Report to Policy Committee

Author/Lead Officer of Report: Tom Finnegan-Smith

Tel: 07787268905

Report of:	*Kate Martin*
Report to:	*Transport, Regeneration & Climate Committee*
Date of Decision:	*11th December 2023*
Subject:	*Sheffield Clean Air Plan – early-stage review findings*

Has an Equality Impact Assessment (EIA) been undertaken?	Yes	x	No	
If YES, what EIA reference number has it been given? 803, 1347, 1346				
Has appropriate consultation taken place?	Yes	x	No	
Has a Climate Impact Assessment (CIA) been undertaken?	Yes		No	x
Does the report contain confidential or exempt information?	Yes		No	x

If YES, give details as to whether the exemption applies to the full report / part of the report and/or appendices and complete below:-

*"The (**report/appendix**) is not for publication because it contains exempt information under Paragraph (**insert relevant paragraph number**) of Schedule 12A of the Local Government Act 1972 (as amended)."*

Recommendations

It is recommended that the Transport, Regeneration and Climate Committee:

- Acknowledges the significant improvement in the fleet upgrades across Sheffield in response to the CAZ to date and recognises the positive changes made by vehicle owners in the city, and that further promotion of the Financial Assistance Scheme available from the Council is undertaken.
- Endorses the guiding principles and governance principles for the use of the surplus CAZ income generated set out in section 4.2.6.
- Receives a further report that sets out the approach to defining a Clean Air Investment Plan (CAIP), with a range of potential scheme and programme options that could be funded from forecast surplus CAZ income. The potential

for other funds to complement and support delivery through the CAIP will also be considered.

- In response to the risks associated with the performance of bus retrofits requests a further update when Government publish their review on this issue, and in developing the Clean Air Investment Plan that officers should explore the potential to use CAF funding to support further upgrades to buses.
- Endorses the continued liaison with HM Government for greater support to fund a cleaner bus fleet in Sheffield to mitigate impacts of their bus retrofit programme on air quality in Sheffield, including through the ZEBRA 2 zero-emission fund.

Background Papers:

Clean Air Plan Full Business Case and supporting documents - More information about the Clean Air Zone | Sheffield City Council

WHO global air quality guidelines, September 2021
https://www.who.int/publications/i/item/9789240034228

The invisible threat: how we can protect people from air pollution and create a fairer, healthier society; British Lung Foundation and Asthma UK, February 2021
https://cdn.shopify.com/s/files/1/0221/4446/files/Invisible_Threat_FINAL_compressed.pdf?v=1612948799&_ga=2.175216866.1719479710.1633475143-418606468.1624021878

Clean Air Plan Outline Business Case – Acceptance of Further Grant Funding: Leaders Decision, 29 March 2019
https://democracy.sheffield.gov.uk/mgIssueHistoryHome.aspx?IId=27888

Air that is safe to breathe for all: Sheffield's Clean Air Zone Proposal, Cabinet report 21 November 2018,
https://democracy.sheffield.gov.uk/documents/s33102/Clean%20Air%20for%20Sheffield%20-%20Final.pdf

Sheffield City Council (2017) Clean Air Strategy,
https://democracy.sheffield.gov.uk/documents/s29124/Clean%20Air%20Strategy%20Dec%20Cabinet%202.pdf

Sheffield City Council (2018) Transport Strategy
https://democracy.sheffield.gov.uk/documents/s31437/Transport%20Strategy%202.pdf

SCC Cooperative Executive decision 26 October 2021 Decision - Sheffield and Rotherham Clean Air Plan | Sheffield City Council

Lead Officer to complete:-		
1	I have consulted the relevant departments in respect of any relevant implications indicated on the Statutory and Council Policy Checklist, and comments have been incorporated / additional forms completed / EIA completed, where required.	Finance: Jonny McQuillin
		Legal: Richard Cannon
		Equalities & Consultation: Ed Saxton
		Climate: Mark Whitworth
	Legal, financial/commercial and equalities implications must be included within the report and the name of the officer consulted must be included above.	
2	**SLB member who approved submission:**	*William Stewart*

3	**Committee Chair consulted:**	*Cllr Miskell, Cllr Andrew sangar, Cllr Christine Gilligan-Kubo, Cllr Denise Fox*
4	I confirm that all necessary approval has been obtained in respect of the implications indicated on the Statutory and Council Policy Checklist and that the report has been approved for submission to the Committee by the SLB member indicated at 2. In addition, any additional forms have been completed and signed off as required at 1.	
	Lead Officer Name: Tom Finnegan-Smith	**Job Title:** Head of Strategic Transport, Sustainability and Infrastructure
	Date: 5th December 2023	

1.0 PROPOSAL

1.1 The need to reduce air pollution to improve the health of the city

According to the World Health Organisation, in 2019, outdoor air pollution is estimated to have caused 4.2million premature deaths worldwide[1].

Air pollution, defined as a combination of nitrogen dioxide (NO_2) and particulate matter, contributes to between 28,000 to 36,000 deaths in the UK each year[2] with road transport responsible for 80 per cent of roadside NO_2 pollution alone[3]. More recent data suggests that the death toll in the UK is now rising closer to 40,000 mark each year in the UK.

Children and the elderly are particularly vulnerable to the damage caused by air pollution. For children, damage occurs across a lifetime and the effects begin as early as the baby's first weeks in the womb. We know that the heart, brain, hormone systems and immunity can all be harmed by air pollution[4]. Poor health early in life often leads to poor health later in life and affects how well a child does at school.

Poor health and higher exposure to air pollution are not equally distributed. People in poorer neighbourhoods and communities are at higher risk than others because they often live, learn or work where they are exposed to higher levels of traffic and industrial pollution. This exposure means that they can expect to die younger and live more of their lives in poor health. These vulnerabilities are heightened due to poor housing, the stress of living on a low income and limited access to healthy food and green spaces[5].

There is an urgent need to act to improve the air that people in Sheffield breathe.

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[1] Who Health Organisation: https://www.who.int/news-room/fact-sheets/detail/ambient-(outdoor)-air-quality-and-health

[2] Committee on the Medical Effects of Air Pollutants (COMEAP): Associations of long-term average concentrations of nitrogen dioxide with mortality (2018): COMEAP summary - GOV.UK (www.gov.uk)

[3] Department for Environment, Food and Rural Affairs (2017) UK plan for tackling roadside nitrogen dioxide concentrations: Air quality plan for nitrogen dioxide (NO2) in UK (2017) - GOV.UK (www.gov.uk)

[4] Royal College of Physicians & Royal College of Paediatrics and Child Health. Every breath we take: 2016: https://www.rcplondon.ac.uk/projects/outputs/every-breath-we-take-lifelong-impact-air-pollution

[5] Royal College of Physicians & Royal College of Paediatrics and Child Health. Every breath we take: 2016: https://www.rcplondon.ac.uk/projects/outputs/every-breath-we-take-lifelong-impact-air-pollution

1.2 Clean Air Plan, Clean Air Zone and legal requirements

Sheffield City Council (SCC) and Rotherham Metropolitan Borough Council (RMBC) are jointly issued with a Ministerial Direction from His Majesties Government (HMG) to implement a local Clean Air Plan to reach legal limits of 40µg/m^3 for nitrogen dioxide (NO_2) in the shortest possible time and within 2023[6]

HM Government's CAZ Framework[7] is the key Government policy guidance for the development of local Clean Air Plans. The Council was required to follow this guidance to develop the Outline and Full Business Case and supporting technical work. The Full Business Case was approved by HM Government in July 2022, this and the supporting documents can be found on the Council website.[8]

The Ministerial Direction required Sheffield City Council to implement the following to achieve compliance with the Air Quality Regulation Standards 2010, within the shortest possible time and within 2023:

- A Class C charging Clean Air Zone in central Sheffield
- Bus gate on Arundel Gate with bus anti-idling measures
- Financial Assistance Schemes for the most impacted vehicle owners

The Ministerial Direction also imposed requirements upon RMBC. These are not listed above and SCC is not considered to be responsible for the fulfilment of those requirements.

Sheffield's Class C charging Clean Air Zone (CAZ) commenced on Monday 27 February 2023. A temporary exemption for local non-compliant Hackney Carriage Taxis and local non-compliant LGVs was in place until midnight on the 4th June, charging for these vehicles commenced on the 5th June 2023. The rules for the Sheffield CAZ scheme are set out in the Charging Scheme Order (CSO) which is published on the Council website.

The Financial Assistance Schemes (FAS) were launched on the 12th December 2022, with grants and loans available to assist individuals and businesses that meet qualifying criteria to upgrade up to 3 non-compliant vehicles. A further grant scheme was launched on the 12th May 2023 for people to apply for retrospective funds if they have already replaced their vehicle in response to the CAZ.

The bus-gate scheme on Arundel Gate came into operation on the 14th March 2023, this is in advance of the permanent scheme that is proposed on Arundel Gate as part of the Connecting Sheffield City Centre scheme. No decision has been made yet in respect of that permanent scheme; the proposal will follow the statutory procedure and be subject to the Council's decision-making process in due course.

1.3 Early-stage monitoring review:

[6] Environment Act 1995 Sheffield City Council and Rotherham Metropolitan Borough Council Air Quality Direction 2022.pdf (publishing.service.gov.uk)
[7] Air quality: clean air zone framework for England - GOV.UK (www.gov.uk)
[8] More information about the Clean Air Zone | Sheffield City Council

- In our Monitoring Plan submitted with the CAP Full Business Case we included a monitoring review as a check-point ahead of the compliance assessment work that was anticipated to commence after 12 months of operation. The purpose of the review at this stage is to provide an early indication of the CAP interventions in Sheffield, in particular the level and pace of vehicle upgrades.

- It should be noted that as a result of the local exemptions to certain Hackney Carriage Taxis and LGVs the full CAZ C charging scheme did not commence until the 5th June 2023. Most of the data available within the review is for the period up to October 2023, and whilst there is limited data available at this stage the review is based on the best information available at this point.

- Due to in-year seasonal and other variations it is considered that 12 months minimum data is required to identify longer-term behaviour trends in response to the CAZ e.g. traffic volumes, number of compliant / non-compliant vehicles entering the CAZ, number people paying the CAZ charge, number of contraventions / PCNs.

- The Council collects data on average Nitrogen Dioxide (NO_2) concentrations over a 12 month period (Jan - Dec) in accordance with its statutory duties. Processed and HM Government ratified annual average data won't be available until Summer 2024. This explained fully in section 2.2.5 of the report.

- As noted above, at this stage the most tangible indicator of the impact of the CAZ is the relative improvement in vehicle emissions by vehicle type. In order to assess this surveys have been undertaken of the vehicle fleet in October 2023 which are compared to a baseline survey undertaken in November 2022.

2.0 CAP EARLY-STAGE REVIEW – OVERVIEW AND SUMMARY OF FINDINGS

2.1 Scope and limitations:

This review aims to provide an update and indicative view on how the Clean Air Plan (CAP) interventions in Sheffield including the Clean Air Zone (CAZ) have performed during the early months of operation.

It focuses on the CAP interventions implemented in Sheffield to improve air quality and achieve legal nitrogen dioxide limits in the shortest possible time, as such the report does not look at operational aspects of the CAZ.

It looks at discernible impacts on vehicle upgrade and compliance levels, traffic volumes and traffic flow / behaviour.

The review does not attempt to establish whether compliance with the Government's Ministerial direction has been met, it is too early to do this as a minimum of 12 months data across the calendar year 2023 is required to initiate this process.

His Majesties Governments (HMG) Joint Air Quality Unit (JAQU) are responsible for assessing each CAP scheme to determine whether compliance (termed 'success') has been achieved. Local Authorities are required to provide air quality and traffic monitoring data to JAQU for this purpose. Compliance assessment is based on

annual average (Jan – Dec) air quality data, this data takes time to process and analyse, it is usually submitted to and ratified by HM Government in April / May of the following year.

The Covid-19 pandemic had an unprecedented impact on travel behaviour in 2020 and 2021, this is reflected in traffic volume, flow and annual average air quality data for those years. For this reason, these years are excluded when looking at historic data trends for comparison against current / recent observed data.

The potential impacts of the Covid-19 pandemic were reviewed by the Council in Summer / early Autumn 2020 and information shared with HM Governments Joint Air Quality Unit (JAQU). Following a review by JAQU, and their independent technical advisors, they confirmed that no Covid-19 impact assumptions could be included within the central technical assessment of the scheme for inclusion within the Full Business Case, which was subsequently submitted to and approved by Government.

The main indicator at this stage in the review of the Clean Air Plan measures is the relative improvement in vehicle emissions by vehicle type observed in October 2023 when compared to the baseline survey undertaken in November 2022. This provides an indication of how quickly the fleet in Sheffield is upgrading to newer, cleaner vehicles.

Nitrogen dioxide (NO_2) is predominantly generated by the combustion of fossil fuels, and in urban areas the greatest single source of this air pollutant is road traffic. Therefore, an accelerated reduction in the number the most polluting vehicles is expected to reduce the level of nitrogen dioxide in the shortest possible time. Based on technical studies CAP interventions and in particular the Clean Air Zone were determined by the Council as the most effective option to accelerating the upgrade of older more polluting vehicles to cleaner ones. The Outline and Full Business Case and technical supporting documents were assessed and approved by HM Government.

This review looks at:

- Vehicle compliance levels – improvement observed in vehicle emission standards
- Traffic volumes and traffic flow / behaviour
- Air quality monitoring requirements and HM Government's compliance assessment process

The information collated through the review will inform:

- Whether observed vehicle compliance levels are improving and at what rate.
- Whether traffic behaviour and volumes are in line with national and local trends.
- Revised forecasts in the CAP financial model - the fleet compliance / non-compliance levels (Feb 2019) were used to underpin the FBC financial plan income forecasts.
- Principles on how the surplus income generated by the Clean Air Zone should be managed.
- Further development and / or targeting of financial assistance to support further vehicle upgrades.

2.2 Review of vehicle compliance levels – improvement in vehicle emission standards

2.2.1 How we are monitoring vehicle compliance

Metrics used:

- Specific Automatic Number Plate Recognition (ANPR) surveys undertaken specifically for monitoring purposes
- SCC licensed taxi fleet vehicle compliance levels
- Financial assistance scheme uptake statistics

The aim of the Clean Air Zone is to accelerate the replacement rate of older, non-compliant vehicles to reduce nitrogen dioxide emissions within the shortest time. At this stage, the level and rate of improvement in the proportion of compliant vehicles is the primary indicator of the impact of the CAZ to date.

Automatic Number Plate Recognition (ANPR) surveys are undertaken specifically for monitoring the composition of vehicle fleets. Vehicles are captured at locations within and outside the CAZ area over a consecutive seven-day period. These surveys have been undertaken at key stages (see below) and timed to avoid periods of where there are usually lower traffic volumes, such as summer holidays, university / school breaks, so that normal fleet movement and composition is reflected.

JAQU process the data gathered against the DVLA registered data base to provide emissions standards of the observed fleet by vehicle type. The ANPR surveys are not concerned with traffic volumes, but rather are designed to assess the changes in vehicle fleet. JAQU / DVLA have encountered issues in relation to the uploading and accessing of CVRAS accredited retrofitted vehicles on the DVLA database, which means this information is not included in the fleet monitoring survey that JAQU processed for us in early October. JAQU and DVLA are investigating the issue. This issue means that the fleet is likely to be cleaner in practice than the observed data indicates, and as reported within the review.

A number of scenarios for monitoring purposes are referred to in the analysis, in summary these are:

- **Modelled ‘do Minimum’ 2022 and 2023 (without a CAZ)**

  Do Minimum is the term used when referring to a scenario without the Clean Air Zone or other CAP interventions e.g. financial assistance schemes and the temporary bus gate on Arundel Gate. The do minimum scenarios will include any relevant changes introduced during the period such as new road layouts, completed planned developments and bus retrofit upgrades funded by HM Governments Clean Bus Technology Fund. It should be noted that these modelled scenarios are based on assumptions agreed with JAQU through the business case process.

- **Observed November 2022 (before CAZ go-live)**

  A monitoring ANPR survey was carried out in late November 2022 over 7 consecutive days at locations inside and outside the CAZ area to observe the fleet composition and vehicle emission standards before CAZ charging commenced on the 27th February 2023.

- **Observed October 2023 (post CAZ go-live)**

  A monitoring ANPR survey was undertaken late September / early October 2023 over 7 consecutive days at locations inside and outside the CAZ area to observe the fleet composition and vehicle emissions standards. This survey was timed to allow sufficient time for noticeable vehicle upgrade / replacement to have taken place post launch of the Financial Assistance Schemes (FAS) on the 12th December 2022, CAZ charging commencing on the on the 27th February 2023 and the end of the local LGV and Hackney Carriage exemption on the 4th June.

2.2.2 Vehicle compliance improvement supported by financial assistance schemes

The CAZ financial assistance schemes were launched on the 12th December 2022, making funds available to help people upgrade or replace an existing non-compliant vehicle to become compliant with the CAZ standards.

As of mid-November 2023, a total of 946 applications have received financial assistance to upgrade or replace a vehicle, see the breakdown by vehicle type below. This figure does not include applicants who have a 'live' grant application, or those who have had financial assistance approved and are either in the process of ordering a vehicle or have a vehicle on order and are awaiting delivery.

Vehicle types and numbers support to upgrade / replace with financial assistance to date:

- 444 Light Goods Vehicles
- 35 Heavy Goods Vehicles
- 5 Coaches
- 178 Private Hire Vehicle taxis
- 283 Hackney carriage taxis
- 1 Bus – note that c.100 buses are awaiting financial support to upgrade due to HM Governments national pause of bus retrofit funds

<u>Summary of findings – vehicle compliance</u>

Table 1 below shows the reduction in non-compliant vehicles by type observed inside and outside the charging zone between November 2022 and early October 2023.

The monitoring data to date shows the number of non-compliant vehicles has reduced significantly since the introduction of the CAZ.

The CAZ scheme with other CAP interventions is doing better than the 'Do Minimum' scenario i.e. without CAP / CAZ Scheme and the reduction in the proportion of non-compliant vehicles observed to date is greater than expected at this point, ahead of a full year of CAZ operations.

To date there has been a reduction of **64%** in the proportion of non-compliant vehicles in the CAZ area. There has also been a **18%** reduction in the non-compliant proportion of vehicles across the wider CAP area.

Table 1 - Proportion of non-compliant fleet by vehicle type

Non-Compliant (Observed)	*Nov 2022*	*Oct 2023*	*% Reduction in Proportion of Non-Compliant Vehicles*
Light Goods Vehicles			
Inside Charging Zone	41%	16%	62%
Outside Charging Zone	43%	37%	14%
Private Hire Vehicles			
Inside Charging Zone	23%	4%	81%
Outside Charging Zone	28%	12%	57%
Licenced	25%	6%	76%
Hackney Cabs			
Licenced	85%	37%	56%
Articulated HGV			
Inside Charging Zone	4%	1%	72%
Outside Charging Zone	8%	5%	38%
Rigid HGV			
Inside Charging Zone	22%	8%	63%
Outside Charging Zone	24%	19%	19%
Buses and Coaches			
Inside Charging Zone	24%	12%	52%
Outside Charging Zone	47%	36%	23%
Total (Chargeable Vehicles)			
Inside Charging Zone	**37%**	**13%**	**64%**
Outside Charging Zone	**39%**	**32%**	**18%**

The following is a summary of the reduction in non-compliance levels by chargeable vehicle types observed between November 2022 and October 2023:

- LGV fleet non-compliance levels have **reduced by 62%** in the CAZ area and 14% across the wider CAP area
- PHV (all observed not just SCC licensed taxis) fleet non-compliance levels have **reduced by 81%** in the CAZ area and 57% across the wider CAP area. The licensed fleet has reduced the non-compliant fleet by 76% and overall SCC licensed PHVs are 94% compliant
- Hackney Cabs (based on SCC licensed taxis) fleet non-compliance levels have **reduced by 56%**

- Articulated HGV fleet non-compliance levels have **reduced by 72%** in the CAZ area and 38% across the wider CAP area, and are now 99% compliant inside the CAZ
- Rigid HGV fleet non-compliance levels have **reduced by 63%** in the CAZ area and 19% across the wider CAP area.
- Coach and bus (combined in the ANPR data) fleet non-compliance levels have **reduced by 52%** in the CAZ area and 23% across the wider CAP area.

2.2.5 Review of traffic volumes and travel behaviour patterns

As part of the early stage review we have looked at a range of national and local traffic flow and volume data both to determine and evaluate the longer term trends and any potential effects of the Clean Air Zone. This is included at Appendix 1 of the report.

The following presents a summary of our findings:

- Traffic volumes reduced significantly during the COVID 19 pandemic, and travel behaviour changed. Post the pandemic, changes in traffic flow and travel behaviour patterns are still being observed and these may become longer term changes in response to hybrid working / working from home, reduced bus patronage and increased home delivery options.

- Nationally between June 2022 and July 2023 overall road traffic volumes have increased and are close to pre-covid usage levels, recovery across public transport is slower.

- Nationally LGV usage has increased by 4.5% nationally and car usage has increased 3.2% nationally, this could be a reflection of increased home deliveries combined with the reduction in bus and train patronage and other post-COVID travel behaviour changes.

- The levels of non-compliant vehicles entering the CAZ that are liable to pay the daily charge has been reducing month on month. Most recent data from October indicates that this is 1.11% of traffic entering the CAZ – the lowest proportion of the fleet since the scheme went live.

- There is a significant reduction in northbound traffic using Arundel Gate post implementation of the bus-gate. Between April to September a 42% reduction in traffic has been observed in 2023 as compared to the same period in 2022. This will contribute towards reduced NO_2 emissions on Arundel Gate.

- The number of vehicles that are driving through the bus gate without authorisation has been reducing from July 2024 where unauthorised trips were c.14% of total traffic. Most recent data indicates that unauthorised vehicle trips are making up c.5% of trips. We will continue to review the traffic volumes and level of abuse of the bus gate as part of the review of the ETRO for this aspect of the Clean Air Plan.

- At this early stage the traffic data indicates that there have been no significant changes in observed traffic volumes as a result of the CAZ.

- We will continue to monitor traffic flows across the city. It is planned that traffic and fleet data associated with the CAP early-stage review will be published on the Councils website.

2.2.5 Air quality monitoring and HM Government's compliance assessment requirements

Process and timescale for HM Governments assessment of air quality compliance

Under the UK Air Quality Regulations (2010) compliance for Clean Air Plans (CAP) is determined by annual average nitrogen dioxide concentrations at valid monitoring locations in accordance with The Air Quality Standards Regulations 2010 (legislation.gov.uk). The primary success factor is to achieve legal nitrogen dioxide to within legal limits within the 'shortest possible time'. Sheffield is currently under a Ministerial Direction to achieve legal compliance within 2023.

The Joint Air Quality Unit (JAQU) is the HM Government Department that is responsible for evaluating and assessing local Clean Air Plans to determine whether compliance has been achieved. JAQU define this as achieving 'success' i.e. the CAP interventions are having the desired effect and future nitrogen dioxide levels will not exceed the annual average legal limit.

There are four stop / go stages to JAQUs process for determining if a Local Authority is achieving success.

- **State 1** – on track to achieve success. Initiated ahead of 12 months of operations.
- **State 2** – has achieved success. Initiated post 12 months of operation and a successful State 1 assessment.
- **State 3** – demonstrate maintaining success with measures in place e.g. CAZ
- **State 4** – demonstrate likely to continue maintaining success in the absence of measures e.g. CAZ

Compliance assessment will commence once HM Government confirms that a Local Authority has successfully passed a State 1 assessment. State 2 compliance assessment will be based on a minimum of one calendar year of air quality data, Local Authorities provide air quality and traffic monitoring data to JAQU for this purpose. As described above, it takes time to process annual average data, diffusion tubes must be analysed in a laboratory and data needs to have technical adjustments applied before submitting for checks and ratification by HM Government. Ratified data is usually available in early summer of the following year.

Reason why air quality impacts cannot be assessed at this stage

UK legislation dictates that air quality concentrations are based on annual average data across a full 12 month period within a calendar year. This is because air quality levels vary greatly day-day due to external factors such as weather and seasonal travel patterns. Assessing data over a longer period provides a more accurate picture. Data for that 12 month period is then processed between January – April of the following year and that is submitted to Defra for ratification.

Air Quality and specifically nitrogen dioxide levels vary dependant on traffic volumes and travel patterns. Traffic volumes in Sheffield vary greatly dependant on seasonal factors and school / university term times.

Traffic volumes reduced significantly during the COVID 19 pandemic, therefore air quality data from years 2020 and 2021 is not comparable and can't be used for baseline monitoring meaning that there is not a recent data set that can be used to look at comparable trends over time.

We are required to follow the Government defined state assessment process to determine the success of the nitrogen dioxide air quality improvement in Sheffield.

3.0 CONSULTATION

Public consultation was undertaken at key stages between 2019 and 2022. Engagement with key stakeholders has been ongoing since 2019, including during the pandemic.

In 2019 Sheffield City Council ran an eight-week long online consultation from August 2019. These consultation reports are on the website.

Further statutory consultation was undertaken to inform the final proposals for inclusion within the Full Business Case. This consultation ran from 22nd November 2021 until 17th December 2021, the primary purposes were to:

- Provide detail of the final proposals of the S&R Clean Air Plan
- Consult (statutory requirement) on the final proposals for the Sheffield CAZ scheme
- Provide detail of the proposed exemptions and seek stake holder views
- Provide detail of the financial support measures, and seek stakeholder views

Feedback from consultation and stakeholder engagement activities has shaped the implemented scheme, in particular informing local exemptions and the financial assistance schemes. The consultation reports can be found on the website More information about the Clean Air Zone | Sheffield City Council

4.0 RISK ANALYSIS AND IMPLICATIONS OF THE DECISION

4.1 Equalities impacts

The introduction of the CAZ and connected schemes is supportive of the council's obligations to tackle inequalities, principally in helping to reduce health inequalities (a key cause and symptom of wider inequalities) associated with poor air quality and the promotion of Active Travel and Public Transport. It is also noted that financial assistance is available to alleviate the costs of vehicle upgrades.

Equality Impact Assessments have been undertaken to consider the implications of the CAZ for people and communities and these will need to be reviewed and updated to inform the fuller assessment of the CAZ as set out in this report.

4.2 Finance and commercial - current position, operational and fixed costs, CAZ income and forecasting potential surplus.

4.2.1 Income

We have seen significant volatility in income related to the CAZ, for a number of reasons:

- There was an initial four-week soft enforcement period when people who received a PCN only had to pay the CAZ charge value.
- Extended exemption for local LGVs and Hackney Carriages. A large proportion of non-compliant vehicles were therefore not chargeable until 5th June 2023.
- Processing issues with PCN's and the variability of the timing of payment of these creates spikes from month to month. The table below shows contraventions (note, not all contraventions will result in PCN enforcement) per month and shows that volumes are beginning to decline.

CAZ contraventions from Feb - Nov 2023

Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov
612	10998	14339	14068	14194	14066	11462	9492	9078	7162

- Seasonal travel factors for example summer holidays and University summer break.
- The fleet make up changes over time as the total number of non-compliant vehicles decrease, as these vehicles are replaced/upgraded.

4.2.2 Costs

The zone is operated by a team of council staff providing a range of functions to support the zone. The budgets for these are regularly monitored to ensure financial probity and to limit any impact on wider Council Revenue Budgets.

In addition are non-staff costs, these include (but not limited to):

- Postage, printing and distribution of documents related to the zone, including PCNs.
- Equipment and IT
- Charges from our payment supplier
- A £2 per journey charge from DVLA/JAQU
- Appeals and Collection Costs

4.2.3 Decommissioning and other Provisions

As well as the ongoing costs of the zone, we are aware that there will be significant costs to maintain, assess and ultimately decommission the zone when the requirement for the CAZ has ceased.

This is accounted for by placing a monthly provision for these total costs against the account on a straight line basis.

However, in line with our recommendation for a Financial Prudence approach (as per below), the total value of these expected future costs is recorded upfront, in order that the final Surplus figure is an accurate value available to support other Clean Air projects.

4.2.4 Income – Expenditure to date (31/10/2023)

The table below shows these three different values, up until the end of October from the start of the Scheme.

	Total Feb to October 23
Fee Income	-£1,520,799
PCN Income	-£3,135,129
Staff Costs	£657,384
Non-Staff Costs	£405,839
Provision for Future Costs (e.g. Decommissioning)	£5,029,807
Deficit to Date	£1,437,102

4.2.5 Forecasting

Using our information to date, we have revised our forecasts from the original FBC.

	22/23 (1M)	23/24	24/25	25/26	27/28	28/29 (11M)
Fee Income	-£155,998	-£2,217,582	-£1,943,235	-£1,722,454	-£1,526,758	-£1,353,295
PCN Income	£0	-£5,878,764	-£4,788,017	-£3,757,237	-£2,948,367	-£2,313,633
Staff Costs	£46,568	£1,147,675	£1,860,666	£1,909,430	£1,961,607	£2,017,436
Non Staff Costs	£56,903	£1,435,315	£1,627,055	£1,659,596	£1,692,788	£1,726,644
Provision for Future Costs (eg Decommissioning)	£5,029,807	£0	£0	£0	£0	£0
Surplus/Deficit	£4,977,280	-£5,513,356	-£3,243,531	-£1,910,666	-£820,730	£77,152
Net Surplus Deficit	£4,977,280	-£536,076	-£3,779,607	-£5,690,273	-£6,511,003	-£6,433,851

This is modelled on a 1% decrease in Fee income and a 2% decrease in PCN income per month as fleet becomes cleaner and therefore compliant over time.

We are therefore forecasting that by the end of 23/24 there will be a £536K Surplus after taking into account future decommissioning provisions. There is still inherent uncertainty around this, owing to income volatility and the position to date is still in deficit.

4.2.6 The approach to using surplus CAZ income generated.

The ability for charging authorities to introduce a Clean Air Zone is set out in the Transport Act 2000. Part III of the Act empowers local authorities (as “charging authorities”) to make a local charging scheme in respect of the use or keeping of motor vehicles on roads.

After the costs of operation have been met, the Transport Act 2000 requires that any surplus revenue that may arise from charges is 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, while ensuring this does not displace existing funding.

In considering the approach to the use of the surplus generated from the operation of the Clean Air Zone a series of guiding principles have been established alongside governance principles to ensure appropriate scrutiny and oversight of decisions on the funding, in line with the requirements of the Act. These are recommended for endorsement.

Guiding principles:

a) ***Financial Prudence:*** The primary objective is to ensure that any surplus income generated is sufficient to cover all committed costs associated with operating the Clean Air Zone. This includes ongoing maintenance, enforcement, and administrative expenses. Contractual operating costs running to the end of the contract term must be accounted for before any funds are committed. This will minimise any risks of costs associated with the operation of the scheme impacting on the Councils budget position.

b) ***Stability First:*** Until a stable financial position is achieved for the Clean Air Zone, only investments that maintain the financial sustainability of the scheme will be prioritised. Projects should align with this goal and not place undue financial strain on the Council.

c) ***Strategic Alignment:*** Investments must align with the broader objectives of Sheffield's Transport Strategy 2019-2035 and the Sheffield City Region Transport Strategy while also considering the financial feasibility and sustainability of these initiatives.

d) ***Emissions Reduction****:* Continue to support projects aimed at reducing emissions and improving air quality within the city. This includes investments in cleaner transportation options and sustainable infrastructure. Investing in further mitigation may be required at locations where compliance may not be achieved or be ‘at risk’.

e) ***Active Travel and Public Transport:*** Funds should be used to promote active travel and public transport usage but ensure that such investments are financially viable and contribute to the stability of the Clean Air Zone.

f) ***Zero Emission Infrastructure****:* Supporting investments in zero-emission transport infrastructure to promote long-term sustainability.

Governance Principles:

a) ***Council Oversight and Accountability:*** The Transport, Regeneration, and Climate committee will take responsibility for overseeing fund allocation and project development by setting the overall policy. Financial prudence must remain a central focus of the committee's work and all proposals must be supported by the Director of Finance. Expenditure for CAP operational costs will be approved by the Director of Investment Climate Change and Planning in their role as the CAP Executive Officer.

b) ***Project Development Process:*** A structured process for project development will be established to determine how surplus CAZ income is spent. This will start with a report to a future TRC Committee meeting that sets out the approach to defining a Clean Air Investment Plan (CAIP), with a range of potential scheme and programme options. The potential for other funds to complement and support delivery through the CAIP will also be considered. Engagement with the public should be undertaken to ensure that residents and businesses are informed about proposed initiatives.

c) ***Regular Financial Reporting****:* Regular financial reporting should be integrated into the committee's workplan to ensure that financial updates are provided to the committee and the public to maintain transparency and accountability. This will have a direct bearing on the potential scope of the Clean Air Investment Plan.

d) ***Compliance and Risk Management****:* All legal and regulatory requirements must be adhered to alongside a strong focus on risk management to identify and mitigate potential financial risks associated with investment projects.

By adhering to these investment and governance principles, the Council can prioritise financial stability and prudent management while working towards the objectives of the Clean Air Zone and Sheffield's broader transport strategies.

4.2.7 Financial Assistance Schemes

Sheffield and Rotherham have received £20.4m from the Government's Clean Air Fund to provide financial assistance to individuals and businesses that own non-compliant vehciles (those chargeable vehicles that are older than Euro 6 Diesel and Euro 4 Petrol).

The Financial Assistance Schemes (FAS) were launched on the 12th December 2022, with grants and loans available to assist individuals and businesses to upgrade up to 3 non-compliant vehicles. A further grant scheme was launched on the 12th May 2023 for people to apply for retrospective funds if they had already replaced their vehicle in response to the CAZ.

The objective of the Financial Assistance Schemes is to support people to upgrade and therefore avoid the impact of the CAZ daily charges. All of the Financial Assistance Schemes have qualifying criteria that applicants must meet to be eligible for support.

Number of vehicles replaced / upgraded with financial support	
Vehicle type	**Number (as of 24th Nov 2023)**
Light Goods Vehicles	444
Heavy Goods Vehicles	35
Coaches	5
Private Hire Vehicle taxis	178

Hackney carriage taxis	283
Bus*	1

**NB: Note HM Government have paused bus retrofits nationally, circa. 100 buses in sheffield are awaiting retrofit upgrade.*

Committed spend is currently estimated at just over £3m but actual spend as at 13th October 2023 was £2.1m. Using actual expenditure as the basis for forecasting it suggests that £13m to £15m of the CAF will be required to meet current demand. Further forecasts will become more refined as more grants are paid.

The Financial Assistance Scheme remains open and applications can be made via the Council website[9]. It is recommended that further promotion of the scheme to people that have not yet considered upgrading their vehicles be undertaken.

As part of the development of the Clean Air Investment Plan the further use of the Financial Assistance Scheme will be considered. However it is not expected that any significant changes to the principles of the scheme and grant values will be made particularly given that they would likley be challenged by those who have already benefitted from support or acted without support at the time. Significant changes to the scheme would also come under significant scrutiny from JAQU who expect the Financial Assitance schemes to be broadly similar across all CAZ areas given that they have set the limit on individual grant support that we can provide.

HM Government hold a 'Stretch' fund allocation for our Clean Air Fund allocation of £7.9m that the Council can apply to draw down where it can be evidenced that financial support uptake exceeds the available budget parameters. As detailed below, the Department for Transport has paused the rollout of bus retrofits due to under-performance concerns and it is expected that an alternative bus replacement / upgrade solution will be required. It is expected that CAF funding, including the retained 'stretch' funding, will be required to support the associated additional costs of delivering improved emissions from buses, especially if this involves replacement rather than retrofitting of fleet, particularly if this involves changes to existing fleet that has been subject to retrofitting.

4.2.8 HM Government's pause of the bus retrofit programme:

In summer 2023 the Department for Transport (DfT) announced to affected Local Authorities that following a review they had identified that bus retrofit technology was not performing consistently and was not always achieving the certified equivalent Euro 6 emissions standard. A full study has been commissioned by DfT into this issue which was due to conclude in Autumn 2023. In the meantime, DfT have paused all grant funding for bus retrofits including those allocated to support Clean Air Plans.

Since 2018, Sheffield City Council working in partnership with bus operators has been successful in retrofitting approximately 300 buses with technology to reduce bus emissions as part of the Department for Transport's (DfT) Clean Bus Technology Fund programme.

Around a further 100 local buses are waiting to be upgraded as part of the CAZ financial Assistance Scheme (FAS). Our Clean Air Funding (CAF) allocation from

[9] https://www.sheffield.gov.uk/your-city-council/apply-for-financial-support-upgrade-replace-polluting-vehicle

Government provided sufficient funding for further retrofit devices to be installed in the remaining non-compliant fleet.

The funding provided to undertake retrofitting was £16k per bus, which was sufficient to fund the majority of the costs of retrofit but with Bus Operator commitment to fund residual retrofit costs and ongoing maintenance. Whilst SCC were open to Bus Operators using the £16k against the costs of a new Euro VI bus given the much higher costs of compliant replacement vehicles, the majority indicated their willingness to retrofit existing fleet.

A number of our air quality hotspots in Sheffield are influenced heavily by bus emissions. The impact on air quality of the delay in bus upgrades and potential under-performance of the technology will not be clear until later in 2024 when 12 months of air quality data is available for analysis. However, at this stage with c.75% of our bus fleet potentially not performing at required Euro VI standards and c.25% of our fleet with no change it is expected that this will pose a significant risk to achieving compliance at all locations in Sheffield.

Executive Officers within the Council are in regular discussion with Senior Officers within the Joint Air Quality Unit to make the case for enhanced support to accelerate the transition to cleaner buses across the Sheffield area to achieve the step-change impact required. This includes a bid that SYMCA will be submitting to the zero-emission bus fund ZEBRA 2, the deadline for which is the 15th December 2023.

The Department of Transport have paused their national programme of bus-retrofit funding whilst they research performance issues. In respect to this issue, the Council Leader met with DEFRA Minister Trudy Harrison to press the need for greater Government support for electric bus fleet transition in Sheffield to enable the city to meet its air quality requirements within the shortest possible time.

It is recommended that officers should explore further flexibilities in how we can use the Clean Air Fund with JAQU and DfT, including the potential use of the c.£7.9m CAF stretch fund, to support upgrades to buses.

4.3 Legal Implications

Under Part IV of the Environment Act 1995 (“the 1995 Act”), the Council is required to have regard to any national strategy on clean air which is published by the Secretary of State, to review and assess air quality in their areas. and to report against objectives for specified pollutants of concern to the Secretary of State. The Council undertakes these duties in accordance with the requirements of the Local Air Quality Management framework.

In addition to this, the Secretary of State, in exercise of the power conferred by section 85(5) of the 1995 Act, directed the Council to:

- take steps to implement the local plan for NO2 compliance for the areas for which they are responsible.

ensure that the local plan for NO2 compliance is implemented so that—

(a) compliance with the legal limit value for nitrogen dioxide is achieved in the shortest possible time, and by 2023 at the latest;

(b) exposure to levels above the legal limit for nitrogen dioxide are reduced in the shortest possible time.

The Secretary of State made the direction having determined that it was necessary to meet obligations placed upon the UK under EU Ambient Air Quality Directive 2008/50/EC. These obligations continue to have effect, including the legal limit value for nitrogen dioxide which must be monitored by the Secretary of State according to the requirements of the Air Quality Standards Regulations 2010.

The Council is under a duty to comply with the direction per section 85(7) of the 1995 Act. Failure to comply may result in the Council being subject to an environmental review initiated by the Government's Office for Environmental Protection or judicial review by any individual or organisation with sufficient standing to bring a claim.

The Clean Air Zone is a charging scheme as defined by the Transport Act 2000 ("the 2000 Act"), that charging scheme being brought into operation via the Sheffield Clean Air Zone Charging Order 2003. The Council made this order on 2nd February 2023 and it came into operation on 27th February 2023. Schedule 12 to the 2000 Act defines income as "*the amounts received under or in connection with the scheme*". It includes the charges imposed by the charging scheme (the 'Clean Air Zone charge' for using a non-compliant and non-exempt vehicle on a road in the Clean Air Zone) but also the income associated with enforcement (penalty charges for non-payment of the Clean Air Zone charge).

Schedule 12 of the 2000 Act, in conjunction with the Road User Charging and Workplace Parking Levy (Net Proceeds) (England) Regulations 2003, imposes requirements upon the Council in respect of its accounting practices for the income received. An account must be kept for each financial year, documenting the income/expenditure and published as part of the Council's annual accounts (para 6). If the account is in deficit, it is to be balanced by the authority from their general fund (para 7) and, where there is a surplus, it must be spent on "facilitating the achievement of local transport policies" (para 8) – anything not spent must be carried forward to the next year. The Council complies with these requirements.

Paragraph 10 imposes a further requirement that five and ten year plans for the use of the "net proceeds" must be included in the charging scheme. Net proceeds are defined as the surplus income remaining once the expenses of the scheme are met. The proposals detailed in this report are considered to align with the five and ten year plans included within the Clean Air Zone charging scheme and as set out in Annex 5 of the Sheffield Clean Air Zone Charging Order 2003.

4.4 Climate Implications

The legal Direction is specific to reducing nitrogen dioxide – not other air pollutants such as fine dust particulate matter (PM_{10} and $PM_{2.5}$) and carbon dioxide. The CAZ has previously been assessed as having a relatively neutral impact on carbon emissions but actions within the CAP compliment measures such as the decarbonisation of motorised vehicles, and sits alongside our wider investment to encourage an increase in active travel and public transport which are needed to deliver overall net zero targets.

5.0 RECOMMENDATIONS

It is recommended that the Transport, Regeneration and Climate Committee:

- Acknowledges the significant improvement in the fleet upgrades across Sheffield in response to the CAZ to date and recognises the positive changes made by

vehicle owners in the city, and that further promotion of the Financial Assistance Scheme available from the Council is undertaken.

- Endorses the guiding principles and governance principles for the use of the surplus CAZ income generated set out in section 4.2.6.
- Receives a further report that sets out the approach to defining a Clean Air Investment Plan (CAIP), with a range of potential scheme and programme options that could be funded from forecast surplus CAZ income. The potential for other funds to complement and support delivery through the CAIP will also be considered.
- In response to the risks associated with the performance of bus retrofits requests a further update when Government publish their review on this issue, and in developing the Clean Air Investment Plan that officers should explore the potential to use CAF funding to support further upgrades to buses.
- Endorses the continued liaison with HM Government for greater support to fund a cleaner bus fleet in Sheffield to mitigate impacts of their bus retrofit programme on air quality in Sheffield, including through the ZEBRA 2 zero-emission fund.

APPENDIX 1

Review of traffic volumes and travel behaviour patterns

How traffic is monitored

In Sheffield we have approximately 300 **Automated Traffic Counters (ATCs)** on roads across the city for the purpose of monitoring traffic volumes and flow, these ATCs do not identify vehicles by type only volume. A selection of these ATCs have been identified to aid in determining baseline traffic levels (pre-CAZ) across the city. The network of Council ATCs has increased incrementally over time, therefore comparing historic trends at a local level is often not possible.

The transport modelling undertaken as part of the CAP Full Business Case (FBC) indicated that some, minimal traffic displacement could occur where vehicles look to avoid the CAZ area, the FBC documents can be found on the Councils website[10]. Therefore, nine new automatic traffic sensors were installed in January 2023 to monitor traffic volumes at these locations around the periphery of the CAZ area. Data from these sensors is being used to monitor traffic levels throughout 2023. However, given that the sensors only provide a limited amount of data before the CAZ went live and they do not provide a year on year trend, it is difficult for comparisons to be made.

Anonymised data from the network of CAZ cameras provides greater detail about the number of individual vehicles by vehicle type traveling within the CAZ area. Analysis of this data is summarised in this section of the review report. Given that these cameras were collecting data following their commissioning in October 2022 we are able to now compare this with October 2023 data from these cameras.

Influences on traffic volumes and travel behaviour

General Traffic:

As highlighted above, the Covid-19 pandemic has had a significant impact on traffic volumes in recent years and is continuing to have an effect not just in terms of overall number and frequency of motor vehicle trips on our roads but also influencing the way in which people choose to travel. At present the level of car trips is heading back to pre-covid levels on most routes but the level of bus patronage is still significantly below pre-covid levels.

However, in any year other factors can significantly influence traffic volumes / cause changes in traffic behaviour, for example:

- Reduced bus frequency / routes - increase in traffic
- Road / highway works – congestion / re-routing
- Holiday periods particularly school and university shut-down periods
- Weather e.g. people more likely to drive if it's raining.
- Rail, NHS and teacher strikes in 2022 and 2023 will have impacted traffic volumes and travel behaviour[11]

[10] https://www.sheffield.gov.uk/pollution-nuisance/more-information-about-clean-air-zone

[11] The impact of strikes in the UK - Office for National Statistics (ons.gov.uk)

Clean Air Zone traffic:

Most vehicles on the local road network are compliant or not a chargeable vehicle types for a Class C CAZ e.g. private passenger cars. Only non-compliant, chargeable vehicles that need to pay the CAZ charge would have cause to re-route to avoid the zone.

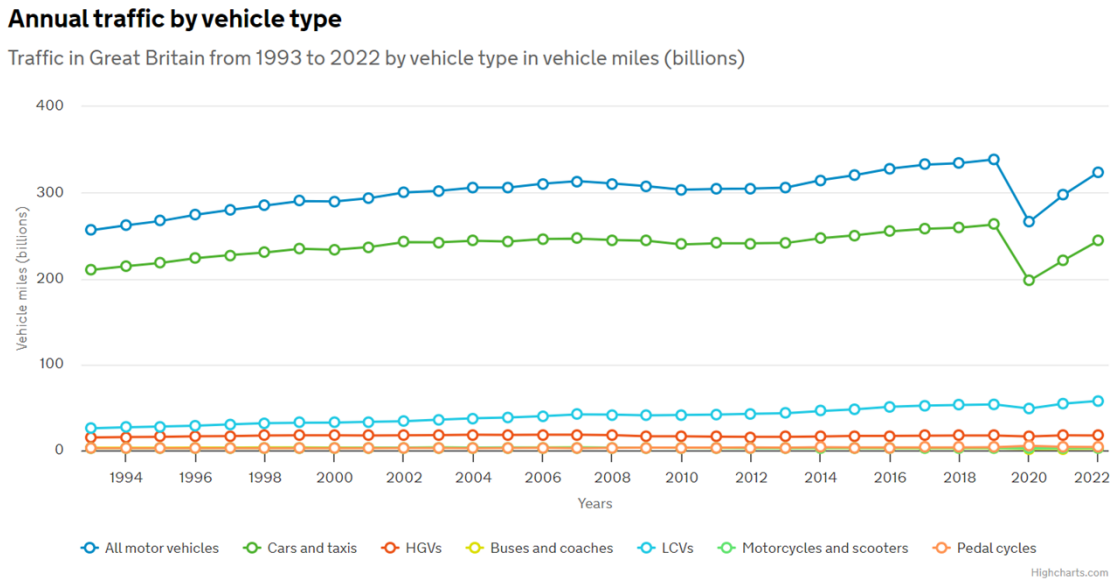
In many cases it will not be practical to re-route traffic e.g. buses (on fixed routes), taxis and many goods vehicles that have a destination in the city centre area (or at least a destination in the City Centre at some point within their daily operation), so even if a single trip within a day could avoid the CAZ it would not be worth doing so.

In addition, Heavy Goods Vehicles (HGVs) are generally unlikely to reroute as they will also have a destination in the City and / or will be restricted by limitations on some of the possible alternative routes available. The vehicles with the most potential to reroute are non-compliant Light Goods Vehicles (LGVs) undertaking trips that do not need to access Sheffield City Centre at any point within a day and where drivers consider that the disbenefit of rerouting, potentially to a less direct route, is more favourable than paying the daily fee.

National annual average traffic – summary

It is important to consider traffic volumes within the context of average national and local trends. The Department for Transport (DfT) publish data on national and local traffic volumes.

Provisional figures from HMG published in September 2023 indicate that nationally, overall traffic levels between July 2022 and June 2023 were higher than in year ending June 2022 and below pre-pandemic levels. Cars accounted for 75% of all motor vehicle traffic on Great Britain's roads up to the end of June 2023. The proportion of van traffic has increased in recent years, accounting for 18% of all motor vehicle traffic in this 12 month period[12].



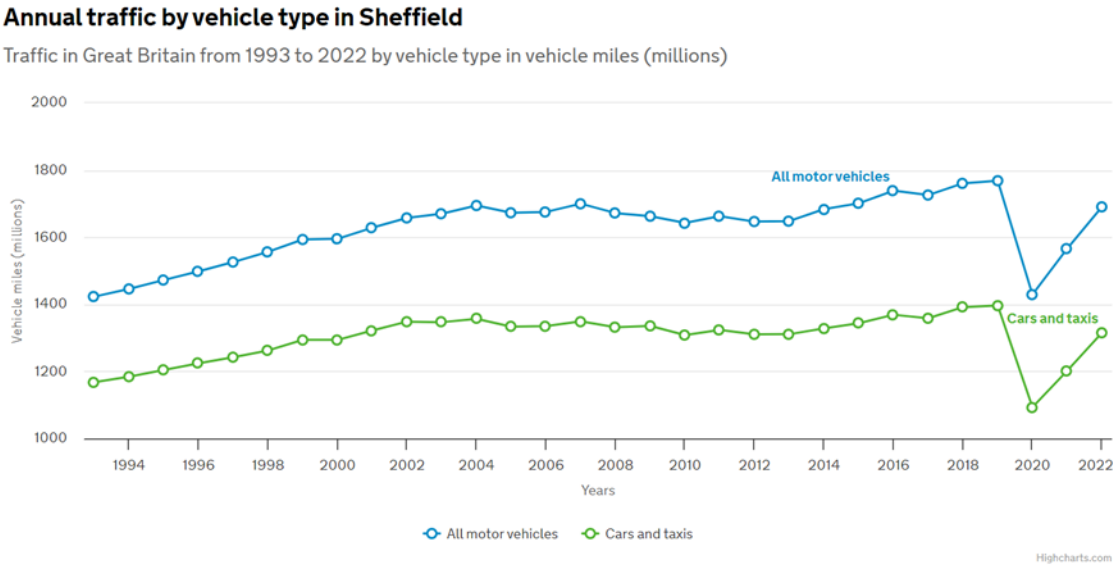
[12] Provisional road traffic estimates, Great Britain: July 2022 to June 2023 - GOV.UK (www.gov.uk)

National road traffic statistics[13] show that:

- Car traffic increased by 10.2% from 2021 levels to 244.0 billion vehicle miles. 2022 car traffic estimates remain lower than those for before the pandemic (-7.2% when compared to 2019)
- Van traffic increased by 5.8% from 2021 to 57.5 billion vehicle miles. Van traffic estimates for 2022 are higher than levels before the pandemic (+7.6% when compared to 2019)
- Lorry traffic decreased slightly by 0.6% from 2021 to 17.4 billion vehicle miles. 2022 lorry traffic estimates are higher than levels before the pandemic (+1.0% when compared to 2019)
- Pedal cycle traffic (cyclists on public highways, and the paths next to them) was 3.9 billion vehicle miles, 7.2% below 2021 levels. 2022 cycle traffic estimates are higher than levels before the pandemic (+7.4% when compared to 2019)

Sheffield annual average traffic – summary

Annual average data gathered by DfT shows that traffic volumes within Sheffield remained below pre-pandemic levels in 2022, average traffic volumes observed to date in 2023 (not a full year of data) suggest volumes are increasing slightly from 2022, in line with but below the national trend.

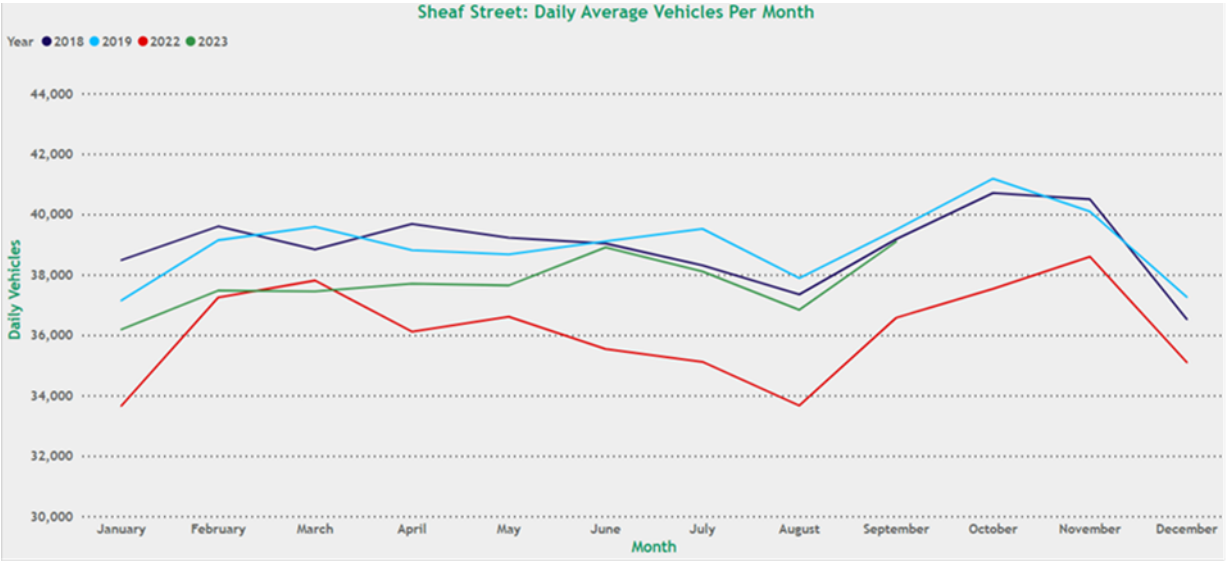


Historic traffic count data is available from a traffic counter located on Sheaf Street near to Sheffield Midland railway station. Sheaf Street is a busy route that traverses the city centre and is considered to be a good example for 'benchmark' average traffic in urban Sheffield, this location was used to monitor traffic levels through the pandemic.

The graph below shows daily annual average traffic volume data for Sheaf Street across 2018, 2091 2022 and up to the end of October in 2023. Traffic volume trends are consistent across all years and the pattern broadly reflects the DfT national and Sheffield annual

[13] Road traffic statistics - Summary statistics (dft.gov.uk)

averages. As with the DfT national and Sheffield average data, Sheaf Street shows that traffic volumes are increasing post the pandemic.



Daily average traffic volumes at alternative sensor locations across the city

The table below from 9 traffic count sensor locations in the city highlights shows that there has not been a significant increase the 24hr daily average traffic levels at these locations, although it should be noted that this is variable. We will continue to monitor trends over a longer period of time to determine if there are effects arising from the CAZ.

Daily Average Traffic Levels Per Month and Location, 2023

Sensor Name	January	February	March	April	May	June	July	August	September
Bernard Street	12,593	12,744	12,778	12,733	13,091	13,513	13,133	12,631	13,612
Boston Street	9,091	9,714	9,659	9,196	9,628	9,856	3,891	10,020	10,777
Brunswick Road	3,388	3,365	3,525	3,475	3,627	3,857	3,591	3,149	3,640
Hangingwater Road	6,836	6,855	6,982	6,479	6,776	6,822	6,386	5,916	7,244
Hanover Way North	15,123	15,671	15,519	16,535	17,370	17,684	17,087	16,518	17,378
Hanover Way South	13,888	14,111	13,988	14,265	15,123	15,798	15,179	14,194	14,425
Junction Road	6,934	6,690	6,691	6,554	6,784	7,053	6,815	6,431	7,006
Newbould Lane	7,407	7,469	7,480	7,339	7,449	7,702	7,572	7,433	7,199
Norfolk Park Road	3,907	3,713	3,687	3,604	3,744	3,908	3,546	3,344	3,837
Northumberland Road	4,007	4,571	4,446	3,754	3,622	3,204	2,991	2,443	3,319
Rutland Road	16,341	17,042	17,204	17,045	17,978	19,441	18,630	17,158	18,080
Woodbourn Road	10,586	10,557	10,577	10,215	10,588	10,908	10,277	10,297	11,095

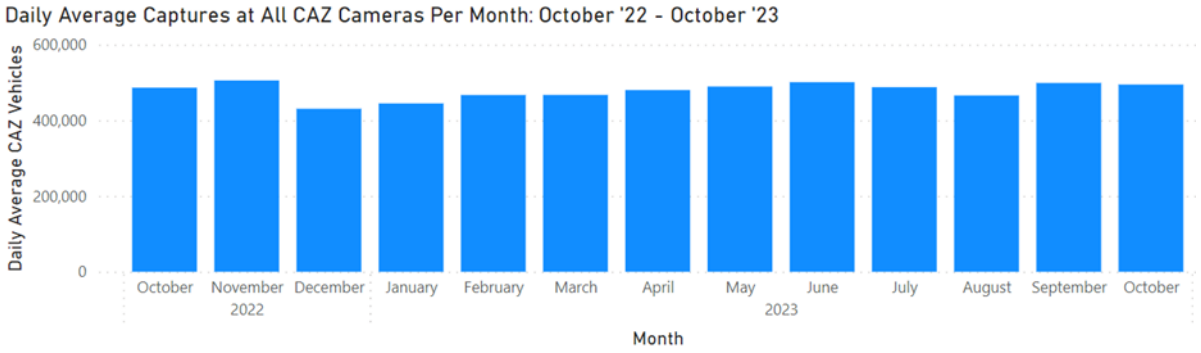
Traffic volumes within the CAZ area

The average daily traffic volume captured per month, from all CAZ cameras, is shown below. The data was extracted from the reporting system supplied by the provider of the ANPR system. This data indicates how many vehicles are travelling in the CAZ area each day regardless of whether they are required to pay the daily charge or how many times they enter the zone.

The underlying trend matches that seen across Sheffield with a steady increase in the first six months of the year followed by a decrease in July/August due to the school holidays, and further increases through September to November.

Comparing October 2022 with October 2023 there was no significant difference in the volume of vehicles in the CAZ area although as previously shown the vehicles entering the

CAZ are significantly cleaner and compliant with the Euro 6 diesel and Euro 4 petrol emissions standards. (Prior to 27th February 2023 the cameras were being tested but not being used to enforce the CAZ). This indicates that the CAZ is having a positive effect on fleet upgrades in the city but it is not having a significant effect in displacing traffic.

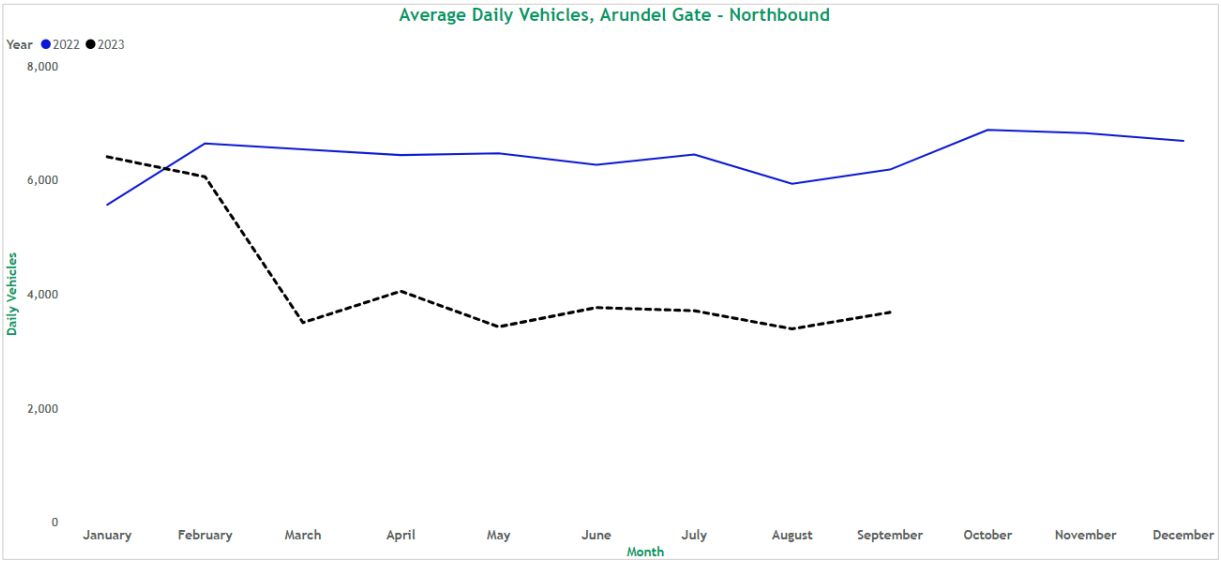


2.2.4 Arundel Gate bus gate intervention – traffic volumes

The bus gate came into operation on March 20th, 2023. It has been implemented through an Experimental Traffic Order (ETO) to reduce road traffic pollution at this location, the gate applies to northbound traffic only. A period of statutory consultation took place over the first 6 months of operations and the experimental order will run for up to 18 months before a decision is made on whether the bus gate is to be retained permanently.

Only buses, taxis and other authorised vehicles are able to pass through the bus gate on Arundel Gate – one of the city's most polluted areas. General traffic will not be able to use this as a through-route between Furnival Square roundabout and Park Square roundabout.

The graph below uses data from Automatic Traffic Counters on Arundel Gate to provide detail of northbound traffic volumes before and after the bus gate was introduced.



The chart shows that there is a significant reduction in northbound traffic using Arundel Gate post implementation of the bus-gate. Between April to September a 42% reduction in traffic

has been observed in 2023 as compared to the same period in 2022. This will contribute towards reduced NO_2 emissions on Arundel Gate.

The number of people that are driving through the bus gate without authorisation has been reducing from July where unauthorised trips were c.14% of total traffic. Most recent data indicates that unauthorised vehicle trips are making up c.5% of trips. We will continue to review the traffic volumes and level of abuse of the bus gate as part of the review of the ETO for this aspect of the Clean Air Plan.

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