3,144   | 2,177   | 1,268   | -431    | 42,317 |

## 7.5 Financial Statements

The budget, funding and cashflow statements for the core scenario of the preferred option are outlined in 7-10 to Table 7-12 for the three year operational period scenario and Table 7-13 to Table 7-15 for the longer operational period scenario. The key findings of the financial statements are:

- The budget statement demonstrates that the aggregate net operating income is in surplus across both appraisal period, leading to the development of a revenue reinvestment reserve amounting to between £17.5 million (three-year operational period) and £31.4 million (ten-year operational period).
- The funding statement demonstrates that the implementation and operation of the preferred option will require £44.4 million in external capital funding and £1.0 million in external operational funding. The Implementation Fund (£8.4 million in CAPEX and £1.0m in OPEX) and Clean Air Fund (£35.9 million) are the proposed central government funding streams.
- The cashflow statement demonstrates that the net cashflow is positive at an aggregate level over the appraisal period

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Table 7-10: Budget Statement – Three Year Operation (Outturn Values)

| Operational Item              | 2019/20 | 2020/21 | 2021/22 | 2022/23 | 2023/24 | 2024/25 | 2025/26 | 2026/27 | 2027/28 | 2028/29 | 2029/30 | 2030/31 | Total  |
|-------------------------------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|--------|
| <b>Operating Income</b>       |         |         |         |         |         |         |         |         |         |         |         |         |        |
| Operating Revenue             | 0       | 0       | 5,042   | 8,820   | 7,227   | 3,298   | 0       | 0       | 0       | 0       | 0       | 0       | 24,387 |
| Operating Grant               | 0       | 339     | 678     | 0       | 0       | 0       | 0       | 0       | 0       | 0       | 0       | 0       | 1,016  |
| <b>Operating Expenses</b>     |         |         |         |         |         |         |         |         |         |         |         |         |        |
| Operating Costs               | 0       | 339     | 1,765   | 2,055   | 1,873   | 924     | 5       | 55      | 56      | 57      | 29      | 0       | 7,206  |
| Decommissioning               | 0       | 0       | 0       | 0       | 0       | 743     | 0       | 0       | 0       | 0       | 0       | 0       | 743    |
| Total                         | 0       | 339     | 1,765   | 2,055   | 1,873   | 1,666   | 54      | 55      | 56      | 57      | 29      | 0       | 7,948  |
| <b>Net Operating Income</b>   | 0       | 0       | 3,954   | 6,765   | 5,355   | 1,622   | 54      | -55     | -56     | -57     | -29     | 0       | 17,455 |
| <b>Use of Net Income</b>      |         |         |         |         |         |         |         |         |         |         |         |         |        |
| Deficit Coverage              | 0       | 0       | 251     | 0       | 0       | 0       | 0       | 0       | 0       | 0       | 0       | 0       | 251    |
| Reinvestment Reserve          | 0       | 0       | 3,704   | 6,765   | 5,355   | 1,632   | 0       | 0       | 0       | 0       | 0       | 0       | 17,455 |
| <b>Residual Cash Position</b> | 0       | 0       | 0       | 0       | 0       | 0       | 0       | 0       | 0       | 0       | 0       | 0       | 0      |

Table 7-11: Funding Statement – Three Year Operation (Outturn Values)

| Operational Item           | 2019/20 | 2020/21 | 2021/22 | 2022/23 | 2023/24 | 2024/25 | 2025/26 | 2026/27 | 2027/28 | 2028/29 | 2029/30 | 2030/31 | Total  |
|----------------------------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|--------|
| <b>Implementation Fund</b> |         |         |         |         |         |         |         |         |         |         |         |         |        |
| Capital                    | 0       | 0       | 8,390   | 0       | 0       | 0       | 0       | 0       | 0       | 0       | 0       | 0       | 8,390  |
| Revenue                    | 0       | 339     | 678     | 0       | 0       | 0       | 0       | 0       | 0       | 0       | 0       | 0       | 1,016  |
| Total                      | 0       | 339     | 9,068   | 0       | 0       | 0       | 0       | 0       | 0       | 0       | 0       | 0       | 9,407  |
| <b>Clean Air Fund</b>      |         |         |         |         |         |         |         |         |         |         |         |         |        |
| Capital                    | 0       | 0       | 35,878  | 0       | 0       | 0       | 0       | 0       | 0       | 0       | 0       | 0       | 35,878 |
| Revenue                    | 0       | 0       | 0       | 0       | 0       | 0       | 0       | 0       | 0       | 0       | 0       | 0       | 0      |
| Total                      | 0       | 0       | 35,878  | 0       | 0       | 0       | 0       | 0       | 0       | 0       | 0       | 0       | 35,878 |
| <b>Total</b>               |         |         |         |         |         |         |         |         |         |         |         |         |        |

| Operational Item | 2019/20 | 2020/21 | 2021/22 | 2022/23 | 2023/24 | 2024/25 | 2025/26 | 2026/27 | 2027/28 | 2028/29 | 2029/30 | 2030/31 | Total  |
|------------------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|--------|
| Capital          | 0       | 0       | 44,269  | 0       | 0       | 0       | 0       | 0       | 0       | 0       | 0       | 0       | 44,269 |
| Revenue          | 0       | 339     | 678     | 0       | 0       | 0       | 0       | 0       | 0       | 0       | 0       | 0       | 1,016  |
| Total            | 0       | 339     | 44,946  | 0       | 0       | 0       | 0       | 0       | 0       | 0       | 0       | 0       | 45,285 |

Table 7-12: Cashflow Statement – Three Year Operation (Outturn Values)

| Operational Item          | 2019/20 | 2020/21 | 2021/22 | 2022/23 | 2023/24 | 2024/25 | 2025/26 | 2026/27 | 2027/28 | 2028/29 | 2029/30 | 2030/31 | Total  |
|---------------------------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|--------|
| Capital Grant from IF/CAF | 0       | 0       | 44,269  | 0       | 0       | 0       | 0       | 0       | 0       | 0       | 0       | 0       | 44,269 |
| Operating Revenue         | 0       | 0       | 5,042   | 8,820   | 7,227   | 3,298   | 0       | 0       | 0       | 0       | 0       | 0       | 24,387 |
| Revenue Grant from IF/CAF | 0       | 339     | 678     | 0       | 0       | 0       | 0       | 0       | 0       | 0       | 0       | 0       | 1,016  |
| Capital Costs             | 0       | 0       | 44,269  | 0       | 0       | 0       | 0       | 0       | 0       | 0       | 0       | 0       | 44,269 |
| Operating Costs           | 0       | 339     | 1,765   | 2,055   | 1,87    | 92      | 54      | 55      | 56      | 57      | 29      | 0       | 7,206  |
| Decommissioning           | 0       | 0       | 0       | 0       |         | 743     | 0       | 0       | 0       | 0       | 0       | 0       | 743    |
| Net Cashflow              | 0       | 0       | 3,954   | 65      | 5,355   | 1,632   | -54     | -55     | -56     | -57     | -29     | 0       | 17,455 |

Table 7-13: Budget Statement – Ten Year Operation (Outturn Values)

| Operational Item            | 2019/20 | 2020/21 | 2021/22 | 2022/23 | 2023/24 | 2024/25 | 2025/26 | 2026/27 | 2027/28 | 2028/29 | 2029/30 | 2030/31 | Total  |
|-----------------------------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|--------|
| <b>Operating Income</b>     |         |         |         |         |         |         |         |         |         |         |         |         |        |
| Operating Revenue           | 0       | 0       | 5,042   | 8,820   | 7,227   | 6,366   | 5,503   | 4,651   | 3,813   | 2,968   | 2,129   | 1,145   | 47,665 |
| Operating Grant             | 0       | 339     | 678     | 0       | 0       | 0       | 0       | 0       | 0       | 0       | 0       | 0       | 1,016  |
| <b>Operating Expenses</b>   |         |         |         |         |         |         |         |         |         |         |         |         |        |
| Operating Costs             | 0       | 339     | 1,765   | 2,055   | 1,873   | 1,772   | 1,696   | 1,605   | 1,546   | 1,474   | 1,350   | 958     | 16,434 |
| Decommissioning             | 0       | 0       | 0       | 0       | 0       | 0       | 0       | 0       | 0       | 0       | 0       | 882     | 882    |
| Total                       | 0       | 339     | 1,765   | 2,055   | 1,873   | 1,772   | 1,696   | 1,605   | 1,546   | 1,474   | 1,350   | 1,840   | 17,316 |
| <b>Net Operating Income</b> | 0       | 0       | 3,954   | 6,765   | 5,355   | 4,593   | 3,807   | 3,046   | 2,268   | 1,494   | 779     | -694    | 31,365 |
| <b>Use of Net Income</b>    |         |         |         |         |         |         |         |         |         |         |         |         |        |

| Operational Item              | 2019/20 | 2020/21 | 2021/22 | 2022/23 | 2023/24 | 2024/25 | 2025/26 | 2026/27 | 2027/28 | 2028/29 | 2029/30 | 2030/31 | Total  |
|-------------------------------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|--------|
| Deficit Coverage              | 0       | 0       | 694     | 0       | 0       | 0       | 0       | 0       | 0       | 0       | 0       | 0       | 694    |
| Reinvestment Reserve          | 0       | 0       | 3,260   | 6,765   | 5,355   | 4,593   | 3,807   | 3,046   | 2,268   | 1,494   | 779     | 0       | 31,365 |
| <b>Residual Cash Position</b> | 0       | 0       | 0       | 0       | 0       | 0       | 0       | 0       | 0       | 0       | 0       | 0       | 0      |

Table 7-14 Funding Statement – Ten Year Operation (Outturn Values)

| Operational Item           | 2019/20 | 2020/21 | 2021/22 | 2022/23 | 2023/24 | 2024/25 | 2025/26 | 2026/27 | 2027/28 | 2028/29 | 2029/30 | 2030/31 | Total  |
|----------------------------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|--------|
| <b>Implementation Fund</b> |         |         |         |         |         |         |         |         |         |         |         |         |        |
| Capital                    | 0       | 0       | 8,390   | 0       | 0       | 0       | 0       | 0       | 0       | 0       | 0       | 0       | 8,390  |
| Revenue                    | 0       | 339     | 678     | 0       | 0       | 0       | 0       | 0       | 0       | 0       | 0       | 0       | 1,016  |
| <b>Total</b>               | 0       | 339     | 9,068   | 0       | 0       | 0       | 0       | 0       | 0       | 0       | 0       | 0       | 9,407  |
| <b>Clean Air Fund</b>      |         |         |         |         |         |         |         |         |         |         |         |         |        |
| Capital                    | 0       | 0       | 35,878  | 0       | 0       | 0       | 0       | 0       | 0       | 0       | 0       | 0       | 35,878 |
| Revenue                    | 0       | 0       | 0       | 0       | 0       | 0       | 0       | 0       | 0       | 0       | 0       | 0       | 0      |
| <b>Total</b>               | 0       | 0       | 35,878  | 0       | 0       | 0       | 0       | 0       | 0       | 0       | 0       | 0       | 35,878 |
| <b>Total</b>               |         |         |         |         |         |         |         |         |         |         |         |         |        |
| Capital                    | 0       | 0       | 44,269  | 0       | 0       | 0       | 0       | 0       | 0       | 0       | 0       | 0       | 44,269 |
| Revenue                    | 0       | 339     | 678     | 0       | 0       | 0       | 0       | 0       | 0       | 0       | 0       | 0       | 1,016  |
| <b>Total</b>               | 0       | 339     | 44,946  | 0       | 0       | 0       | 0       | 0       | 0       | 0       | 0       | 0       | 45,285 |

Table 7-15: Cashflow Statement – Ten Year Operation (Outturn Values)

| Operational Item          | 2019/20 | 2020/21 | 2021/22 | 2022/23 | 2023/24 | 2024/25 | 2025/26 | 2026/27 | 2027/28 | 2028/29 | 2029/30 | 2030/31 | Total  |
|---------------------------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|--------|
| Capital Grant from IF/CAF | 0       | 0       | 44,269  | 0       | 0       | 0       | 0       | 0       | 0       | 0       | 0       | 0       | 44,269 |
| Operating Revenue         | 0       | 0       | 5,042   | 8,820   | 7,227   | 6,366   | 5,503   | 4,651   | 3,813   | 2,968   | 2,129   | 1,145   | 47,665 |
| Revenue Grant from IF/CAF | 0       | 339     | 678     | 0       | 0       | 0       | 0       | 0       | 0       | 0       | 0       | 0       | 1,016  |
| Capital Costs             | 0       | 0       | 44,269  | 0       | 0       | 0       | 0       | 0       | 0       | 0       | 0       | 0       | 44,269 |
| Operating Costs           | 0       | 339     | 1,765   | 2,055   | 1,873   | 1,772   | 1,696   | 1,605   | 1,546   | 1,474   | 1,350   | 958     | 16,434 |

| Operational Item | 2019/20 | 2020/21 | 2021/22 | 2022/23 | 2023/24 | 2024/25 | 2025/26 | 2026/27 | 2027/28 | 2028/29 | 2029/30 | 2030/31 | Total  |
|------------------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|--------|
| Decommissioning  | 0       | 0       | 0       | 0       | 0       | 0       | 0       | 0       | 0       | 0       | 0       | 882     | 882    |
| Net Cashflow     | 0       | 0       | 3,954   | 6,765   | 5,355   | 4,593   | 3,807   | 3,046   | 2,268   | 1,494   | 779     | -694    | 31,365 |



## 7.6 Summary and Conclusions

The financial analysis of the Clean Air Plan options demonstrates that the capital cost of implementation will amount to £44.3 million (outturn values). BCC is requesting between 19% of this funding from the Implementation Fund to support capital expenditure. BCC is requesting the residual funding from the Clean Air Fund to support capital expenditure on mitigation measures.

From an operational perspective, the financial analysis demonstrates that CAZ revenue is sufficient to cover operational costs for all Clean Air Plan options based on core scenario analysis. However, it is likely that the operational stage of the CAZ will incur costs prior to any revenue being accrued. As such, BCC are requesting upfront funding support of c. £1.0 million to cover operational staff costs and publicity and advertising costs prior to CAZ commencement and accrual of CAZ revenue. BCC recognise that in the event that the CAZ generates sufficient operational surplus in financial year 2021/22, there is scope to refund the requested Implementation Fund grant of £1.0 million to cover upfront pre-opening operational costs. This position will be determined through full reconciliation and audit at the end of the financial year.

Further, there is significant uncertainty around the timing, profile and scale of CAZ revenue generation. Sensitivity testing demonstrates that changes to profiling of the reduction in non-compliant traffic have the largest impact on the operational position of the Clean Air Plan. For example, significant acceleration in the reduction of non-compliant vehicles (e.g. because the rate of vehicle upgrading or behavioural choices towards non-car travel materialise faster than forecast) could significantly reduce CAZ income and transform any operational surplus into an operational deficit.

In summary, the total request to central government for the delivery of the Clean Air Plan can be summarised as follows:

- £44.3 million in capital grant funding, of which:
  - £8.4 million from the Implementation Fund
  - £35.9 million from the Clean Air Fund
- £1.0 million in operational funding from the Implementation Fund

The operational revenue funding request is necessary to cover upfront operational costs associated with staff costs and publicity/advertising costs, which will precede CAZ commencement (and therefore any revenue generation). That said, under the core scenario or financial modelling, both operational period scenarios can achieve a net operational surplus of between c. £1.5 million and c. £31.4 million over the appraisal period. It is intended that any surplus can be used to:

- Cover any operational deficits in later stages of the appraisal period;
- Potential repayment of £1.0 million request from Implementation Fund to support operational costs incurred prior to October 2021 switch-on (subject to sufficient surplus and full reconciliation and audit).
- Creation of a reinvestment reserve to support:
  - Any underestimation of operational costs.
  - Delivery of BCC's 'Liveable Neighbourhoods' aspirations (estimated cost range £45m to £283m);
  - Supplementary schemes to the CAF measures, as well providing an opportunity to further invest in engagement with businesses and local residents affected by the schemes. For example, this funding source would support or extend some of the following measures which may form part of the CAF bid:
- Additional financial support to businesses and residents to upgrade vehicles;
- Increase, Improve, update Legible City Signage on key radials and in city centre;
- An 'unintended consequences' fund for minor local implementations such as one-ways; and
- Support for additional buses to the Bristol Royal Infirmary.