

# **Glasgow City Council Low Emission Zone**

## **Transport Scotland Act 2019**

The Low Emission Zones (Emission Standards, Exemptions and Enforcement)  
(Scotland) Regulations 2021

The Low Emission Zones (Scotland) Regulations 2021

### **Mandatory Low Emission Zone Guidelines**

Mandatory emission standards are set for the vehicle classifications to which LEZs will apply, which means that all Scottish LEZs will operate to a consistent national level. In line with similar LEZ schemes in Europe, the proposed emission standard will be:

- Euro 6/VI for diesel
- Euro 4/IV for petrol/gas vehicles
- Euro 3 for motorcycles and mopeds.

Suitably certified retrofitted or repowered vehicles - where the emission standards are confirmed to a Euro 6/VI equivalent - will also be LEZ compliant.

Exemptions are proposed as follows:

- Emergency Vehicles (Police, Ambulance, Fire & Rescue etc...)
- Her Majesty's Coastguard
- Military vehicles
- Vehicles for disabled persons (including blue badge holders)
- Historic vehicles
- Showman's vehicles

The initial penalty charge for all non-compliant vehicles is set at £60, reduced by 50% if paid within 14 days. A surcharge is also proposed whereby the penalty amount doubles with each subsequent contravention detected in the same LEZ. The penalty charges are capped at £480 for cars and light goods vehicles and £960 for bus and HGVs.

## 1. Reporting Body

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Date of Submission: 19<sup>th</sup> April 2022

Signed: 

Head of Sustainability, Glasgow City Council

Committee Approval Date: 10<sup>th</sup> March 2022

## 2 Low Emission Zone Summary

### 2.1 Introduction

Under the powers granted by Part 2 of the [Transport \(Scotland\) Act 2019](#) (the 'Act'), and in accordance with [The Low Emission Zones \(Scotland\) Regulations 2021](#) and [The Low Emission Zones \(Emission Standards, Exemptions and Enforcement\) \(Scotland\) Regulations 2021](#), Glasgow City Council (GCC) proposes to introduce a Low Emission Zone (LEZ) in Glasgow.

GCC undertakes monitoring of air pollution levels across the city and significant progress has been made in improving the air quality experienced by residents and visitors. The city has previously declared Air Quality Management Areas (AQMA) for four areas in respect of exceedances of the air quality objectives, including one which covered the whole of the City of Glasgow. Improvements have resulted in the objectives being met in recent years with the exception of areas within the city centre AQMA where levels of nitrogen dioxide (NO<sub>2</sub>) are still of concern. Some areas of exceedance are experiencing NO<sub>2</sub> levels around 50% above the objective and decisive action is needed to sufficiently reduce this in an acceptable timescale.

GCC introduced Scotland's first Low Emission Zone (LEZ) in 2018 which targeted emissions from the bus fleet and required progressive improvements in the number of cleaner buses entering the city centre. However, extensive modelling of options highlighted that bus fleet improvements would not be sufficient on their own to achieve compliance with the air quality objectives in the city centre.

A robust program of LEZ option appraisal, modelling, consultation and engagement has led to the development of an LEZ final scheme design which is expected to achieve these objectives.

## 2.2 LEZ Area

The Glasgow LEZ is proposed to cover the area of the city centre bounded by the M8 motorway to the north and west, the River Clyde to the south and High St / Saltmarket to the east. A map of the proposed Glasgow LEZ is shown in **Appendix A**. The map can also be downloaded in higher resolution from [here](#).

A list of roads within the LEZ is shown in **Appendix B** and is also available at the following [LINK](#).

## 2.3 LEZ introduction and Grace Periods

It is the intention of Glasgow City Council to introduce the LEZ on **31<sup>st</sup> May 2022**. Glasgow City Council has committed to improving air quality by enforcing the LEZ at the earliest opportunity and therefore proposes a one year grace period, which is the minimum permissible in legislation, meaning enforcement of entry restrictions will begin on **1<sup>st</sup> June 2023**.

A further grace period is proposed for vehicles registered to **residents within the LEZ**, reflecting their restricted options in respect of choosing to enter the LEZ. Therefore, enforcement of entry restrictions for vehicles which fall within this category will begin on **1<sup>st</sup> June 2024**.

## 2.4 Operating Hours of the LEZ

The Glasgow LEZ will operate at all times, 365 days a year and 24 hours a day. The Glasgow LEZ is proposed in respect of breaches of the annual mean nitrogen dioxide objectives and therefore emissions at all times contribute to these breaches.

Glasgow City Council may temporarily suspend the operation of the LEZ scheme for a specified period where it is considered appropriate to do so for the purposes of a significant national or local event. A suspension may also be issued in relation to a temporary diversion into the LEZ where vehicles follow a signed diversionary route.

## 2.4 Scope of the LEZ

The Glasgow LEZ will apply to all vehicle types, with the exception of motorbikes and mopeds, and those vehicle types or uses considered exempt in Regulations. **Table 1 of Appendix B** sets out the vehicle types to which the LEZ will apply, as specified in Annex II of Directive 2007/46/EC.

Entry to the LEZ by the above vehicle categories will only be permitted if they meet or exceed the nationally consistent emissions standards as set out in [The Low Emission Zones \(Emission Standards, Exemptions and Enforcement\) \(Scotland\) Regulations 2021](#) and summarised in **Table 2 of Appendix B** for

compression engine (diesel) vehicles and in **Table 3 of Appendix B** for positive ignition (petrol and gas) vehicles.

Vehicles which have been retrofitted with a suitable emissions abatement system, such that their tailpipe emissions now meet or exceed the relevant emissions standard for their vehicle type as detailed above, will be permitted access to the LEZ. Such retrofitted vehicles must be suitably accredited by an independent scheme such as the Clean Vehicle Retrofit Accreditation Scheme (CVRAS).

Vehicles which have undergone repowering, either through the installation of a new engine or other power type, will also be permitted access to the LEZ, should the repowering result in emissions which meet or exceed the above emissions standards.

## 2.5 Exemptions and Time Limited Exemptions

A number of vehicle types are exempted from LEZs within Scotland, as defined in [The Low Emission Zones \(Emission Standards, Exemptions and Enforcement\) \(Scotland\) Regulations 2021](#). A full list of these can be found in **Table 4 of Appendix B**

The Transport (Scotland) Act 2019 allows local authorities to grant non-compliant vehicles or vehicle types a time limited extension which would permit them to operate within a LEZ. These extensions are limited to a maximum of one year but may be renewed by the local authority. Glasgow City Council does not propose a general exemption of this type for any particular vehicles or vehicle types.

The LEZ scheme will allow for applications for a time limited exemption under circumstances where entry of a non-compliant vehicle is required for a specific, defined purpose not considered in legislation or regulations. Applications will be determined on their individual merits. Examples of this may be, but are not limited to; abnormal loads or machinery transport, historic vehicles or vehicles of particular speciality not covered by other exemptions and used for a specific purpose, or any other non-compliant vehicle use deemed appropriate on application to Glasgow City Council.

Applications for time limited exemptions will not normally be considered for the routine transport of people or goods or for routine commercial operations. However, GCC may apply a time-limited exemption, by reference to the vehicle's use, upon consideration of an application. The approach taken will be pragmatic and adaptable and take account of National Modelling Framework modelling outputs to determine the relative impact of the vehicle use in relation to the emissions that are being targeted for reduction. It is expected that any exemptions will only be granted in rare circumstances and may be subject to conditions or restrictions as deemed appropriate by GCC.

Following feedback from taxi operators, GCC will develop a discretionary mechanism to ensure that operators who can evidence a retrofit funding application or registration of interest (or alternative appropriate evidence of arrangements in place to achieve LEZ compliance) within the timescales of the funding round for 2022/2023, will not face penalty charges for a time limited period to allow the necessary upgrades to be undertaken. Failure to evidence application for funding, or delaying applying for this funding will be at operators own risk.

This additional mitigation balances the concerns raised by the trade around capacity and funding, whilst not disincentivising operators from making arrangements as quickly as possible to improve air quality in the city.

## 2.6 Penalty Charges for Non-Compliant Vehicles

Penalty charges for non-compliant vehicle entry into an LEZ in Scotland are set at a national level as seen in [The Low Emission Zones \(Emission Standards, Exemptions and Enforcement\) \(Scotland\) Regulations 2021](#).

The initial penalty charge is set at £60 and is reduced by 50% if paid within 14 days. Where repeat entry by the same vehicle is detected within a 90 day period, this penalty charge rate will double, doubling again on each subsequent entry up to a maximum determined by vehicle type. Where no subsequent entry by a non-compliant vehicle is detected within a 90 day period, the penalty charge is reset to the initial penalty charge rate of £60. Full details of the applicable penalty charges are shown in **Table 5 of Appendix B**.

## 3 Strategy

3.1 In November 2015, the Scottish Government published the [Cleaner Air for Scotland](#) strategy. This strategy document set out a multi-agency approach to work together towards a common aim of achieving the best possible air quality for Scotland. The strategy set out the pathway for review of the Local Air Quality Management (LAQM) system. It also set out the development pathway for the National Modelling Framework (NMF), intended to provide a standard air quality assessment methodology for use across Scotland; and also the [National Low Emission Framework](#) (NLEF), which set out a procedure for local authorities to determine effective measures for addressing air quality issues in their areas.

3.2 The Scottish Government [2017/18 Programme for Government](#) (PfG), included a commitment to ‘creating a Low Emission Zone (LEZ) in one of our cities by the end of next year – and working with local authorities to introduce LEZs into our four biggest cities by 2020’. Building on the work of the Local Air Quality Management Progress Reports by GCC and the modelling and source apportionment work undertaken by the Scottish Environment Protection Agency (SEPA), it was determined that Glasgow would be the first of the Scottish cities to introduce an LEZ by the end of 2018.

- 3.3 At the meeting of [28th September 2017](#), the City Administration Committee (CAC) agreed to a set of proposals for introducing a phase 1 LEZ by the end of 2018. This LEZ was to be initially focussed on reducing emissions from the scheduled bus fleet within the city centre. LEZ scenario modelling and source apportionment work had shown that buses were the major source of oxides of nitrogen (NOx) emissions within those streets which recorded the highest levels of NO2 pollution. Development of phase 1 of the Glasgow LEZ proceeded in advance of publication of the National Low Emission Framework and helped to inform the development of this methodology. GCC therefore did not undertake a formal NLEF appraisal, however the detail contained within the options appraisal and scenario modelling fulfils the requirements of NLEF.
- 3.4 It was further determined that the phase 1 LEZ would be enforced through a Traffic Regulation Condition (TRC) approach. GCC would seek a TRC through the office of the Traffic Commissioner for Scotland, requesting that a rolling improvement in the proportions of the scheduled bus fleet in Glasgow city centre meeting the Euro VI standard be applied to the license conditions of bus operators. This approach was granted and phase 1 of Glasgow's LEZ came into effect on the 31<sup>st</sup> December 2018.
- 3.5 The CAC also approved the ongoing development of phase 2 of the LEZ, utilising the powers to be granted under the [Transport \(Scotland\) Act 2019](#). The LEZ has been developed through ongoing LEZ option appraisal, modelling and consultation and is summarised in Section 2 of this submission.
- 3.6 The LEZ complements the wider transport aims for the city within the [Glasgow Transport Strategy](#). This new local transport strategy is the overarching transport strategy for the city, and provides a framework for investment and decision-making on transport issues up to 2030 . There are other separate but related strategies, all of which complement the LEZ – including but not limited to the [Glasgow Climate Plan](#), [Active Travel Strategy](#), [Liveable Neighbourhoods Plan](#) and [City Centre Transformation Plan](#). These strategies and their impacts are detailed further in Section 5.3 of this submission.
- 3.7 The LEZ therefore complements the national strategy objectives and Glasgow's wider strategic vision for transport, both in the city centre, and more widely throughout the city.

## **4 Governance**

- 4.1 From the initial approval of phase 1 of the Glasgow LEZ, responsibility for developing the LEZ has fallen within the remit of the Executive Director of Neighbourhoods, Regeneration and Sustainability (NRS). Senior officers of NRS and the City Convenor for Sustainability and Carbon Reduction were appointed to represent GCC at the LEZ Leadership Group, which was established by the Scottish Government to oversee the introduction of LEZs in Scotland.

- 4.2 A Low Emission Zone Delivery Group (LEZDG) was established by GCC to oversee development of the Glasgow LEZ and comprised representatives of GCC (including Sustainable Glasgow, Transport Strategy, Traffic Management and Road Safety, Enforcement, Fleet Services, Licensing, Legal and Communications). Additional representation included Strathclyde Partnership for Transport (SPT), NHS Greater Glasgow and Clyde (GGCNHS), Transport Scotland (TS) and the Scottish Environment Protection Agency (SEPA).
- 4.3 The pandemic impacted on the ability of the LEZDG to meet regularly and effectively. Regular meetings were replaced by smaller working groups and shared communications on the specific aspects of LEZ development. LEZDG participants were suitably updated and consulted on all aspects of ongoing LEZ development.
- 4.4 LEZ development is reported in Glasgow City Council to the Environment, Sustainability and Carbon Reduction City Policy Committee. Reports have included the following:
- [20th March 2018](#) – detailed update on the introduction of phase 1 of the LEZ and progress in the development of phase 2.
  - [11th June 2019](#) – further update on development of phase 2 of the LEZ.
  - [6th October 2020](#) – detailed the findings of an initial public consultation into LEZ options. Noted the revised timescale for introduction of Phase 2 due to the impacts of the pandemic on the legislative program.
  - [8th June 2021](#) - considered the detail of the preferred scheme design and sought approval to take this design to statutory public consultation.
  - [23rd November 2021](#) -detailed the findings of the statutory public consultation including the independent consultant’s report on the findings. The report also detailed the intention to make minor amendments to the scheme boundary, based upon the feedback received, and to proceed to formal publishing of the final scheme design.
  - [7th March 2022](#) - to provide Committee with details of the final scheme design of the Glasgow Low Emission Zone, the outcomes of publishing the final scheme design, to seek approval of the final scheme design and to submit the scheme to Scottish Ministers for approval.
- 4.5 The paper detailing the LEZ final scheme design and intention to undertake Ministerial Submission was presented to the City Administration Committee on [10th March 2022](#). This received Committee approval but was “called in” for further examination on the [23rd March 2022](#) at the Finance and Audit Scrutiny Committee where the decision to approve at CAC was upheld.
- 4.6 Following implementation of the LEZ, it is anticipated that responsibility will remain within Neighbourhoods and Regeneration Services for the various aspects of the LEZ operation and management, including:
- Annual Progress Reporting - The performance of the LEZ in reducing levels of air pollution will be made available within the annual progress report local authorities are required to produce through the Local Air Quality Management (LAQM) process. This will be produced by the Sustainability service within City Development division of NRS and subject to Committee approval.

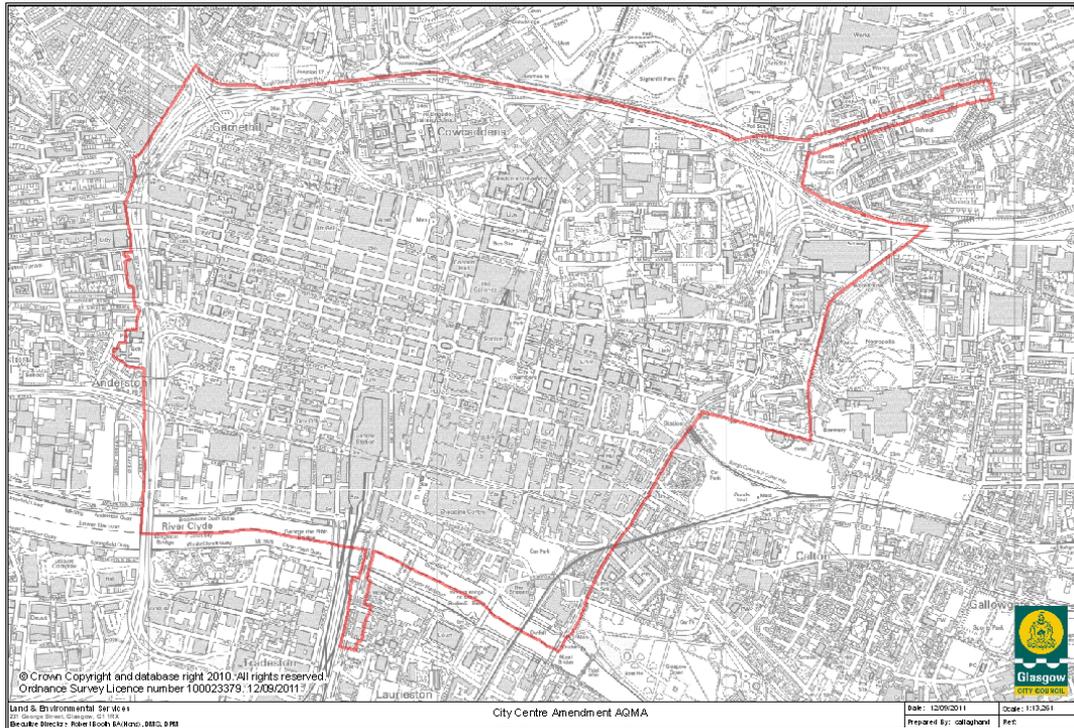
- An annual report on the operation and effectiveness of the scheme - detailing the financial reporting in terms of income from penalty charge notices and expenditure incurred in maintaining the enforcement system. It is anticipated that this report will be prepared jointly between Sustainability and Traffic and Road Safety and subject to Committee approval prior to submission to Scottish Ministers.
- LEZ Enforcement – it is anticipated that Traffic and Road Safety will have responsibility for the implementation of the enforcement automated number plate recognition (ANPR) camera system using approved devices, maintenance of signage and LEZ enforcement. This section is already responsible for enforcing car parking restrictions and bus lane enforcement. A back-office system for the recording, checking and issuing of PCNs will be established for the purpose of LEZ enforcement in line with set guidance.

## **5 Summary of Air Quality, Climate Change and Transport issues**

### **5.1 Air Quality**

- 5.1.1 Glasgow City Council has declared four Air Quality Management Areas (AQMA) in respect of exceedances of the air quality objectives, three of which – the [City Centre AQMA](#), the [Byres Rd and Dumbarton Rd AQMA](#) and the [Parkhead Cross AQMA](#) – were declared in respect of the annual mean NO<sub>2</sub> objective. An additional AQMA in respect of the annual mean particulate matter (PM<sub>10</sub>) objective, covering the whole of the City of Glasgow, was declared in 2012 and revoked in 2016. Further improvements in monitored air pollution levels have resulted in the revocation of the Parkhead Cross AQMA in 2020 and the objectives being met in the Byres Rd and Dumbarton Rd AQMA, although this AQMA remains in place pending revocation. A map of the City Centre AQMA is shown in Figure 1 below.

Figure 1: City Centre AQMA



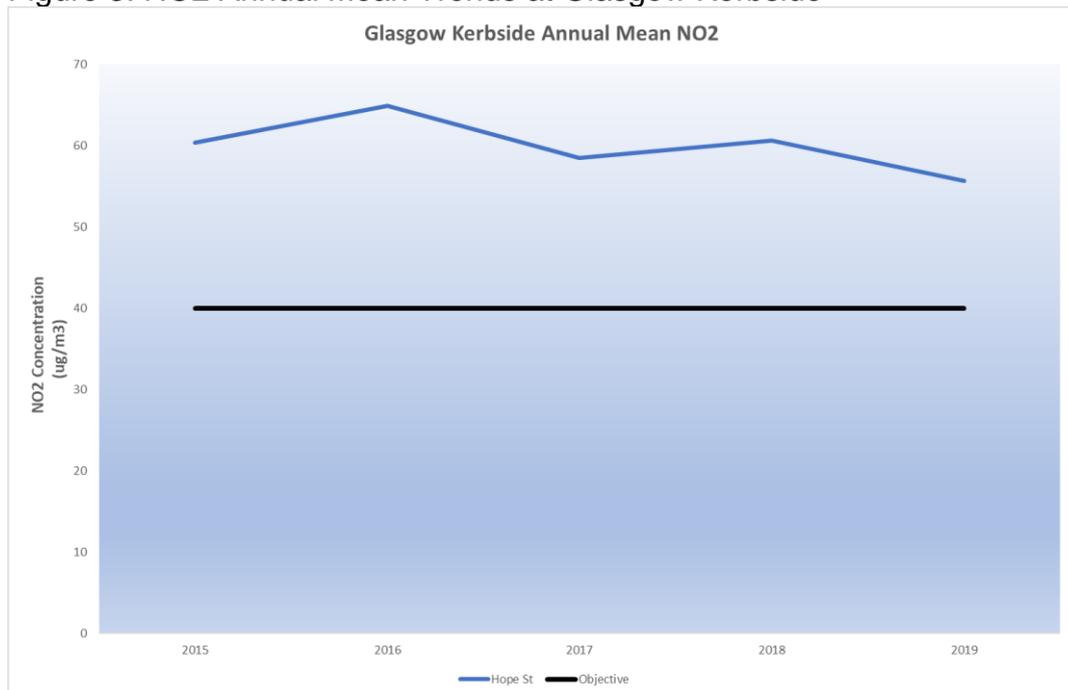
- 5.1.2 Glasgow's first Air Quality Action Plan (AQAP) was produced in [2004](#) in response to the declaration of the City Centre AQMA. A further AQAP was produced in [2009](#) in response to the declaration of the Parkhead Cross and the Byres Rd and Dumbarton Rd AQMAs. An updated AQAP is currently in draft form and is expected to be adopted in 2022.
- 5.1.3 Progress on all elements within the AQAP, and subsequent air quality improvement actions adopted since the AQAP was produced, are reported within the [Annual Progress Report](#) (APR) and submitted to the Scottish Government in line with the LAQM statutory requirements.
- 5.1.4 Air quality has improved within Glasgow as can be seen through the revocations of AQMAs. However, air pollution levels remain of significant concern within the City Centre AQMA. In 2019, the last available year unaffected by traffic reductions caused by the pandemic, some monitoring locations recorded levels around 50% above the annual mean objective for NO<sub>2</sub>.
- 5.1.5 In 2019, NO<sub>2</sub> objectives were exceeded in the city centre at the Glasgow Kerbside (Hope St) automatic monitoring station as well as at a further 8 locations monitored by diffusion tube. A further 4 sites recorded concentrations of NO<sub>2</sub> which were within 10% of the objective. Figure 2 below shows the locations of diffusion tubes recording exceedances of the objective in red.

Figure 2: 2019 NO<sub>2</sub> Diffusion Tubes



5.1.6 Data from the five years up to 2019 at the Glasgow Kerbside automatic monitoring station shows a small decrease in annual mean NO<sub>2</sub> concentrations, however levels remain significantly above the objective.

Figure 3: NO<sub>2</sub> Annual Mean Trends at Glasgow Kerbside



5.1.7 All locations, except for one diffusion tube, recorded levels within the objective in 2020; however, preliminary results for 2021 indicate a return to exceedances of the objective at a number of locations. Without decisive action, it is expected that NO<sub>2</sub> levels will rise further as the Covid-19 recovery progresses and are not anticipated to be resolved in a reasonable timescale. It has therefore been determined that additional intervention, in the form of an LEZ, is required to further reduce NO<sub>2</sub> levels within the City Centre AQMA to an acceptable level.

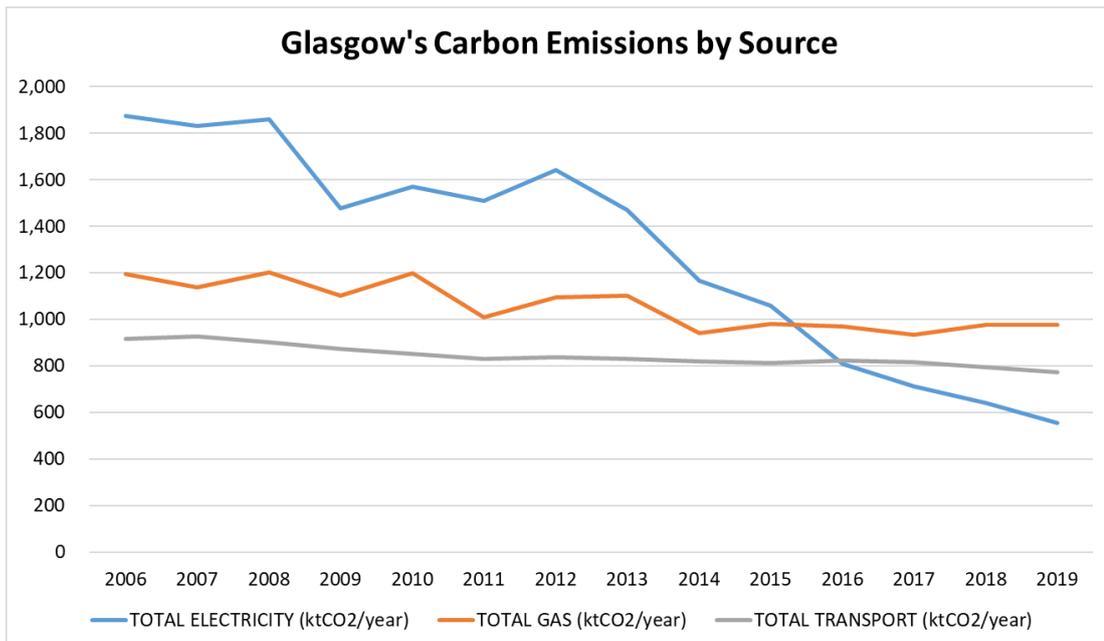
## 5.2 Climate Change

5.2.1 GCC declared a climate and ecological emergency at its meeting of [16 May 2019](#). The City Council acknowledge that we have a key role to play in enabling the city to address the global climate and ecological emergency. Two working groups, with the input of many expert stakeholders, produced a set of recommendations for actions to be taken forward by GCC and external bodies. These recommendations helped form [Glasgow's Climate Plan: Our Response to the Climate and Ecological Emergency](#).

5.2.2 The Climate Plan noted that the city has already achieved (and exceeded) its target of reducing CO<sub>2</sub> emissions by 30% by 2020, achieving this goal by 2015, but this also means that many of the quick wins have been realised. The most recent data (2019) for city emissions highlights that our total area wide emissions is 2,414 kilo-tonnes (ktCO<sub>2</sub>). This represents a 41% reduction on the city's baseline data (2006) and the total emissions which will have to be mitigated by avoiding, reducing and offsetting activities, in that order.

5.2.3 By sector, transport emissions are a significant challenge for the city, as the sector has seen slower reductions than in other sectors such as Domestic and Commercial & Industrial. However, the Covid-19 pandemic has had an impact on the city's emissions, particularly in the transport sector. Data published by Google Environmental Insights for 2020 suggests that transportation based emissions in Glasgow decreased by 39% in 2020. The city will strive to maintain that reduction and further reduce transport sector emissions.

Figure 4: Glasgow's Sectoral Emissions 2006 - 2019



- 5.2.4 Development of the LEZ directly addresses actions 22 and 53 of the Glasgow Climate Plan. It also contributes towards actions 26,33,54,55 and 56. The LEZ complements those actions seeking to reduce carbon emissions from traffic such as reducing private car use, improve public transport provision and transition the fleet to cleaner forms of transport.
- 5.2.5 The LEZ does not set emission standards directly relating to the carbon emissions of vehicles nor does it reduce the number of vehicles on city centre roads. LEZ modelling assumed that non-compliant vehicles currently making trips into the LEZ would be replaced by an equivalent number of compliant vehicles post implementation of the LEZ. In practice however, a number of vehicle users may choose to change the way they access the LEZ and the LEZ may encourage some people to walk, cycle or use public transport instead of a car, with a corresponding benefit in terms of carbon emissions from transport.
- 5.2.6 Promotion of these alternatives is a key part of the overall LEZ strategy. Scottish Government LEZ funding was provided through the [Public Transport Provision \(PTP\)](#) Fund in 2019/20 and allocated for projects around LEZs which were designed to improve emissions from road transport or otherwise improve public transport provision. LEZ funding also helped to provide two new [bus gates](#) in city centre streets where the air quality objectives were not being met and where a high proportion of NO<sub>x</sub> emissions were attributed to the bus fleet.
- 5.2.7 The SEPA report, [Consideration of Carbon Dioxide emissions within an LEZ scheme: Glasgow](#), concluded that CO<sub>2</sub> emissions from vehicles could reduce by 300 tonnes per year upon introduction of the LEZ, with the main decrease seen inside the LEZ. This is based on the same number of vehicle movements as pre-LEZ and the actual reduction in CO<sub>2</sub> emissions is likely to be higher since any resultant reduction in private vehicle trips, not captured in transport or emissions modelling, will directly result in reduced carbon emissions and contribute to the city meeting climate change targets.

## 5.3 Transport

5.3.1 At the City Administration Committee of the [10<sup>th</sup> March 2022](#), the Committee gave approval to and adopted the Glasgow Transport Strategy: Policy Framework. This new local transport strategy is city-wide, and provides a framework for investment and decision-making on transport issues up to 2030. Part 1 of the [Glasgow Transport Strategy](#), a Policy Framework, has been produced and approved by the Council. Part 2, a Spatial Delivery Framework, is under development.

5.3.2 There are other separate but related transport strategies, all of which complement the LEZ – the [Active Travel Strategy](#), [Liveable Neighbourhoods Plan](#) and [City Centre Transformation Plan](#).

5.3.3 The City Centre Transformation Plan (CCTP) is particularly aligned with the development of the LEZ, given the overlap with the aims of the CCTP and the area covered by the strategy. The key aims of the CCTP include:

- Re-allocate road space in Glasgow City Centre for active travel and green infrastructure;
- Deliver improved public transport and support/encourage a shift to more sustainable modes, particularly walking, cycling and public transport;
- Improve access for the mobility impaired;
- Achieve a 30-40% reduction in peak-hour private car traffic in Glasgow City Centre by 2030;
- Deliver improvements for servicing (e.g. goods, deliveries and waste collection) to improve the vitality of Glasgow City Centre;
- Support a doubling of Glasgow City Centre's population by 2035; and
- Support Glasgow's aim to be carbon neutral by 2030

The CCTP will help to deliver a transformation of the centre and ensure the city makes a full contribution to our climate change commitments and transition to net zero carbon.

5.3.4 As part of the CCTP, several Area Based Catalysts for Change have been identified to deliver the transformational changes set out in the plan objectives. One of these is the 'People First Zone'. The 'People First Zone' is proposed to be a central area where vehicular access would be limited to essential users only such as people with disabilities, buses, taxis, emergency services etc. This intervention would greatly reduce vehicle numbers in the core of the city centre and create opportunities to reallocate road space for active travel, public realm and greenery. On street parking would also be significantly reduced. The People First Zone coincides with a central area within the LEZ where air pollution levels are at their highest. It also complements the ongoing '[Avenues project](#)'.

5.3.5 Glasgow City Council is delivering an [Active Travel Strategy](#) to supersede the existing [Strategic Plan for Cycling 2016-2025](#) and designed to achieve significant modal shift across the city to walking, wheeling and cycling. The strategy is a recognition of the positive impact that transport, and active travel

in particular, can make towards city's wider policy objectives on Climate and the Environment, Health and Wellbeing, Inclusion and Equality and Wealth and Inclusive Growth.

The strategy is framed by three policy and action areas:

- **Connectivity:** people and place: rebalancing our streets and spaces - with a focus on networks and infrastructure in our street environments.
- **Unlocking Change:** enabling everyone to walk, wheel or cycle - focussing on training and education and working collaboratively.
- **Thinking Differently:** encouraging, motivating and sustaining change - focussing on communication and promotion and inspiring people through larger events and other activities.

5.3.6 A key output from the strategy will be the City Network, which will provide an accessible, safe, coherent and direct active travel network across Glasgow. To be delivered by 2030, the City Network will connect key amenities and drivers of travel such as education, business, retail and culture. There will also be development of the Neighbourhood Network with a focus on walking and wheeling. This Neighbourhood Network will enable easy everyday active journeys within and between neighbourhoods.

5.3.7 Introduced at the start of Covid-19 to suppress the spread of the virus and help manage demand on public transport, Glasgow's [Spaces for People](#) programme has [delivered a significant number of temporary travel interventions](#) across the city to ease physical distancing in public places, mainly through the provision of widened footways, road closures and segregated cycle lanes. The majority of Spaces for People schemes will now be made permanent following consideration of an [independent review](#) which highlighted that the infrastructure could offer long-term active travel and sustainability benefits.

5.3.8 Glasgow Bus Partnership brings together as a voluntary partnership the eight Glasgow City Region local authorities, Strathclyde Partnership for Transport, bus operators (through their new alliance, GlasGo) and bus passenger representative groups to address current challenges to bus travel and to improve the passenger experience for communities across the Region. The vision of the Glasgow Bus Partnership is of a City Region where bus services form part of a network of connectivity, enhancing the opportunities and wellbeing of those who live or visit here - providing safe, affordable, enjoyable connections and reducing road congestion, noise and air pollution. Aims of the GBP include:

- Improving bus priority mechanisms and reducing congestion to improve bus journey times and reliability
- Ensuring buses are given higher priority in any future city planning
- Improving the accuracy of real time passenger information and exploring options to introduce an integrated ticketing system

The GBP also supports the delivery of Glasgow's Low Emission Zone and brings together key partners to develop bus priority funding bids to [Transport Scotland's Bus Partnership Fund](#). The work of the GBP seeks to positively impact upon the affordability and accessibility of the bus network and assist with

creating the conditions that will increase bus patronage. A faster, cheaper, and better-connected bus network will benefit all bus passengers across the City Region as well as the environment.

5.3.9 On 20 January 2022, the Scottish Government published [STPR2 Phase 2](#) - a key document which outlined 45 long term transport investment recommendations that seek to make transport in Scotland more sustainable, and support people to make better, more informed choices on how they travel. One of the standout recommendations was the inclusion of Clyde Metro - described as a multi-billion pound investment which, when complete, could better connect over 1.5 million people to employment, education, and health services in and around the Glasgow City Region:

- A metro transport system that transforms connectivity in the Glasgow City Region up to around 15km from the city centre. It would target areas where connections are currently poor, including places where there is deprivation.
- Metro transport systems include one of or a combination of bus rapid transit, light rail and metro rail. These options would complement the service provided by traditional railways and may include the conversion from existing railways to light rail or metro rail.
- Improving access across the city region supports Scottish Government policies aimed at tackling deprivation and health issues. Connecting Clyde Metro with active travel and existing transport networks would remove shorter distance trips from the heavy rail network and free up additional rail capacity for longer journeys.
- The system would help to deliver environmental benefits and improve public transport journey times and journey time reliability, making sustainable travel options more attractive.

5.3.10 The final recommendations are expected to be confirmed later this year. Meantime, STPR2 recommends that Transport Scotland continues to work with the Council, Strathclyde Partnership for Transport (SPT) and other regional partners on developing the business cases and delivery plan for Clyde Metro.

5.3.11 As a Local Authority, GCC operates a large vehicle fleet to support all aspects of Council services with over 1,300 vehicles in the fleet across the council “family”. The GCC [Fleet Strategy](#) for 2020 to 2030 sets out to minimise the Council’s carbon footprint and lead on our carbon neutrality and net zero commitments. Successful delivery of the fleet strategy will see alternative fuel solutions powering our fleet to support our operational objectives, significantly reducing our carbon footprint and advancing the Council’s drive towards net zero emissions.

5.3.11 Other initiatives such as the provision, and promotion of, [electric vehicle charge points](#), [car clubs](#) and [cycle hire](#) schemes, all serve to promote sustainable and low emission transport options. The LEZ can support the travel aspirations of Glasgow by encouraging modal shift, especially if delivered in tandem with active travel and bus priority improvements.

## 6 LEZ Objectives

6.1 The objectives of the Glasgow Low Emission Zone are as follows:

- Improve public health of residents of and visitors to the City of Glasgow by contributing towards meeting the air quality objectives prescribed under section 87(1) of the Environment Act 1999.
- Contribute towards the emissions reduction targets set out in Part 1 of the Climate Change (Scotland) Act 2009 through the promotion of low and zero emissions vehicles and the promotion of public and sustainable transport options.
- Improve the amenity of Glasgow through the promotion of the Glasgow City Council Strategic Themes of A Vibrant City, A Healthier City and a Sustainable and Low Carbon City.

## 7 LEZ Appraisal / Modelling / Validation

7.1 Development of phase 1 and progression towards the appraisal of phase 2 of the Glasgow LEZ proceeded in advance of publication of the National Low Emission Framework. The lessons learned in Glasgow and the progress made helped to inform the development of the NLEF methodology. GCC therefore did not undertake a formal NLEF appraisal, however the detail contained within the options appraisal and scenario modelling fulfils the requirements of NLEF.

7.2 The SEPA report [Air Quality Evidence Report - Glasgow](#) details the appraisal work undertaken until late 2018. Modelling methods were outlined in the report and the performance of the model discussed. Results were presented which provide detail on the level and extent of roadside air quality issues within the modelled area. The likely sources of the roadside pollution were outlined and indicative modelling to inform LEZ development was also carried out. The air quality model was run for a number of scenarios to determine the potential benefits to air quality from improving the emissions from the vehicle fleet.

7.3 The modelling methodology used is described in detail in the report produced by SEPA on the [NMF pilot project in Aberdeen](#). This methodology has been independently reviewed and found to be suitable for NMF modelling.

A traffic data collection programme was undertaken in order to build a more detailed picture of traffic flow and composition. Survey location choice was co-ordinated by Transport Scotland in consultation with GCC and SEPA. Traffic data was collected in November 2017 consisting of 72 Junction Turn Counts (JTC), 38 Automatic Traffic Counters (ATC), and 8 Automatic Number Plate Recognition (ANPR) cameras located on key routes. Data was collected which divided the traffic counts into 11 individual vehicle classes.

Figure 5: Traffic Data Collection Locations.

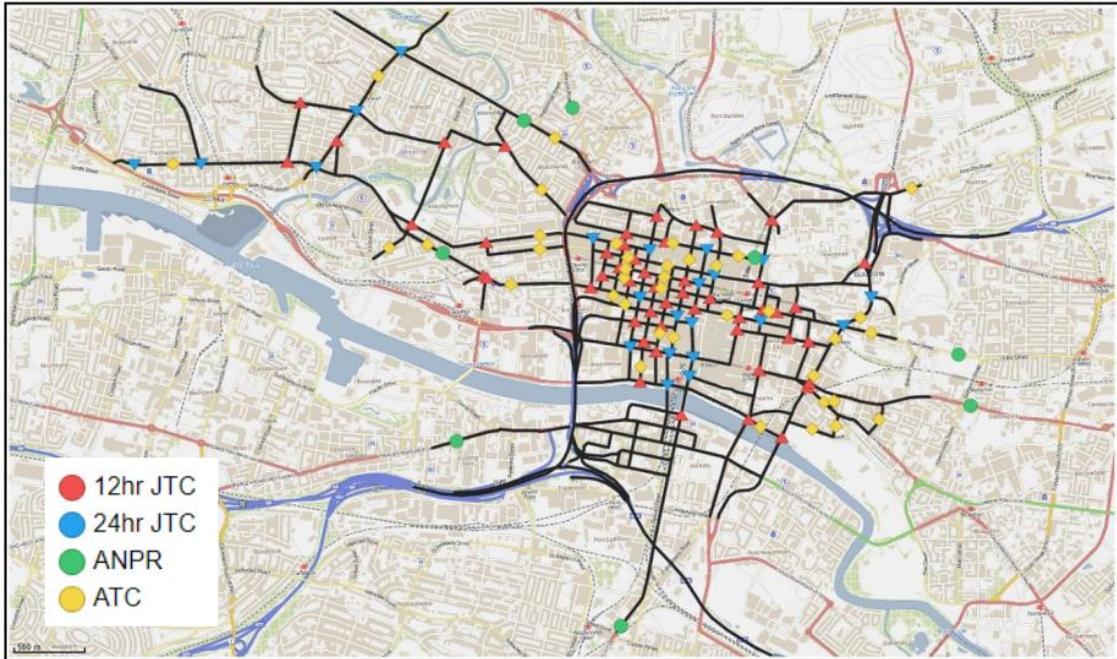


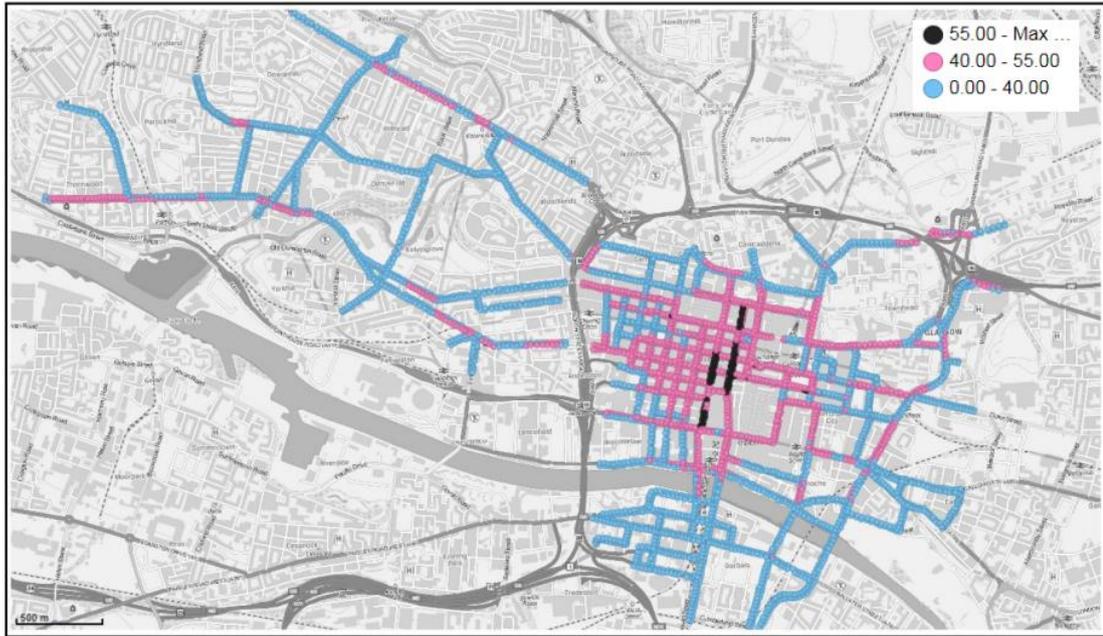
Table 1: Vehicle Classes Included in Traffic Data Collection.

<b>11 Vehicle Classes</b>
Motorcycle
Cars
Taxi (As Classified By The DVLA)
Light Goods Vehicles (LGV's)
Buses/Coaches
2 Axle Rigid HGV's
3 Axle Rigid HGV's
4/5 Axle Rigid HGV's
3/4 Axle Artic. HGV's
5 Axle Artic. HGV's
6+ Axle Artic. HGV's

7.4 Traffic data was used to inform the air quality model and produce a baseline map of roadside NO<sub>2</sub> concentrations. Each roadside point in Figure 6 below is represented by a coloured dot, with the colour indicating modelled annual average concentration of NO<sub>2</sub> as follows:

- Blue: 0 up to and including 40 µgm/3
- Pink: Above 40 up to and including 55 µgm/3
- Black: Above 55 µgm-3 up to and including the maximum value.

Figure 6: Modelled Roadside Annual Average NO<sub>2</sub> (µg/m<sup>3</sup>) for 2017.



- 7.5 Establishing the baseline model provided a number of observations:
- Outside the existing AQMAs, there are only few areas where roadside NO<sub>2</sub> concentrations are likely to be higher than the annual average limit value. Due to model uncertainty, not all areas predicted areas of exceedance will be above the limit. These areas could be investigated with additional monitoring.
  - Modelling confirms that the city centre AQMA boundaries are well founded. In particular, the city centre AQMA has roadside points with an annual average concentration of NO<sub>2</sub> above 55 µg/m<sup>3</sup>.
  - Roadside locations in Glasgow which lie along congested roads with a low annual average speed, particularly within the city centre AQMA and in street canyons, may be experiencing very high annual average NO<sub>2</sub> concentrations.
  - There were 3 diffusion tube monitoring locations in 2017 where the annual average NO<sub>2</sub> concentration was measured over 55 µg/m<sup>3</sup> - Hope Street and Gordon Street, adjacent to Central Station. Analysis of the base model for 2017 indicates that are 88 roadside points which are greater than 55 µg/m<sup>3</sup>.
- 7.6 The Glasgow NMF model was used to explore the relative contribution of different vehicle sources to the annual average total NO<sub>x</sub> concentration. Source attribution was carried out for eight vehicle categories:
- Articulated (Artic.) HGV
  - Rigid HGV
  - Buses/Coaches
  - LGV
  - Taxi (As Classified by the DVLA)
  - Diesel Cars
  - Petrol Cars
  - Motorcycles

Figure 7 and Figure 8 below highlight the road links in the model where contributions to annual average total NO<sub>x</sub> are greater than 40% for Bus/Coach and Cars (Diesel & Petrol), respectively. Many road links within the city centre

AQMA have Bus/Coach contributions greater than 40% (max. 86%). Fewer road links in the city centre AQMA have Car contributions greater than 40% (max 55%).

Figure 7: Road Links where the Contribution from Buses and Coaches to Annual Average Total NO<sub>x</sub> is Between 40 and 86%. Highlighted in Black.

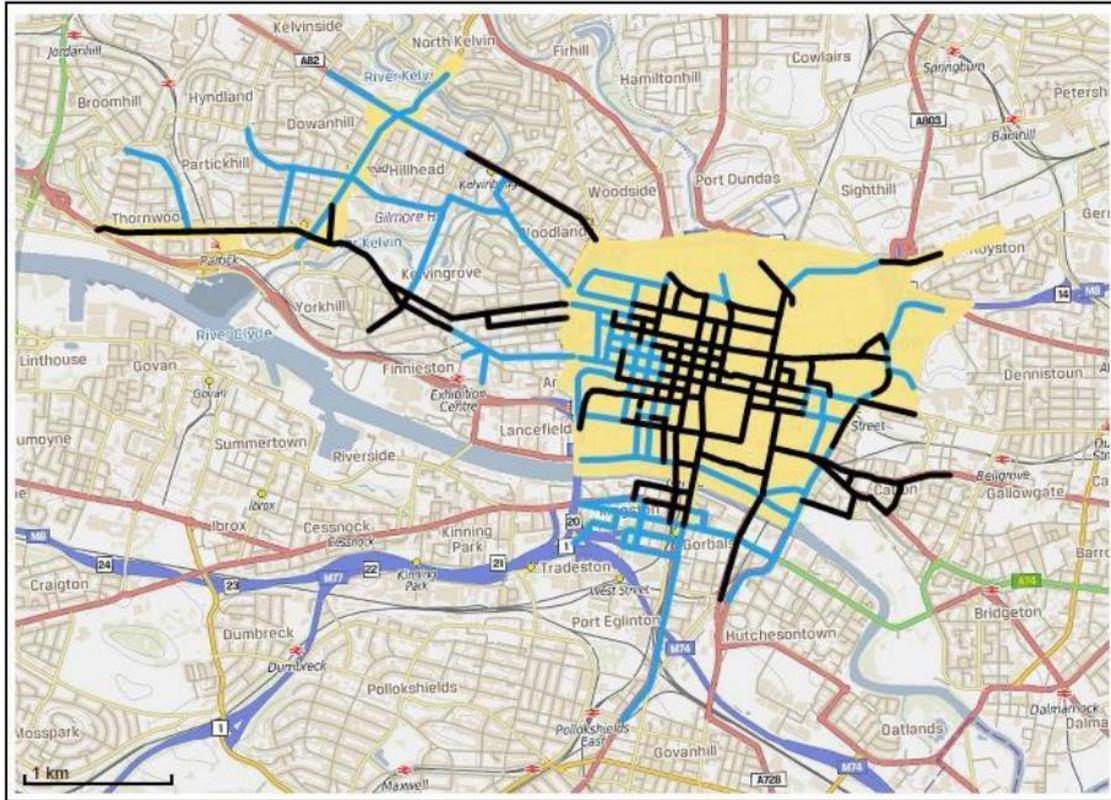
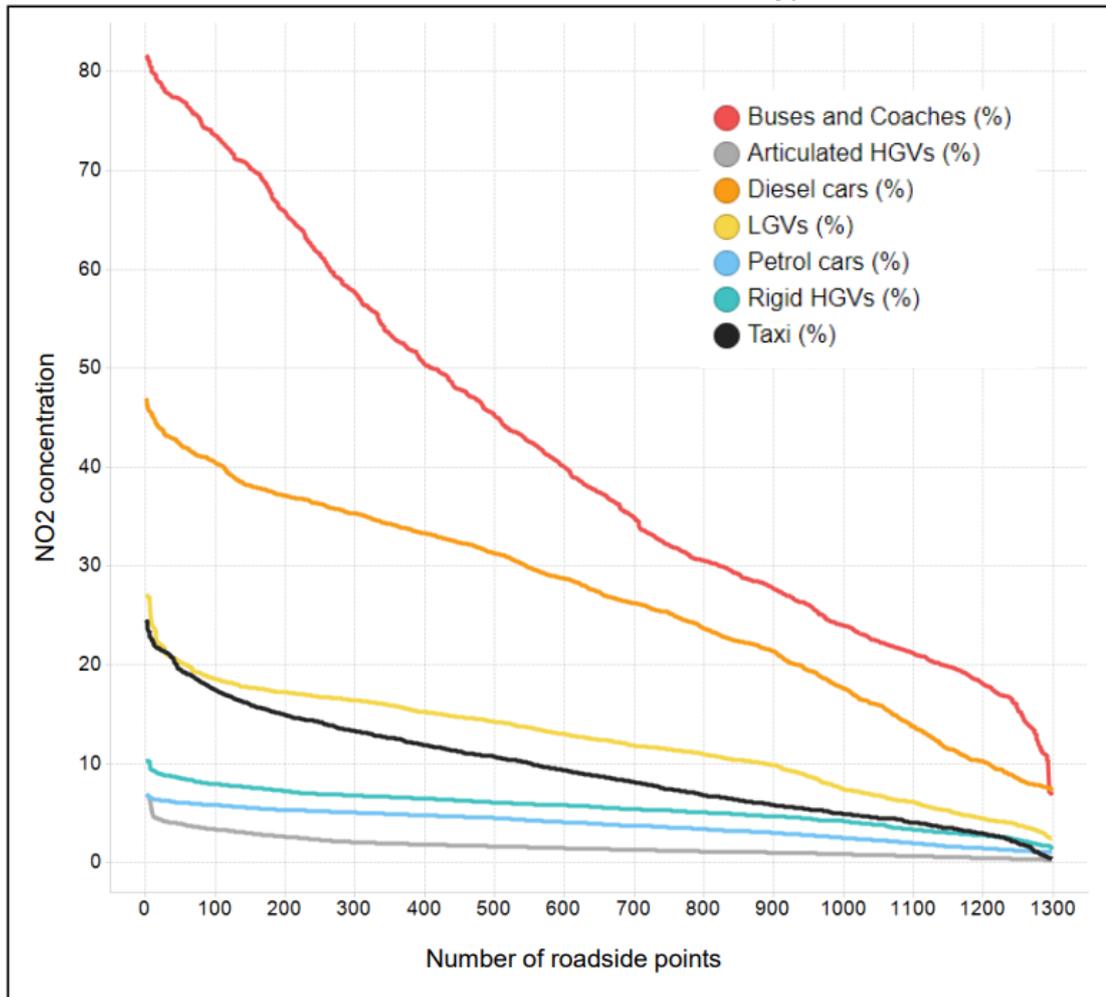




Figure 9: Distribution of the Percentage of Annual Average Total NO<sub>x</sub> at AQMA Source Attribution Roadside Points for Each Vehicle Type.



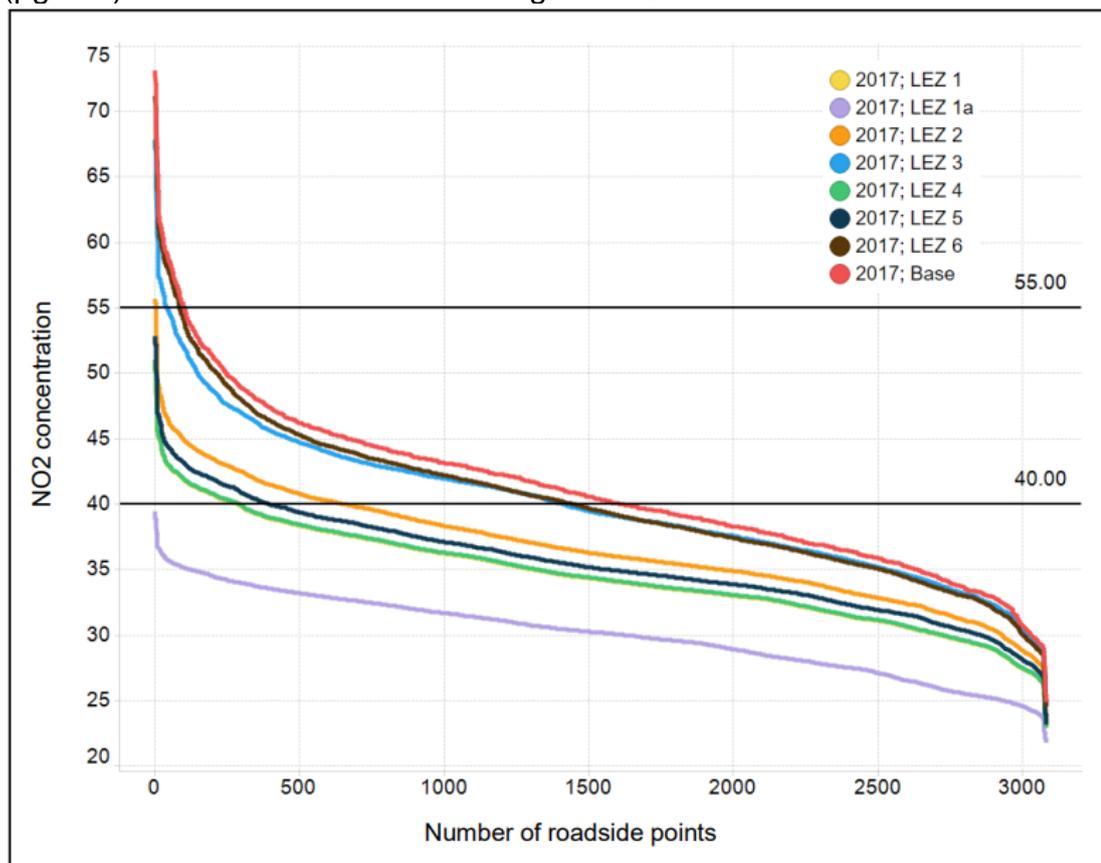
The source apportionment modelling resulted in the following conclusions:

- Buses and Coaches, Diesel Cars and LGV's are significant sources of NO<sub>x</sub> in Glasgow.
- Non-Bus Commercial vehicles (LGV's, Rigid HGV's, Taxis, and Artic. HGV's) contribute a similar amount of NO<sub>x</sub> to Diesel and Petrol Cars. There are far fewer Non-Bus Commercial vehicles than Cars.
- Within the AQMAs Buses and Coaches are the dominant source of NO<sub>x</sub>. They are therefore likely to be the biggest contributor to the roadside NO<sub>2</sub> issues in this area.
- Diesel Cars play a large role in roadside NO<sub>x</sub> issues outside of the AQMAs, where they are often the dominant source of NO<sub>x</sub>. They are therefore likely to play a large role in the roadside NO<sub>2</sub> issues in this area.

7.7 Basic LEZ scenarios were run within the model to predict changes where the vehicle fleet has been adjusted in some way to reflect a reduction in emissions. Seven scenario groupings were chosen to represent large changes to the vehicle fleet. These groupings were run for different years to generate a total of 15 scenarios. They were intended to indicate the scale of improvement that may be possible if an LEZ was introduced to affect certain vehicle classes.

- LEZ1: All vehicles are brand new Euro 6 class. None are any better than standard Euro 6; such as Euro 6c/d or Hybrid.
- LEZ1a: All vehicles are the best Euro 6 class they can possibly be, including new Euro 6c and 6d. This is an extremely optimistic scenario where almost all Euro 6 vehicles in Glasgow would be brand new.
- LEZ2: All buses are changed to Euro 6 but the rest of vehicle fleet remains unchanged.
- LEZ3: Older buses are changed to Euro 5 but the rest of the fleet remains unchanged. A proportion of Euro 6 buses is included as these are already in the fleet.
- LEZ4: Similar to LEZ1 but older petrol cars have not been changed to Euro 6 (or better), they have only been changed to Euro 4. Existing Euro 6 petrol cars are included.
- LEZ5: Cars remain unchanged but all other vehicles are upgraded to Euro 6. This is equivalent to upgrading the Non-Bus Commercial Vehicles and Buses and Coaches.
- LEZ6: Cars are upgraded to Euro 6 but all other vehicles remain unchanged.

Figure 10: Distribution Of Central AQMA Roadside Point Annual Average NO<sub>2</sub> (µg/m<sup>3</sup>) for Various Emissions Changes to 2017 Base Run



7.8 The SEPA report [Air Quality Evidence Report - Glasgow](#) concluded that an LEZ based on the city centre AQMA would appear to be the highest priority with bus emissions in the city centre being the major source of air pollution. An LEZ which prioritised improvements in bus emissions would produce benefits which extended to outside the AQMA. The evidence presented from this modelling

was used to establish phase 1 of Glasgow's LEZ which required a rolling improvement in the emissions standard of the city's bus fleet. It also established that a bus only LEZ would not provide the emissions reduction required to achieve compliance with the air quality objectives at all locations and set the parameters for future analysis into phase 2 of the LEZ, expanded to include other vehicle types.

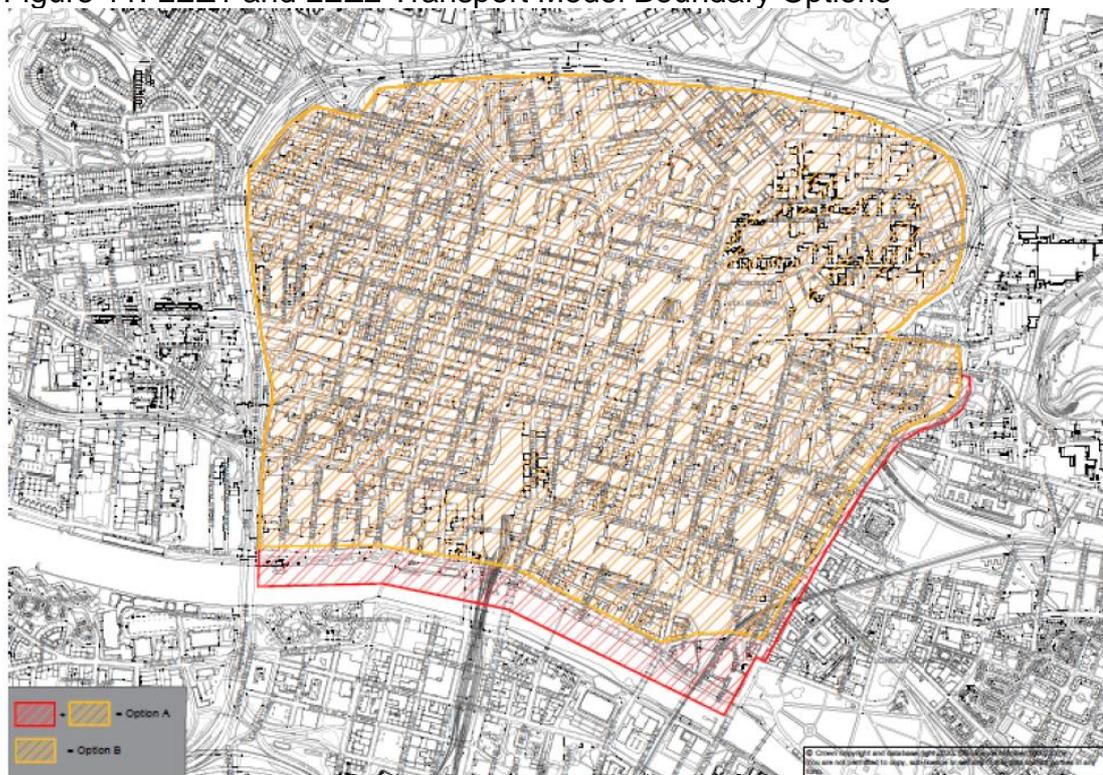
The LEZ scenario testing and source apportionment made it clear that all vehicle types would have to be included in a phase 2 LEZ if the air quality objectives were to be met in a reasonable timescale. It was also determined that, due to the scale of the exceedances of the objectives, phase 2 of the LEZ would be best introduced to coincide with when the bus fleet would be required to be fully compliant – 31<sup>st</sup> December 2022. This allowed a period of over four years for engagement with stakeholders and the public to help determine the practicalities of the LEZ scheme and to allow sufficient time for preparation.

- 7.9 The initial modelling had demonstrated that the City Centre AQMA was well designed in that it contained most of the predicted locations for roadside exceedances of the objectives. For a combination of practical reasons due to the city centre acting as a hub for bus routes serving the city and wider region, and due to the predicted impacts on areas of poor air quality, the City Centre AQMA formed the basis for the area covered by phase 1 of the LEZ. It also formed the core of the two options for phase 2 of the LEZ taken forward to detailed transport modelling, as recommended in the initial modelling report.

Systra were commissioned by GCC to update the Glasgow City Centre Paramics Discovery Model, supported by the Strathclyde Regional Transport Model (SRTM) and use these models to test two proposed LEZ boundaries. The [Systra report – GCC LEZ Traffic Modelling](#) is available on the LEZ website.

The boundary options taken forward, LEZ1 and LEZ2, cover a similar area of Glasgow city centre broadly bounded by the M8, Broomielaw and High Street. The difference between the two proposals is that High Street and Broomielaw are within the LEZ boundary for LEZ1 and outside the boundary for LEZ2. The LEZ2 option retained the potential for these roads to be used by non-compliant vehicles to bypass the LEZ.

Figure 11: LEZ1 and LEZ2 Transport Model Boundary Options



- 7.10 The modelling required for the two proposed LEZ boundaries had two objectives:
- To understand the impacts of displaced vehicles on traffic conditions within the city centre and wider area
  - To provide traffic flows for the city centre reflecting the proposed LEZ boundaries for input to the city centre air quality model

The basic assumptions agreed for the testing were as noted below:

- Operation of the LEZ to be considered for the first year of full enforcement
- All vehicles making trips starting and/or ending within the LEZ boundary are assumed to become compliant (non-compliant vehicles assumed to either become compliant, or be replaced by an equivalent compliant trip)
- All non-compliant vehicles assumed to adhere to the LEZ boundary, and re-route accordingly

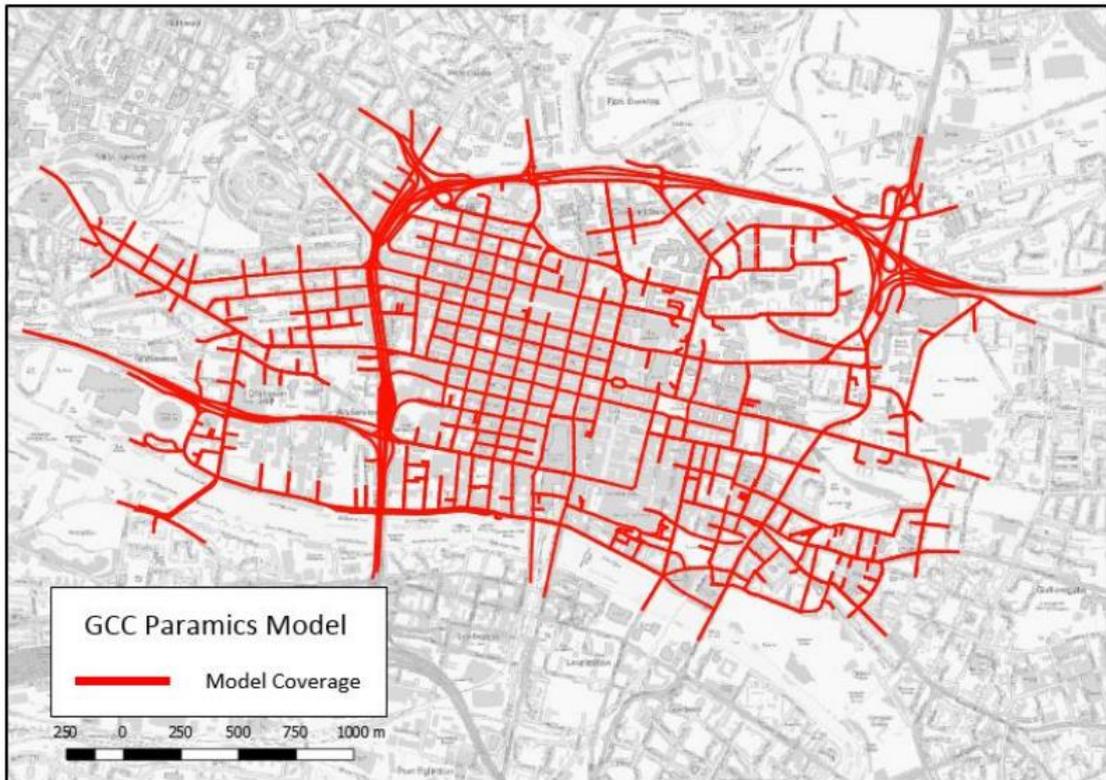
The LEZ proposals were tested using two differing vehicle fleet assumptions representing a likely best and worst case in terms of compliance levels. The fleet assumptions were provided by the Scottish Environmental Protection Agency (SEPA). Forecast fleets for 2020 and 2023 were provided, based on the latest available National Atmospheric Emissions Inventory dataset. The relative compliance rates by vehicle types used in the modelling are shown in Table 2 below:

Table 2: Vehicle Type Compliance Splits for 2020 and 2023

Vehicle Type	2020 Overall Compliance %	2023 Overall Compliance %
Car	79.6%	89.3%
LGV	64.4%	81.9%
HGV	96.1%	98.8%

- 7.11 The Glasgow City Centre Paramics Model is a microsimulation model, the coverage of which is shown in Figure 12 below:

Figure 12: Paramics Model Coverage



- 7.12 The modelling report considered the impact of the LEZ boundary options on through-trips, vehicle displacement, average speeds, journey times and traffic flows. The results showed some local variation in journey times for areas around the LEZ boundaries but little overall effect on the operation of the model area as a whole with the LEZ proposals in place. Based on the assumptions used in the testing, the LEZ proposals had little overall effect on traffic operation in either the wider Glasgow area or in the City Centre.

The model outputs were supplied in a format compatible with input into the SEPA air quality model for further consideration of the LEZ options.

With little practical difference between transport model outputs from the two LEZ options, the larger of the two options was taken forward as the preferred option due to its better performance in terms of improving air pollution at locations on the periphery where objectives are being, or are close to being, exceeded. It is also the option which allows for fewer and clearer signage

options as well as being the option preferred by most respondents in the initial consultation (see section 8.6).

- 7.13 The COVID-19 pandemic restrictions introduced added uncertainty with regard to traffic levels and transport behaviour in the short to medium term. Transport Scotland commissioned research to better understand these uncertainties and how policies to address these could interface with LEZ proposals. The resulting report was published as the [LEZ Post-Covid Uncertainty Summary Note](#). Four plausible futures were identified, reflecting varying degrees of economic recovery and the permanency of changes initiated by the pandemic. This process demonstrated that the impact of the Low Emission Zones will vary between each city depending on their specific traffic levels and fleet composition. But importantly, the LEZ will protect the city centres by preventing non-compliant vehicles from entering them. The report recommended that each city should consider modelling alternative scenarios and set out potential sensitivity test scenarios that could be considered by each of the four cities.
- 7.14 The Systra report, [Glasgow City Centre LEZ Testing Covid Measures](#), was produced, applying appropriate sensitivity tests to the LEZ transport modelling. These sensitivity tests were applied to the option 1 LEZ as previously detailed, since this had emerged as the preferred option through the modelling and consultation process.

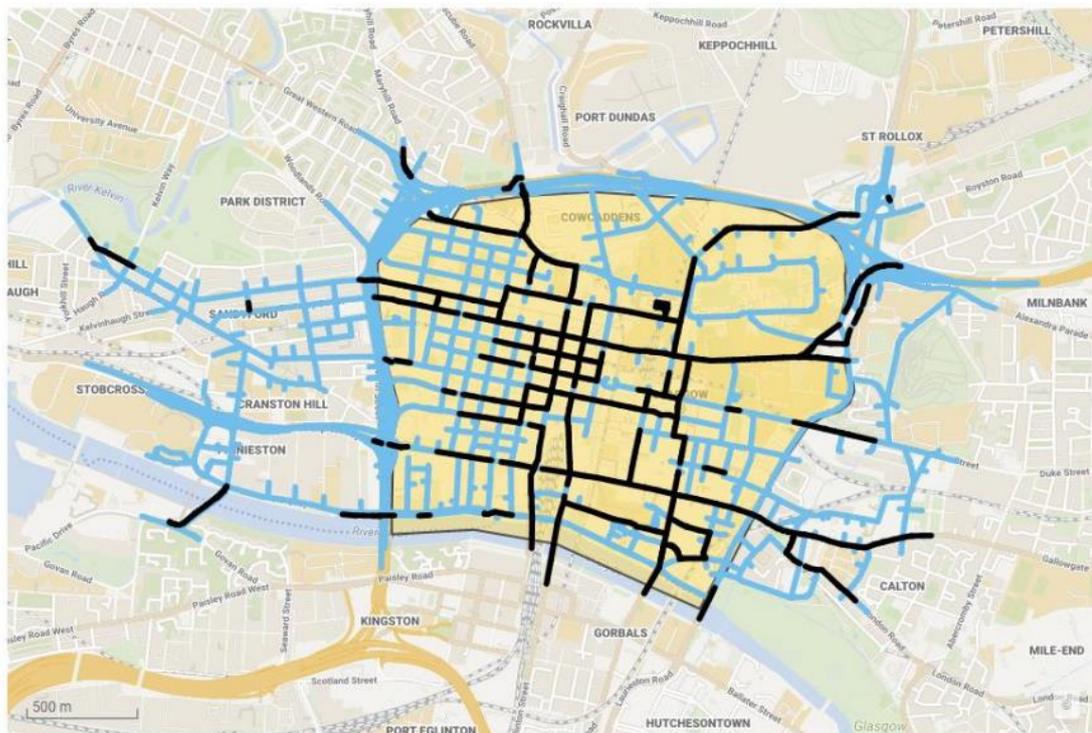
The sensitivity tests looked at reduced demand and a relatively simplistic approach was adopted, which considered the council's aspirations for city centre demand reductions of 30% by 2030. It was agreed that a reduction of 10% seemed reasonable to reflect a reduced demand scenario for 2022 incorporating Covid recovery uncertainty. The "Spaces for People" programme delivered across the city centre during the pandemic, which utilises road space to provide extra space for pedestrians and cyclists, was also incorporated. These measures were added to the existing 2022 reference case to form the network for the sensitivity test. The intention to make these permanent where appropriate has ensured the uncertainty modelled in this report is a more accurate reflection of city centre conditions in the future scenarios.

- 7.15 The modelling conclusions were similar to those of the previous traffic modelling report with some variation, mostly relating to the addition of spaces for people provision. This included increased queueing along Broomielaw for vehicles heading Westbound and more rerouting and therefore queueing around George Square. The closures in George Square generated more queueing along Ingram Street, George Street, Cathedral Street and West Nile Street. This queueing was slightly mitigated by the optimisation of signals south of George Square (at South Fredrick St and at Glassford St) and the signals at West Nile St/Killermont Street. The results showed similar average speeds across the models with slight local variation around the boundaries. Comparing with the original test scenarios, network wide speeds and key journey times were generally improved with the reduction of traffic, however in some locations, as noted above, the spaces for people measures result in a worsening of journey times even under this reduced demand level.

As with the previous modelling, the model outputs were supplied in a format compatible with input into the SEPA air quality model for further consideration of the LEZ options.

- 7.16 Following a cyber-attack that significantly impacted SEPA's internal IT systems in late 2020, full dispersion modelling of the preferred LEZ option was not available in early 2021. An alternative interim approach for carrying out the modelling of proposed LEZs across Scotland was agreed at the LEZ Leadership Group meeting held on the 3rd of February 2021. This approach focused on identifying changes to traffic emissions inside and outside the LEZ boundary. Analysis of emissions based on traffic model outputs was undertaken by SEPA using EMIT software and reported within the [Glasgow LEZ Emissions Analysis Report](#).
- 7.17 Analysis of the preferred LEZ option showed that on key bus routes inside the LEZ there is a significant reduction in NO<sub>x</sub> emissions. For example, on Hope Street and Union/Renfield Street there is a predicted reduction of between 45 and 80% (average of approx. 70%). On the roads highlighted in black in Figure 13 below there is a reduction in total NO<sub>x</sub> emissions of over 60%.

Figure 13: Areas highlighted in black are predicted to see on average a 60% reduction in NO<sub>x</sub> emissions.

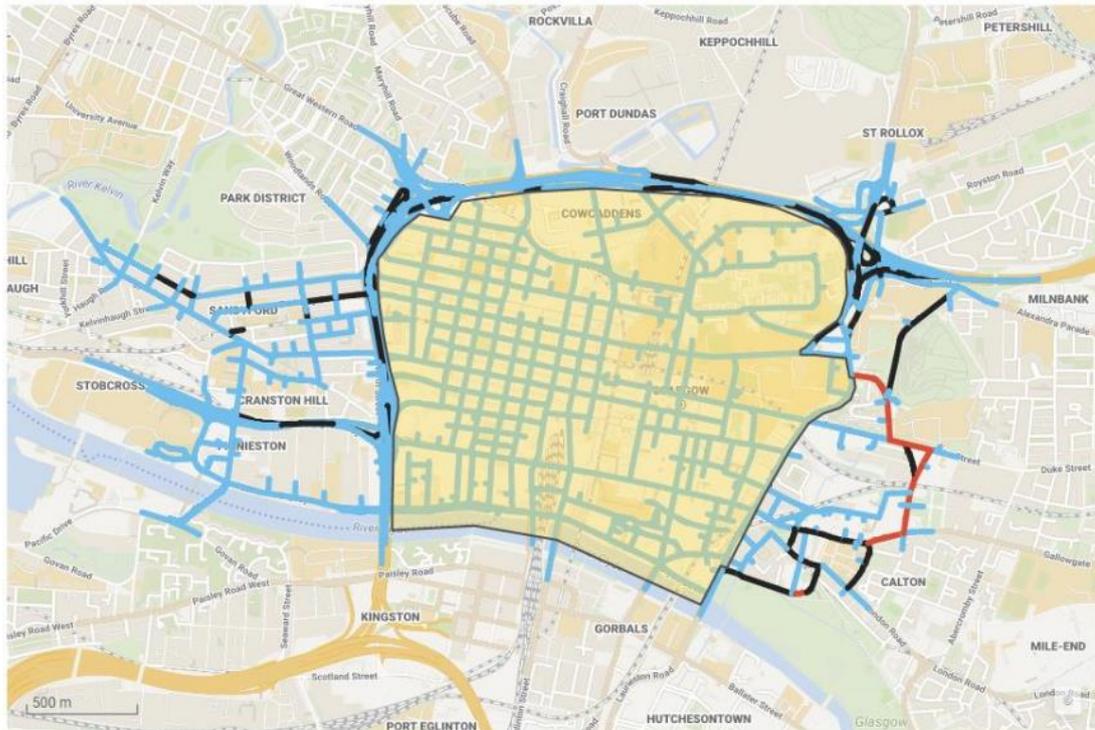


The routes with the highest reduction in NO<sub>x</sub> emissions are mostly key bus routes within the city centre which coincide with high pollutant concentrations and exceedances of the NO<sub>2</sub> annual limit value.

There is an increase in car flow around the edge of the LEZ when compared against the Reference case. On the roads highlighted in black in Figure 14 below there is an increase of over 100 cars per day, and on the roads

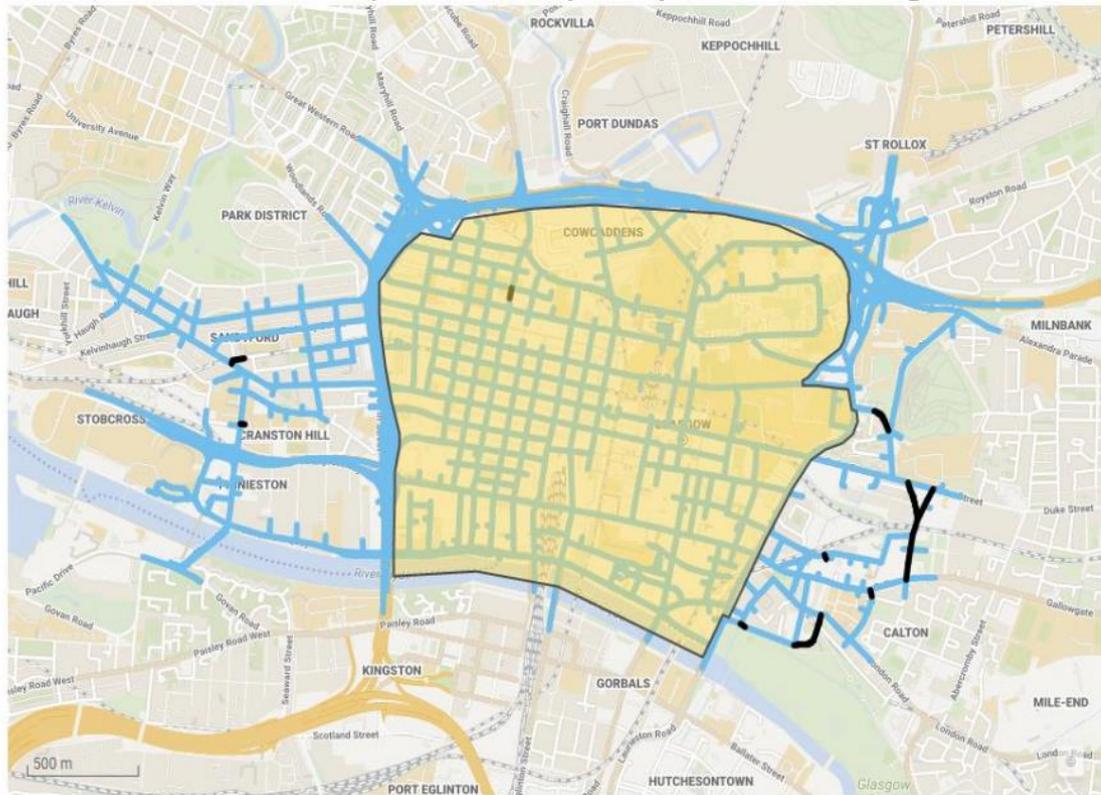
highlighted in red there is an increase of between 500 and 1200 cars per day. The roads highlighted red also see an increase, on average, of 340 LGVs per day. There is a very small increase (average of 3) in the number of Rigid HGVs on these roads highlighted in red.

Figure 14: Areas highlighted in black and red are predicted to see an increase in traffic flow due to displacement of journeys around the edge of the LEZ.



The area of the model that sees an increase in traffic flow corresponds with a small number of roads that are predicted to see an overall increase in emissions of  $\text{NO}_x$ , due to the implementation of the LEZ. These are highlighted in black in Figure 15 below, and see an average increase in  $\text{NO}_x$  of 14%, with a maximum increase of 40%.

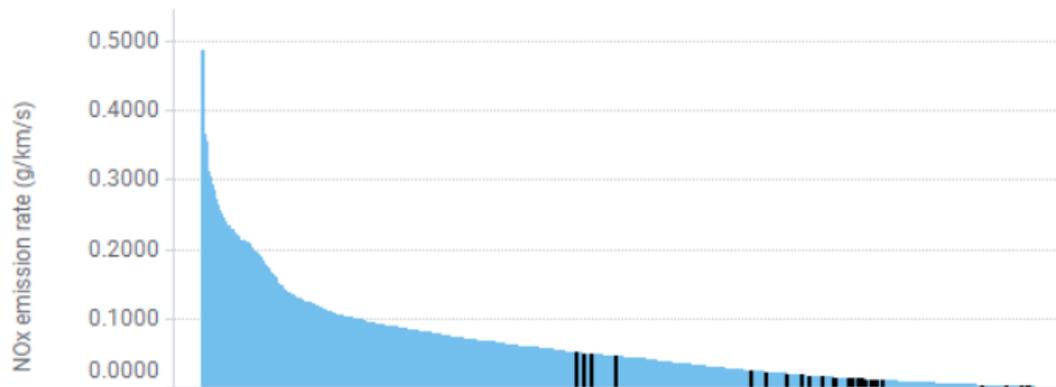
Figure 15: Areas highlighted in black are predicted to see an overall increase in NO<sub>x</sub> emissions due to displacement of journeys around the edge of the LEZ.



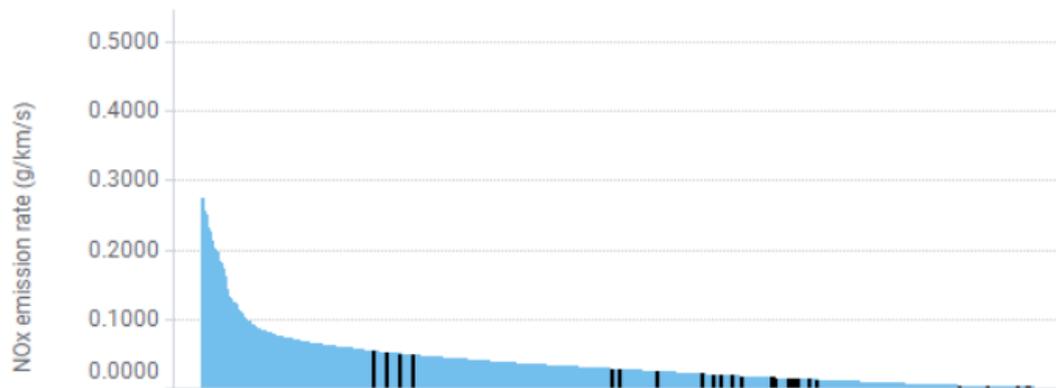
The roads highlighted in black in Figure 15 above are those that see an overall increase in NO<sub>x</sub> emissions following the implementation of the LEZ. Most of these roads have low rates of emission and some of the links with relatively higher emissions represent very short sections of road. Figure 16 below shows the overall reduction in NO<sub>x</sub> emissions from all road links and demonstrates the relative increase from those roads marked as experiencing a rise in emissions.

Figure 16: NO<sub>x</sub> emission rates on all roads in the traffic model for the Reference and LEZ scenarios

Ranked NO<sub>x</sub> emission rates for all roads: Reference case



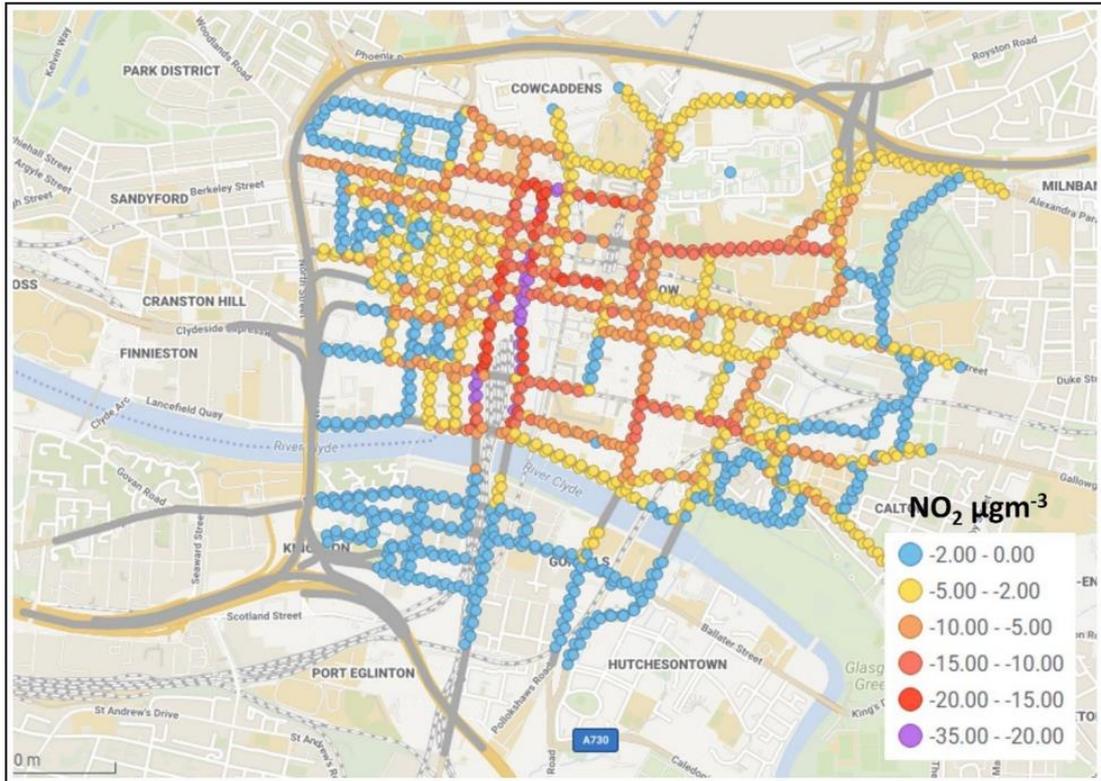
Ranked NO<sub>x</sub> emission rates for roads: LEZ case



- 7.18 The main points to note from the Glasgow LEZ Emissions Analysis Report are:
- The highest concentrations of annual-average NO<sub>2</sub> within the city centre occur along roads dominated by bus emissions. Diesel car emissions dominate other key routes in and out of the City Centre.
  - Implementation of the proposed LEZ will reduce NO<sub>x</sub> emissions within the city centre where vehicles are required to meet strict exhaust emission standards. The highest level of reduction will occur on key bus routes inside the LEZ boundary.
  - The LEZ will result in some displacement of non-compliant vehicles, with an increase in the numbers of cars on roads east of Saltmarket and High Street. Some of these roads are predicted to experience an increase in NO<sub>x</sub> emissions with an average increase of 14%.
  - The next steps will focus on areas of the city that see an increase in vehicle emissions by developing the air-quality model to predict changes in roadside concentrations.
- 7.19 Once SEPA were able access to the Glasgow Air Quality Model following recovery from the cyber-attack in late 2020, analysis of the impact on NO<sub>2</sub> levels was able to be undertaken, with the results reported in the [Low Emission Zone – Glasgow Evidence Report](#) published in September 2021. This report identified

that the air quality modelling results indicate that local concentrations of NO<sub>2</sub> within the LEZ area will be reduced by the proposed LEZ as shown in Figure 17 below.

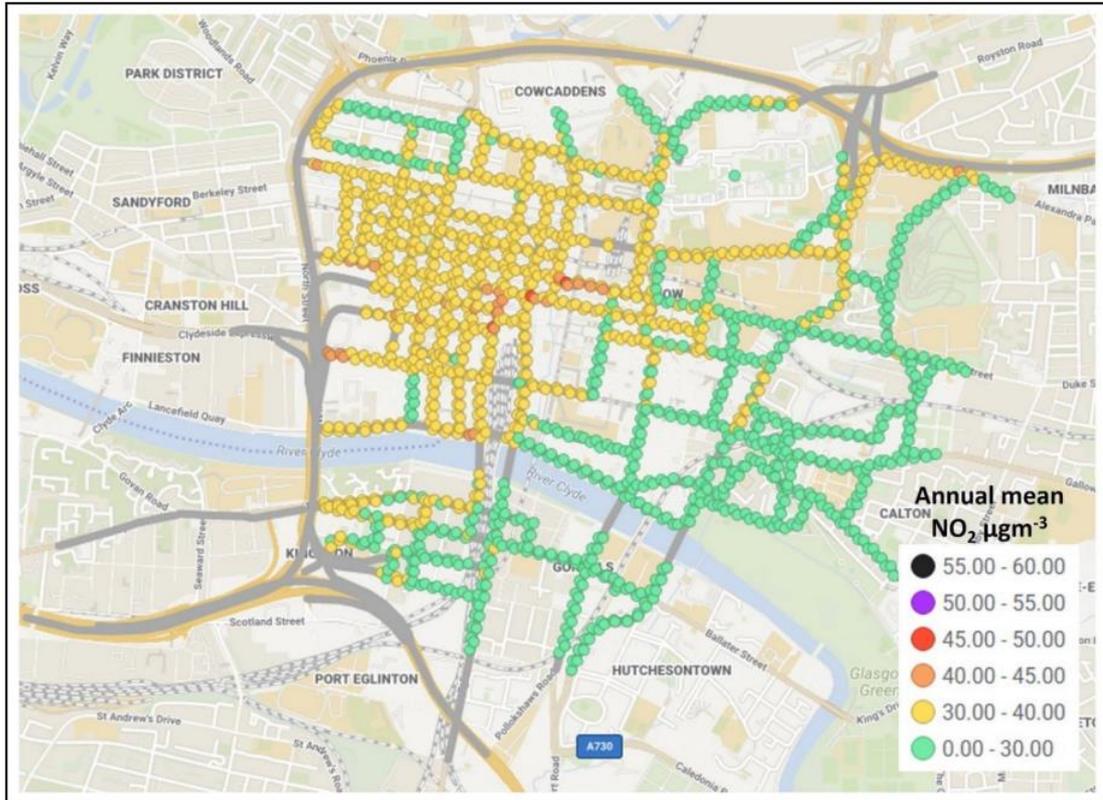
Figure 17: Predicted changes in annual mean NO<sub>2</sub> due to implementation of the LEZ



In line with changes to emissions described previously, significant reductions to roadside NO<sub>2</sub> are focused along major bus routes inside the LEZ. There is a widespread reduction of between 15 and 20 µg/m<sup>3</sup>, with a peak reduction inside the LEZ of 30 µg/m<sup>3</sup>.

Figure 18 below shows predicted NO<sub>2</sub> concentrations for the LEZ case. This confirms that following large reductions of NO<sub>2</sub> inside the LEZ almost all predicted exceedances are removed. Some isolated exceedances remain on key bus routes and near junctions. This is consistent with previous analyses that found that converting all vehicles to EURO 6/VI would remove most, but not all, city centre exceedances.

Figure 18: Predicted roadside concentrations of NO<sub>2</sub> for the LEZ case.

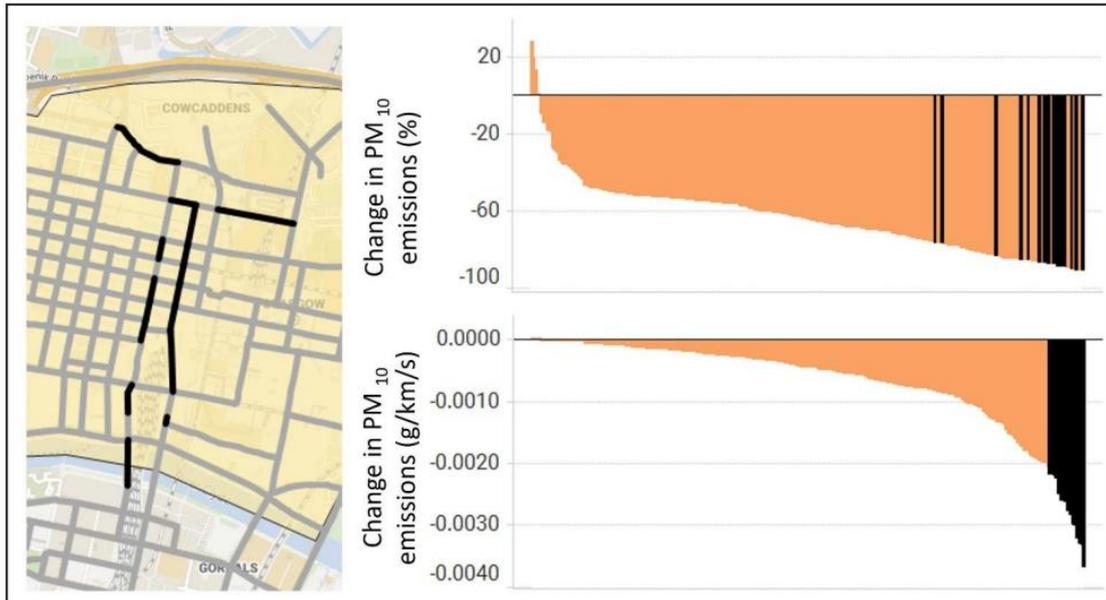


- 7.20 As shown in the previous section on road emissions there are small sections of road to the east of High Street that experience an overall increase in emissions. However, these localised increases are very small when compared to the much larger decrease in emissions that occur on all surrounding roads. Concentration data shows that roads which experience an increase in NO<sub>x</sub> emissions do not experience an increase in roadside NO<sub>2</sub> concentrations. This is because the roadside NO<sub>2</sub> concentrations are determined by changes to emissions on the immediate, as well as neighbouring, roads. In these instances, a small local increase has been outweighed by significantly larger decreases on surrounding roads.
- 7.21 The predicted change in PM<sub>10</sub> emissions due to implementing the LEZ have been explored by comparing calculations of vehicle tailpipe emissions between the Reference and LEZ cases. However, these emissions have not been used to predict concentrations of PM<sub>10</sub>. Roadside concentrations of PM<sub>10</sub> are dominated by non-tailpipe emissions, including brake and tyre-wear and re-suspension from the road surface. It is difficult to quantify the rates of these 'non-tailpipe' emissions and therefore model predictions of PM<sub>10</sub> concentrations would be associated with high levels of uncertainty. The main aim of the LEZ was to accelerate compliance with AQ objectives, achieved by reducing vehicle tailpipe emissions. Therefore, as part of the assessment of the LEZ, the focus was on reducing tailpipe emissions of PM<sub>10</sub>.

There are widespread large reductions in PM<sub>10</sub> tailpipe emissions as a result of implementing the LEZ. The largest reductions occur inside the LEZ, as shown by the roads highlighted black in Figure 19. It should be noted that this scale of

reduction is greater than would be expected to occur in PM<sub>10</sub> concentration data, due to the contribution of non-tailpipe emissions.

Figure 19: Ranked changed in PM<sub>10</sub> emissions on all roads. The greatest reductions occur inside on key bus routes inside the LEZ as highlighted in black.



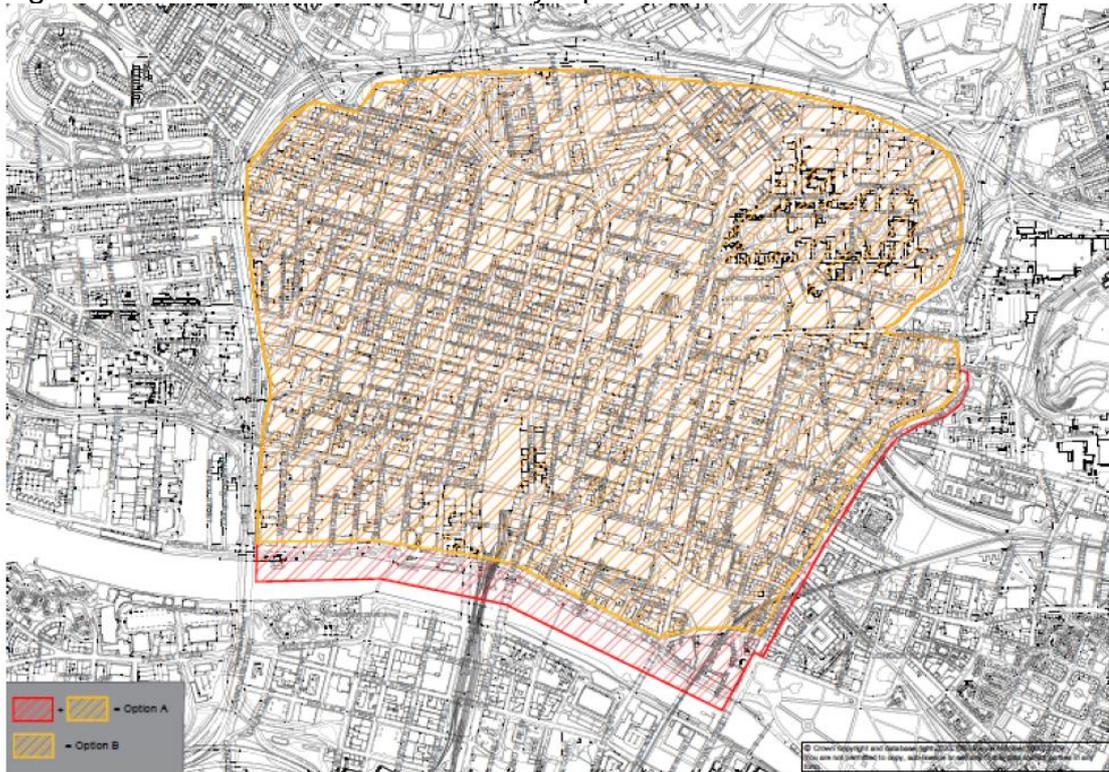
## 8 Consultation, Engagement and Stakeholder Input

- 8.1 An extensive campaign of general LEZ awareness has been underway since 2018, across a variety of online and offline platforms, with paid-for advertising extending the Council's communication reach further. Communication methods used include social media, webpages, news features, digital adverts with local news outlets, outdoor adverts (including at supermarkets, fuel stations and on buses/bus shelters) radio campaigns, podcasts, media releases, webinars, workshops, seminars, in-person events and attendance at third party events, Clean Air Day activities (including electric taxi information sessions), two separate consultations and direct mail to zone residents. A detailed LEZ engagement activity log is available in **Appendix C**.
- 8.2 Extensive engagement with stakeholders has included meetings, presentations and correspondence with a variety of groups. This has included, but is not limited to – national health organisations and charities, environmental organisations and charities, vehicle retail and leasing / franchising organisations, public transport providers (rail, bus, taxi, community transport groups), Road Haulage Association, transport press, business organisations (individual businesses and Glasgow Chamber of Commerce, Business Resilience Council, Federation of Small Businesses etc.), local schools / universities, community councils and the general public.
- 8.3 Following completion of the initial LEZ options appraisal by SEPA, approval was received from the ESCR Committee to undertake an online survey and run

stakeholder engagement on the LEZ options. GCC invited comment on two proposed boundary options, emission standards, vehicle types, grace periods and any unintended consequences. While opinions were sought on areas within the purview of GCC such as LEZ boundary, grace periods, vehicle types and time limited exemptions; opinions were also sought on those elements of the LEZ defined by legislation and regulations to obtain an overview of public and stakeholder opinion on all elements of the LEZ.

- 8.4 Consultation took place in early 2020 with the online questionnaire open between 17th February and 29th March 2020. The online questionnaire was supplemented with workshops held with a range of stakeholders, including Community Councils, neighbouring local authorities, transport operators and groups with an interest in health, equalities and the environment. A general workshop was held at the Glasgow Royal Concert Hall on 10<sup>th</sup> March 2020. The consultation and workshops were promoted through a range of methods including social media promotion, radio advertising and direct contact with stakeholders.
- 8.5 The consultation received 973 valid responses via the online questionnaire with further submissions received via email. Key stakeholders were also invited to submit a formal written response on their views on the LEZ proposals. These were analysed and subject to a report by independent consultants.
- 8.6 Responses were generally supportive of the use of LEZs to improve air quality with 68% supporting them in principle. This was backed by 62% of respondents who supported the principle of an LEZ in Glasgow. Those respondents who did not support a Glasgow LEZ generally cited issues such as inadequate public transport, adverse effects on business and individuals and number of vehicles remaining on the road as their main reasons for doing so. Of the two alternative boundary options presented for the Glasgow LEZ phase 2, Option A, the slightly larger of the two (and encompassing High St, Clyde St and the Broomielaw) was the most popular although neither option achieved majority support. Option A received 37% support, and Option B received 21% support.

Figure 20: LEZ Consultation Boundary Options



8.7 Respondents provided a generally favourable view on the proposed emission standards and vehicle categories, 43% agreeing against 36% disagreeing. Those who disagreed cited thoughts on the emissions standards not being sufficiently stringent, differing thoughts on specific vehicle types/ categories to be included, potential financial hardship, or being opposed to the LEZ in principle. Responses regarding the proposed grace periods for enforcement of the LEZ were mixed. For buses around a third of responses agreed this was 'about right', with another quarter stating 'too long'. For all other vehicles and resident's vehicles the grace period was considered 'too short' at 33% and 34% respectively, with around a quarter for each citing 'about right'. Business owners were most likely to state 'too short' for all categories.

8.8 National exemptions were generally supported by respondents with 66% of those surveyed preferring to see emergency vehicles exempt and nearly 50% wishing to see vehicles for disabled persons exempt from the LEZ.

The four most favoured categories for time limited exemptions were:

- community transport vehicles (37%)
- accident/breakdown recovery vehicles (33%)
- refuse collection vehicles (31%)
- hearses (31%)

Following this, the next most frequently mentioned are:

- out of hours shift workers (24%)
- specialist vehicles (24%)
- health service vehicles (24%)

- low frequency travel vehicles (23%)
- wedding vehicles (21%)

8.9 An important element of this consultation was to gauge public opinion on the LEZ as a catalyst for behaviour change and modal shift. Respondents were asked what, if anything, they would do differently as a result of the proposed LEZ. Responses included:

- A quarter of respondents say their vehicle would comply, so would do nothing.
- Business owners' most frequently mentioned using taxis/private hire cars more, with 22% stating this.

Otherwise residents mentioned they would walk more (28%)

- Those who work, study or visit the city centre for leisure would use public transport more (18%, 32% and 25% respectively).

8.10 The end of the online public consultation coincided with the first Covid-19 lockdown. Some stakeholder groups, notably the Glasgow Chamber of Commerce, declined to comment on behalf of members, stating their entire focus was on the developing Covid-19 emergency and lockdown implications at that time. Engagement continued with these groups with a future period of statutory public consultation on the final LEZ scheme presented as a further opportunity to express their views.

8.11 The full report on the initial consultation can be viewed as [Appendix A](#) of the report to Committee on 6<sup>th</sup> Oct 2020.

8.12 Combined with further modelling outcomes, including detailed transport modelling, the outcomes of this initial engagement helped inform the identification of a preferred LEZ option. This option was subsequently agreed by GCC's ESCR Committee in June 2021 and permission received to take the preferred LEZ scheme design to statutory consultation.

8.13 This statutory consultation invited comment from a range of statutory and non-statutory consultees, including the general public and city centre users. Statutory consultees, as set out in the Low Emission Zones (Scotland) Regulations 2021, and draft LEZ Guidance, include:

- i. The Scottish Environment Protection Agency;
- ii. Scottish Natural Heritage;
- iii. Historic Environment Scotland;
- iv. such persons as the authority considers represent the interests of—
  - o the road haulage industry, o the bus and coach industry,
  - o the taxi and private hire car industry o local businesses, and drivers, likely to be affected by the proposal,
  - o such other persons as the authority considers appropriate
  - o Local authorities neighbouring the authority that is delivering the scheme
  - o Regional Transport Partnerships o NHS (including Health Boards)

8.14 The consultation was heavily promoted through both direct and indirect methods. All statutory consultees were directly contacted via email and invited to comment, as were around 400 representatives of stakeholder organisations

such as industry, charities, trade organisations, community councils and community organisations. This also included others who had previously communicated with Glasgow City Council regarding LEZ engagement. Given the special circumstances which are proposed in terms of residents, all residential addresses within and adjacent to the LEZ were written to, informing them of the scheme and inviting comments. This was sent to ~9000 individual addresses. The consultation was also promoted through various media releases, radio advertising and social media posts, including promoted posts to widen the reach. Neighbouring Local Authorities promoted these posts through their own social media to extend the messaging into the main commuter areas around Glasgow.

8.15 The preferred LEZ scheme design was subject to statutory public consultation between 24th June 2021 and 2nd September 2021. The consultation invited comment on all aspects of the scheme, including those elements which are mandatory under the Transport (Scotland) Act 2019. There were 4,742 responses to the consultation survey; of which 1,801 entries were filtered out as only partially completed and not fully submitted. This therefore left 2,941 valid responses, all of which are included in the analysis. Several written responses were also submitted, mainly from statutory consultees, larger organisations, interest groups, charities and other neighbouring local authorities.

8.16 The main findings for each of these elements are summarised below:

i. Views of LEZs in principle: Overall, views were evenly split on support for LEZs in principle, but with more in favour than opposed (48% vs. 41%). Support and opposition both tended towards similarly strong positions, with 29% strongly supportive and 27% strongly opposed. One in ten (10%) were neutral. Overall support and opposition was broadly similar across age groups.

ii. Views on proposed LEZ boundary: Views on the boundary were split. Over one quarter (28%) agreed with the boundary as depicted on the map, while one in five (21%) said the area covered by the LEZ was too large, and one in ten (11%) said it was too small. Around one third (34%) overall said they do not support a LEZ in Glasgow at all.

iii. Views on emission standards: Significantly more disagreed than agreed with the emission standards overall (49% disagree vs. 37% agree). Strength of disagreement was considerable with 30% strongly disagreeing compared with one in five (19%) selecting 'disagree'. Only 16% agreed strongly, about half as many as strongly disagreed. Over one in ten (14%) were neutral.

iv. Views on exemptions: As with other aspects of the LEZ, views tended to be evenly split in terms of agreement and disagreement. Business owners were especially sceptical, although the small base size for business owners should be borne in mind.

v. Views on grace periods: Overall, more respondents disagreed than agreed with the proposals (45% vs. 38%). Strength of disagreement was again

especially marked (29% strongly disagree vs. 16% disagree) and agreement much milder (13% strongly agree vs. 26% agree), meaning respondents were more than twice as likely to strongly disagree than strongly agree. Sixteen per cent were neutral. Business owners were especially strongly opposed (68% disagreed, 38% strongly). City centre residents tended to be more positive towards the proposed grace periods than those working in the city centre (43% vs. 36% agree). Visitors were similarly well disposed compared to city centre workers (41% agree).

vi. Views on penalty charges: Respondents tended to be strongly opposed to the proposed penalty charges. They were almost twice as likely to disagree with them than agree (57% vs. 31%) and nearly three times as likely to strongly disagree than disagree (42% vs. 15%). As with exemptions and grace periods, business owners and 'other' users were less likely than overall to agree (21% and 22% respectively vs. 31% overall). Those who work in the city centre (61%) were more likely than those living and working in the city centre (49%) and visitors (53%) to disagree.

vii. Overall views on Glasgow's LEZ proposals: Towards the end of the survey, having been shown information about the different aspects of the LEZ, respondents were asked about their overall support or opposition for the proposal. Half (51%) opposed Glasgow's LEZ overall, with opposition tending to be strong: 38% strongly opposed, nearly three times as many as opposed (13%). 42% supported Glasgow's LEZ proposals, with 22% strongly supporting. People with disabilities were less likely to support the LEZ overall than those without disabilities (34% vs. 45% support), and more likely to oppose it (57% vs. 48%). This pattern of lower support amongst people with disabilities runs throughout the consultation findings.

#### 8.17 Consultation revealed several key themes:

i. Disagreement with some proposals. Views on the proposals were mixed, with more tending to disagree than agree with the proposals. Penalty charges in particular elicited some strong disagreement.

ii. The potential impact of the LEZ proposals on people. This was reiterated in open-ended responses throughout the survey, with the impact on people on low incomes of particular concern. There were also worries about the impact on people who travel into the city centre to work, most of whom reported using their car at least once a week to travel to or within the city centre.

iii. Opposition from city workers and business owners. This tended to be strongest amongst those who work in the centre and amongst business owners. It should be noted however that the subsample of business owners was small, with only 34 respondents, so findings should be treated with caution.

iv. Concerns for persons with disabilities. Those with disabilities tended to be more concerned than those without, possibly reflecting some unease around how the LEZ might disproportionately impact them. This could be to do with issues regarding infrastructure, especially ensuring adequate public transport,

which emerged as a general concern in the consultation. It may also be that people with disabilities are more likely to be reliant on their vehicles, so anything that may make that more difficult is likely to cause unease.

v. Large numbers of respondents supported the scheme. It may be that targeting the concerns of particular groups such as city centre workers (who tend to use the city centre most frequently and use their cars to access it), people on low incomes and those with disabilities with more information and reassurance could help with the smooth implementation of the LEZ.

8.18 The consultation resulted in several conclusions and recommendations for future actions. Many of the comments focused on perceived financial impacts arising from the introduction of the LEZ. It is important that the various forms of financial assistance available continue to be publicised appropriately to encourage take up by eligible groups. Some of the comments revealed that information regarding the scope of the LEZ (the proportion of vehicles affected) and the measures required to comply with the LEZ conditions had not been conveyed appropriately. Many respondents were under the impression that either an electric or brand-new vehicle would be required to continue to enter the zone. It is therefore likely that a substantial number of respondents are worrying about compliance unnecessarily. Focused communications will be required to ensure that the requirements of the LEZ are accurately understood and prevent people from potentially incurring unnecessary concern or expense. This is particularly important with regard to the responses from people identifying as disabled. Publicity and communications emphasizing that “blue badge” holders will be exempt from the LEZ, whether in their own, or travelling in another’s vehicle will be an essential element in allaying these concerns. Vehicles registered with a “disabled” or “disabled passengers vehicle” tax class will be also be exempt as will vehicles with a reduced tax class because the vehicle is being used by a person in receipt of personal independence payments. Vehicles used by organisations and subject to an organizational blue badge will also be exempt. Consideration will be given to those aspects of the boundary which elicited comment to ensure an efficient and practical operation of the LEZ boundary.

8.19 On consideration of the consultation feedback, no changes were proposed to those other elements of the scheme which are at the discretion of the Council i.e. local exemptions and grace periods. While some comments requested exemptions for particular groups, these would reduce the effectiveness of the LEZ in achieving the health based air quality objectives. The introduction of the LEZ has already been postponed by five months and an extra year grace period for compliance granted to residents of the zone. Any further delay will extend the period of time where residents and users of the city centre are exposed to harmful levels of air pollution. While some major changes to the boundary were requested in comments, these would cause both practical problems to deliver and result in areas of the city centre continuing to exceed the air quality objectives for an unacceptably longer period of time. Minor changes to the boundary to make decision points and options clearer in practise were enacted following feedback.

- 8.20 The full report on the statutory consultation on the preferred scheme design can be viewed at the following [LINK](#). At the meeting of the ESCR Committee on the 23<sup>rd</sup> November 2021, approval was given for the consultation conclusions and to formally publish the LEZ final scheme design.
- 8.21 The [LEZ final scheme design](#) was formally published on 9<sup>th</sup> December 2021. Legislation and regulations require that a minimum period of 28 days be allowed for the receipt of objections to the proposals. Since this period would include the Christmas and New Year period, six weeks was allocated for the receipt of objections, ending on 20<sup>th</sup> January 2022. In accordance with regulations and guidance, notice of the final scheme design was published in the local press and on-street notices within affected streets. Similar communications channels as utilised for the consultation were used to spread awareness of the scheme publication. Statutory consultees were also informed, as were those previously directly contacted as part of the consultation.
- 8.22 As required under Regulation 4 (4) of the Low Emission Zones (Scotland) Regulations 2021, a report that details (a) the number of objections received, (b) a summary of the general nature of the objections received, and (c) the local authority's response to the objections received was produced following the conclusion of the objection phase. This report is available at the following [LINK](#) and as **Appendix D** of this report.
- 8.23 A total of 134 objections were received by the end of the formal objection period. Of these, 123 were from persons identifying themselves as operators or drivers within the hackney taxi trade with their objections based on the perceived impact on this trade. 49 of the 123 objections followed a template response. One of these objections was a comprehensive statement of reasons received from Unite the Union Glasgow Cab Section with four main grounds for objection. The 11 objections from those not identifying themselves as part of the taxi trade included a variety of grounds for objection with some citing multiple reasons.
- 8.24 Four main themes were identified in respect of taxi related objections. These were:
- Impact of the pandemic – The objection cites the loss of income for the sector due to restrictions during the period of the pandemic. This has restricted the ability to invest in compliant vehicles and is not sufficiently mitigated by the corresponding delay to LEZ enforcement.
  - Compliant vehicle availability – The objection cites the high cost of electric taxis and suitable Euro 6 diesel taxis. It also states that there is limited availability of Euro 5 vehicles to be purchased and then retrofitted to achieve compliance.
  - Net Zero targets – The objection states that exempting taxis from the LEZ for a few years will allow for the market in electric vehicles to mature and become more attractive and cheaper for operators. The objection also states that the adoption of new diesel vehicles, with their expected operational lifespans, will have an adverse impact on EV adoption and therefore upon net zero targets.

- Scottish LEZ enforcement dates – The objection notes the difference in proposed enforcement dates between Glasgow and the other Scottish LEZ cities and states that there must be parity for taxi fleets between the major cities. This part of the objection also makes claims that the emissions impact from the taxi fleet is limited in scope and geographic extent.

Non-taxi objections included the following themes, in rough order of prevalence:

- Adverse impact on those with low incomes.
- Adverse impact on businesses.
- Poor / expensive public transport.
- Electric vehicle cost / infrastructure.
- Penalty charges are too high.
- Pandemic impacts.
- Money making scheme for the Council
- Personal impact.
- Won't produce the required reduction in pollution.

8.25 Each of the above objection themes was considered in detail with a focus on the mitigation and funding available to those affected by the introduction of the LEZ, particularly the taxi sector and those on low incomes. Low emission zones are designed to improve air quality by excluding those vehicles which do not meet the emission standards from areas of high pollution. As an exclusionary policy, their introduction will unavoidably have some degree of impact on affected individuals and groups. Those who would have continued to drive into the zone using a non-compliant vehicle will have to adjust either their method or means of travel.

8.26 Recognising that some people and sectors may find it more difficult to adjust to the introduction of an LEZ, the Scottish Government has made available the LEZ support fund in various forms. This is a targeted and proportionate response, making financial aid available to those least able to adapt to the changes and encouraging the overall aim of a shift from personal vehicle use, particularly within our city centres.

The hackney taxi fleet in Glasgow is unique from other taxi fleets in the country in that it comprises a large number of older, non-compliant vehicles. This results in this sector being a significant contributor to the air quality problems experienced within the zone, particularly in those streets which experience the highest levels of NO<sub>2</sub>. However, the taxi fleet is also an important part of the transport mix within a busy and vibrant city centre, serving workers, residents, tourists and the night time economy. For these reasons, a generous program of support for taxi improvement is a core element of the LEZ support fund. The objections report explored in detail the composition of the taxi fleet, the eligibility of this fleet for support funding or alternative compliance methods and the relative contribution of the fleet to the emissions of NO<sub>x</sub> in the LEZ.

- 8.27 For the above reasons, and the more detailed responses to the particular grounds for objection detailed within the objections report, it was concluded that no further changes be made to the LEZ final scheme design and it be implemented according to the scope and timescale previously published.
- 8.28 Representation continued from representatives of taxi operators following publication of the objections report with concerns around the number of vehicles requiring retrofit and the funding and capacity available for these being expressed. In response, GCC proposed the measures detailed in section 2.5 of this report to give additional comfort to operators that those who had evidenced progress towards compliance through the route detailed would not be disadvantaged by factors outwith their control. This additional mitigation balances the concerns raised by the trade around capacity and funding, whilst not disincentivising operators from making arrangements as quickly as possible to improve air quality in the city.

## 9 Grace Periods

- 9.1 It is the intention of Glasgow City Council to introduce the LEZ on **31<sup>st</sup> May 2022**. Glasgow City Council has committed to improving air quality by enforcing the LEZ at the earliest opportunity and therefore proposes a one year grace period, meaning enforcement of entry restrictions will begin on **1<sup>st</sup> June 2023**.
- 9.2 A further grace period of an additional year is proposed for vehicles registered to **residents within the LEZ**, reflecting their restricted options in respect of choosing to enter the LEZ. Therefore, enforcement of entry restrictions for vehicles which fall within this category will begin on **1<sup>st</sup> June 2024**.

## 10 Wider Considerations

- 10.1 The LEZ proposals were subject to an [Integrated Impact Assessment](#) (IIA) using the NHS Lothian IIA guidance as an effective mechanism for meeting requirements of the NLEF and the Equality Act 2010 (Specific Duties) (Scotland) 2014. The IIA approach is consistent with Transport Scotland's approach to the IIA for the LEZ Regulations. The IIA approach specifically addresses:
- Equality Impact Assessment (Public Sector Equality Duty and Protected Characteristics)
  - The Fairer Scotland Duty (socio-economic disadvantage)
  - Human Rights (taking account of Children's Rights and Wellbeing)
  - Economic Impacts – (focused on socio-economic issues and local business and employment)
  - Environmental impacts (including Strategic Environmental Assessment screening)

- 10.2 The IIA also covers much of the content and detail of a Business and Regulatory Impact Assessment (BRIA) therefore a separate BRIA has not been undertaken. Transport Scotland has undertaken a [BRIA for LEZ regulations](#) across Scotland.

When the LEZ is broadened out to include all vehicles it will require processing of personal data in terms of vehicle ownership and potential exemptions. A data protection strategy will be required to ensure compliance with General Data Protection Regulations and the Data Protection Act.

- 10.3 The IIA found that the LEZ has the potential to cause a range of positive and negative impacts, from improving health of a large spectrum of society to potentially reducing access to the city centre for those who rely on private vehicle transport. The most significant impact of the LEZ will be the improvement in air quality and the resulting health benefits, that will impact residents, visitors, and workers. The LEZ also has a potential further positive health impact through encouraging the use of active travel and public transport for certain trips and changing existing travel behaviours.

Given the focus of the IIA to look at how certain protected groups are potentially differentially affected, there are instances where the LEZ could disproportionately affect some groups in society. For example, those who have a diminished ability to upgrade to a compliant vehicle due to low income (including people on benefits, single parents, or disabled people). Those on lower incomes may experience reduced access to locations and in turn the goods, services, or employment opportunities available to them. However, it should be noted that people with lower income are less likely to own a car and that Glasgow has a higher share of population without access to a car compared to the Scottish average.

Community transport providers rely on cars and minibuses that may be subject to a LEZ, therefore the services they provide to a range of protected groups (e.g. those receiving care) may be affected. Mitigation can reduce these potential impacts. For example, the LEZ Mobility Fund, retrofitting schemes, and exemptions outlined in the LEZ regulations all look to reduce any negative impacts of the LEZ scheme. The proposed 2 year grace period for residents of the LEZ will also mitigate the impacts, allowing additional time for residents to comply with LEZ requirements. This extended grace period takes account of residents restricted options on whether to enter the LEZ.

- 10.4 Strategic Environmental Assessment (SEA) is legislated through the Environmental Assessment (Scotland) Act 2005 and is a means to assess the likely impact of a public plan on the environment and to seek ways to minimise that effect if it is likely to be significant. Under the Act all public bodies are required to undertake an SEA of a plan if it is likely to have significant environmental effects. This includes both positive and negative effects. After consideration against the criteria set out in Schedule 2 of the Act it was the opinion expressed within the IIA that the LEZ can be exempted from Strategic

Environmental Assessment as its implementation is unlikely to have significant environmental impacts. This was primarily due to the following:

- The LEZ is not required under Section 5(3) of the Environmental Assessment (Scotland) Act and it has been prepared as a response to the Scottish Government’s Programme for Government 2017-18 and the Glasgow City Council commitment on September 2017.
- The LEZ does not set the framework for future consent of projects, including but not limited to, projects listed in annexes I and II of the Act and does not affect sites listed under the Habitats Directive.
- While there are no anticipated environmental problems in line with Schedule 2 1(d) of the Environmental Assessment (Scotland) Act 2005, the LEZ will be included within the series of interventions assessed under the Glasgow Transport Strategy (GTS) which is subject to full SEA. This will ensure a detailed assessment is undertaken on the LEZ proposal and assess the cumulative environmental effects of the LEZ alongside wider transportation interventions.
- The LEZ is not a plan, programme or strategy and will not contain any additional interventions than what will be considered within the GTS SEA.

This decision was set out in a formal SEA pre-screening template and submitted to the gateway. A copy of this pre-screening is presented as Appendix A of the IIA.

- 10.5 In summary, while an LEZ specific SEA is not being undertaken the LEZ will be included within the series of interventions assessed under the Glasgow Transport Strategy which is subject to full SEA, the Scoping Report of which is available [here](#). Environmental effects have also been considered as part of the IIA and SEPA evidence reports. This ensures a detailed assessment is undertaken on the LEZ proposal and assesses the cumulative environmental effects of a LEZ alongside wider transportation interventions.

## 11 Costs / Funding

- 11.1 The costs incurred to date, for LEZ modelling, appraisal, communications, engagement, impact assessments and design works, are identified in Table 3 below:

Table 3: LEZ Spend to Date

Year	Spend
2019/20	£122,087.30
2020/21	£74,960.25
2021/22	£241,384.51
Total	£438,432.06

In addition, a total of £900,000 has been awarded to the Council for procurement, installation and testing of the enforcement camera system. This procurement is underway and is expected to be completed by mid-2022.

- 11.2 The projected annual costs for the running of the LEZ scheme are estimated within Table 4 below. At this stage only estimates can be provided, further information will be provided once available.

Table 4: Estimated Annual Costs

	<b>Estimated Annual Costs</b>
Software provision and maintenance support (including licences, networking and second line CGI support)	£150,000 - £200,000
Power costs	£10,000
Back office administration (support levels, grades TBD)	£100,000
Monitoring / Reporting	£20,000
Penalty charge stationary / mail costs	TBD
Penalty charge income	TBD

- 11.3 Annual expenditure may be offset by penalty charge income. However, as a new enforcement system, it is difficult to estimate compliance rates. It is the intention of LEZs in Scotland to act as exclusionary policies for non-compliant vehicles, as evidenced by the increasing penalty charge for repeat entry. As such, and combined with naturally increasing compliance rates through fleet renewal, it is likely that penalty charges will be heavily weighted towards the beginning of enforcement and will decline rapidly. It is also the intention to decrease the number of penalties issued through implementing a far reaching and extensive public communications campaign in advance of LEZ enforcement.

## 12 Risks / Uncertainty and Mitigation

- 12.1 The Risk Register contained within Table 5 below details potential risks associated with the Glasgow LEZ scheme, including uncertainty around the proposal and the mitigation actions have been identified.

Table 5: LEZ Risk Register

Risk	Impact	Likelihood	Score	Mitigation	Impact	Likelihood	Score
LEZ Subject to Examination	4	2	8	Robust case for change has been established via the appraisal process and LEZ has been informed by 2 rounds of public and stakeholder engagement and an objection period. Objections received have all been responded to and/or addressed.	4	2	8
Scottish Ministers reject or amend proposed scheme resulting in	4	2	8	Engage with transport Scotland Ministers to provide sight of	4	2	8

resubmission to GCC Committees				proposals and understand and address any issues raised.			
Funding is not available to cover scheme maintenance and running costs	5	2	10	Continue to engage with Transport Scotland and Ministers on opportunities for ongoing revenue support. Ensure LEZ costs are reflected in future budgeting. Adapt enforcement measures if necessary.	5	2	10
GCC does not achieve May target date for declaring LEZ	3	2	6	Submission of LEZ proposals to Ministers in a timely manner.	3	2	6
Public transport operators react to increased financial pressures by reducing services or increasing costs	5	4	20	Significant BEAR funding awarded to Glasgow operators over 4 rounds with 5 <sup>th</sup> proposed. Funding through SULEBS and SCOTZEB has also been significant with vehicle and infrastructure for EVs significantly progressed. Continue to work with the Glasgow Bus Partnership to identify further measures to increase the attractiveness of bus travel through achieving faster and more reliable journey times.	5	2	10
Increased costs to individuals as a result of LEZ implementation	4	4	16	Continue to raise awareness of various funding streams available to assist with the cost of compliance. 2 year grace period for residents identified to allow for additional time to comply with LEZ requirements.	4	3	12
Increased costs to businesses as a result of LEZ implementation	4	4	16	Continue to raise awareness of various funding streams available to assist with the cost of compliance. Develop mechanism for taxi operators to potentially access multi-year funding source.	4	3	12
Negative impacts on the City Centre economy	4	3	12	Early and extensive engagement with businesses, to ensure early awareness of LEZ requirements. LEZ will be accompanied by wider placemaking	4	2	8

				projects to improve the attractiveness of the city centre for all.			
Negative impacts on accessibility for certain users	4	4	16	LEZ has been designed to ensure the Royal Hospital remains accessible. City centre highly served by public and sustainable transport. Suitable diversionary routes around the LEZ will be identified for non-compliant vehicles. National exemption granted to blue badge holders.	4	2	8
Resistance to LEZ proposals amongst stakeholders and / or members of the public	3	5	15	LEZ has been informed by the outcomes of two consultation periods and the formal objection period. Continue to raise awareness of the benefits of the LEZ and the various funding streams available to assist with the cost of compliance. City centre highly served by public and sustainable transport. Suitable diversionary routes around the LEZ will be identified for non-compliant vehicles.	3	4	12
Issues with procurement of enforcement camera system	3	3	9	Early engagement with procurement team to determine procurement route, and with suppliers. Compliance with procurement legislation. Advanced implementation and testing to be completed to ensure robust system.	3	2	6
Poorly designed LEZ that results in a large number of challenges when enforcement commences.	4	3	12	Careful placement of signs and enforcement cameras. Advance publicity of LEZ enforcement commencing.	4	2	8
Additional manpower and training required for LEZ enforcement	3	4	12	Additional staffing costs included in future cost projections. Relevant staff training.	3	3	9
Faulty / poor performing enforcement camera system	5	2	10	Use of known and trusted suppliers. Resilient systems and service levels put in place to minimise (or eliminate where possible) downtime of the LEZ Establish maintenance regime to	5	1	5

				ensure continuous operation of the LEZ.			
Handling of personal data for LEZ enforcement	5	2	10	Compliance with legislation and guidance. All data to be stored and (where required) transferred in a secure manner. All data and data management processes shall be compliant with the requirements of GDPR and the Data Protection Act 2018.	5	2	10
The LEZ results in unacceptable traffic increases in sensitive parts of the city	5	4	20	Traffic model predictions indicate minimal impact. Monitoring of the LEZ once operational to identify and respond to any undesirable traffic increases.	5	1	5
LEZ results in a reduction in air quality elsewhere in the City	5	2	10	Traffic and NMF model predictions indicate minimal impact. Monitoring of the LEZ once operational to identify and respond to any undesirable traffic increases.	5	1	5
The LEZ appeals process is not established within regulations in time for enforcement to begin	5	2	10	Continue to engage with Transport Scotland and partners	5	2	10
The DVLA database with Euro Emission Standards, and subsequent data sharing agreements are not in place in advance of enforcement starting	5	2	10	Continue to engage with Transport Scotland and partners	5	2	10
The LEZ does not achieve the desired level of emissions reduction	5	2	10	Ongoing monitoring and reporting on the performance of the LEZ.	5	1	5
LEZ planning based on pre-Covid traffic data and behaviours, and it is not clear whether this will revert to pre-pandemic levels.	5	3	15	Testing of the LEZ under alternative futures already undertaken. Ongoing monitoring and reporting on the performance of the LEZ.	5	2	10

## 13 Monitoring and Reporting

13.1 Monitoring and reporting on the performance and effectiveness of the LEZ will take place in accordance with the Transport (Scotland) Act 2019, associated Regulations and LEZ Guidance.

- 13.2 The performance of the LEZ in reducing levels of air pollution will be included within the LAQM process via incorporation within the Annual Progress Report for air quality. The APR publishes monitoring data recorded throughout the city of Glasgow, with particular emphasis on the City Centre AQMA which covers much of the proposed LEZ. It is noted though that the APR reports on monitoring taken over the 'calendar year', and that trends may only be evident over a number of years rather than year on year. Monitoring and reporting of such trends will become an integral part of monitoring of LEZ performance.
- 13.3 GCC will comply with Section 29 of the Transport Act which requires a local authority operating a LEZ scheme, as soon as reasonably practicable after the end of the financial year, to:
- Prepare an annual report on **the operation and effectiveness** of the scheme,
  - Publish the report in such manner as it considers appropriate,
  - Send a copy of the report to the Scottish Ministers,
  - Lay a copy of the report in the Scottish Parliament.
- 13.4 The LEZ annual report content will be published on the GCC website and include, as a minimum, the following:
- The scheme size, boundary location, vehicle scope, the date of scheme introduction and grace period start/end dates.
  - Any modifications to the scheme in the past 12 months (noting that Section 9(1)(b) of the Act provides a local authority with powers to amend a LEZ following a consultation).
  - Consultation(s) undertaken and responses obtained from stakeholders as listed in Section 11 of the Act and in the Low Emission Zones (Scotland) Regulations 2021.
  - the payment of remuneration, costs and expenses (as noted in Section 12(7)(c) of the Act).
  - A summary of the **operation and effectiveness** of the scheme including an assessment of:
    - the costs of proposing, making and operating the scheme,
    - The number of penalties issued, with details to include vehicle type, repeat offenders and associated surcharge application,
    - The number of appeals received and a summary statement on their outcomes (success or decline),
    - The gross and net revenue gathered by the authority from the operation of the scheme,
    - Details of how the revenue has been used to facilitate the achievement of the scheme's mandatory and discretionary objectives.
- 13.5 The LEZ annual report will aim to evaluate the effectiveness of the Glasgow LEZ across the following aspects: Air pollution level reduction trends and how the scheme contributes to carbon reduction targets within the city; Transport vehicle demographics, including the monitoring of variation in vehicle emission standard profiles; Health benefits that could be attributed to the LEZ being introduced; Contribution towards transport modal shift (particularly to active and public transport) that could be attributed to the LEZ being introduced.

Guidance acknowledges that quantifying these aspects can be difficult, especially when parallel transport and air quality related interventions are being undertaken at the same time. However, GCC will work with partners in transport, health and air quality modelling to quantify the contributions to the above from the introduction of the LEZ as far as is reasonably practical.

- 13.6 In accordance with the Act and The Low Emission Zone (Scotland) Regulations 2021, GCC will keep and publish annual accounts in connection with the LEZ for the duration of a scheme's operation, with a 'statement of accounts' published in GCC's annual accounts. This will identify:
- the costs of proposing, making and operating the scheme and the calculation method and actual figures related to gross and net revenue and expenditure of the scheme, to include all of the costs incurred for, or in connection with, planning, procuring, implementing, maintaining, repairing, improving, administering, managing, enforcing and promoting the scheme;
  - any grant provisions provided by Scottish Ministers in relation to the LEZ scheme.

## 14 Conclusions

- 14.1 Glasgow City Council's City Administration Committee has agreed the proposals set before it in the LEZ final scheme design to set an area of the city centre as a Low Emission Zone, where access by vehicles will be restricted based on specified emissions standards. The Glasgow LEZ is proposed to cover the area of the city centre bounded by the M8 motorway to the north and west, the River Clyde to the south and High St / Saltmarket to the east. A map of the proposed Glasgow LEZ is shown in **Appendix A**. The map can also be downloaded in higher resolution from [here](#).

A list of roads within the LEZ is shown in **Appendix B** and is also available at the following [LINK](#).

- 14.2 It is the intention of Glasgow City Council to introduce the LEZ on **31<sup>st</sup> May 2022**. Glasgow City Council has committed to improving air quality by enforcing the LEZ at the earliest opportunity and therefore proposes a one year grace period, meaning enforcement of entry restrictions will begin on **1<sup>st</sup> June 2023**.

A further grace period is proposed for vehicles registered to **residents within the LEZ**, reflecting their restricted options in respect of choosing to enter the LEZ. Therefore, enforcement of entry restrictions for vehicles which fall within this category will begin on **1<sup>st</sup> June 2024**.

- 14.3 The Glasgow LEZ will operate at all times, 365 days a year and 24 hours a day.

Glasgow City Council may temporarily suspend the operation of the LEZ scheme for a specified period where it is considered appropriate to do so for the purposes of a significant national or local event. A suspension may also be

issued in relation to a temporary diversion into the LEZ where vehicles follow a signed diversionary route.

- 14.4 The Glasgow LEZ will apply to all vehicle types, with the exception of motorbikes and mopeds, and those vehicle types or uses considered exempt in Regulations. **Table 1 in Appendix B** sets out the vehicle types to which the LEZ will apply, as specified in Annex II of Directive 2007/46/EC.

Entry to the LEZ by the above vehicle categories will only be permitted if they meet or exceed the nationally consistent emissions standards as set out in [The Low Emission Zones \(Emission Standards, Exemptions and Enforcement\) \(Scotland\) Regulations 2021](#) and summarised in **Table 2 of Appendix B** for compression engine (diesel) vehicles and in **Table 3 of Appendix B** for positive ignition (petrol and gas) vehicles.

Vehicles which have been retrofitted with a suitable emissions abatement system, such that their tailpipe emissions now meet or exceed the relevant emissions standard for their vehicle type as detailed above, will be permitted access to the LEZ. Such retrofitted vehicles must be suitably accredited by an independent scheme such as the Clean Vehicle Retrofit Accreditation Scheme (CVRAS).

Vehicles which have undergone repowering, either through the installation of a new engine or other power type, will also be permitted access to the LEZ, should the repowering result in emissions which meet or exceed the above emissions standards.

- 14.5 A number of vehicle types are exempted from LEZs within Scotland, as defined in [The Low Emission Zones \(Emission Standards, Exemptions and Enforcement\) \(Scotland\) Regulations 2021](#). A full list of these can be found in **Table 4 of Appendix B**

The Transport (Scotland) Act 2019 allows local authorities to grant non-compliant vehicles or vehicle types a time limited extension which would permit them to operate within a LEZ. These extensions are limited to a maximum of one year but may be renewed by the local authority. Glasgow City Council does not propose a general exemption of this type for any particular vehicles or vehicle types.

The LEZ scheme will allow for applications for a time limited exemption under circumstances where entry of a non-compliant vehicle is required for a specific, defined purpose not considered in legislation or regulations. Applications will be determined on their individual merits. Examples of this may be, but are not limited to; abnormal loads or machinery transport, historic vehicles or vehicles of particular speciality not covered by other exemptions and used for a specific purpose, or any other non-compliant vehicle use deemed appropriate on application to Glasgow City Council.

Applications for time limited exemptions will not normally be considered for the routine transport of people or goods or for routine commercial operations.

However, GCC may apply a time-limited exemption, by reference to the vehicle's use, upon consideration of an application. The approach taken will be pragmatic and adaptable and take account of National Modelling Framework modelling outputs to determine the relative impact of the vehicle use in relation to the emissions that are being targeted for reduction. It is expected that any exemptions will only be granted in rare circumstances and may be subject to conditions or restrictions as deemed appropriate by GCC.

Following feedback from taxi operators, GCC will develop a discretionary mechanism to ensure that operators who can evidence a retrofit funding application or registration of interest (or alternative appropriate evidence of arrangements in place to achieve LEZ compliance) within the timescales of the funding round for 2022/2023, will not face penalty charges for a time limited period to allow the necessary upgrades to be undertaken. Failure to evidence application for funding, or delaying applying for this funding will be at operators own risk.

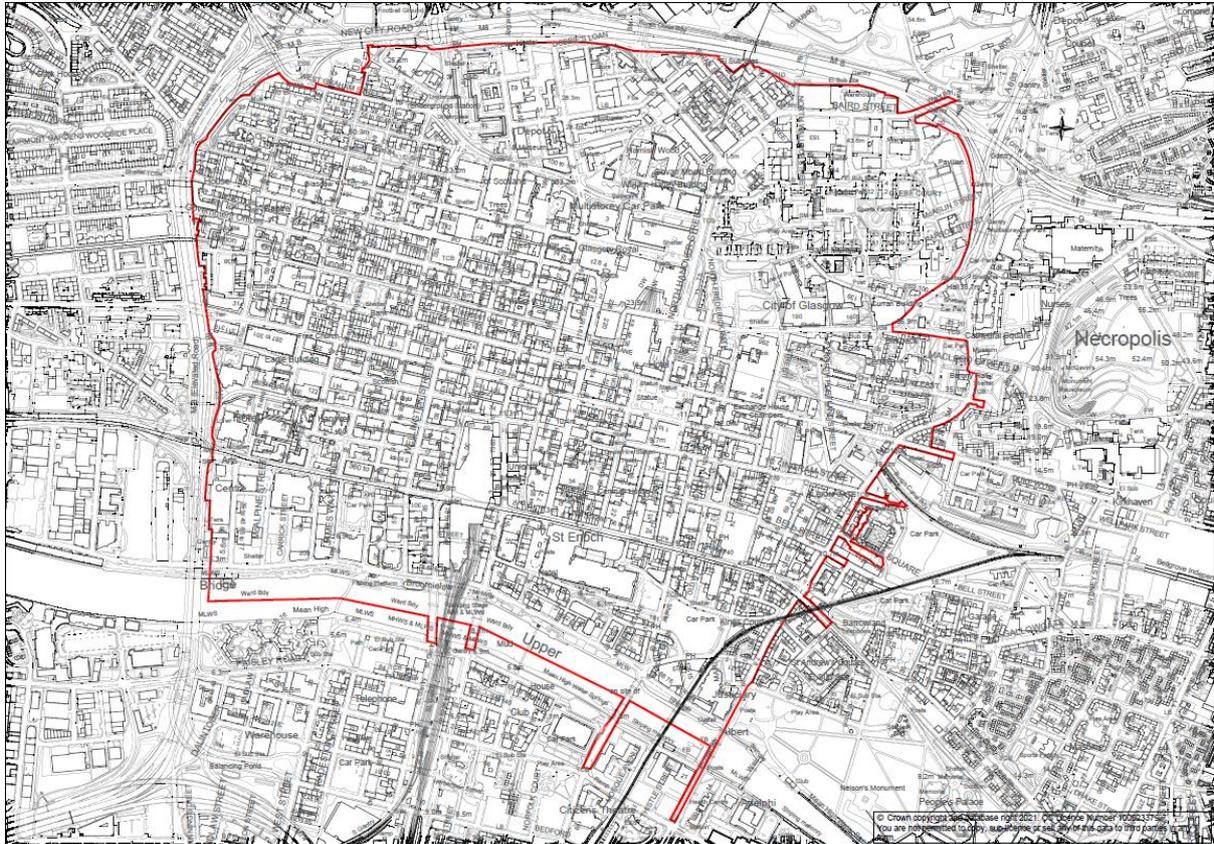
This additional mitigation balances the concerns raised by the trade around capacity and funding, whilst not disincentivising operators from making arrangements as quickly as possible to improve air quality in the city.

- 14.6 Penalty charges for non-compliant vehicle entry into an LEZ in Scotland are set at a national level as seen in [The Low Emission Zones \(Emission Standards, Exemptions and Enforcement\) \(Scotland\) Regulations 2021](#).

The initial penalty charge is set at £60 and is reduced by 50% if paid within 14 days. Where repeat entry by the same vehicle is detected within a 90 day period, this penalty charge rate will double, doubling again on each subsequent entry up to a maximum determined by vehicle type. Where no subsequent entry by a non-compliant vehicle is detected within a 90 day period, the penalty charge is reset to the initial penalty charge rate of £60. Full details of the applicable penalty charges are shown in **Table 5 of Appendix B**.

## Appendix A: Map of the LEZ and Schedule of Roads Within the LEZ

Figure 1: Map of the LEZ



**Table 1: Schedule of Roads within the LEZ**

<u>Road Name</u>	<u>Length of Road within LEZ</u>
Adams Court Lane	Its entire length
Aird's Lane	Its entire length
Albert Bridge	Northbound Only
Albion Street	Its entire length
Anchor Lane	Its entire length
Argyle Street	From the extended east kerbline of Newton Street to the eastern extremity.
Balaclava Street	Its entire length
Bath Lane	Its entire length
Bath Street	Its entire length
Baird Street	From the extended east kerbline of Kyle Street to the extended south kerbline of Pinkston Road.
Bell Street	From the western extremity to the extended west kerbline of Watson Street.
Bishop Lane	Its entire length
Black Street	Its entire length
Blackfriars Road	Its entire length
Blackfriars Street	Its entire length
Blythswood Square East	Its entire length
Blythswood Square North	Its entire length
Blythswood Square South	Its entire length
Blythswood Square West	Its entire length
Blythswood Street	Its entire length
Bothwell Lane	Its entire length
Bothwell Street	Its entire length
Bridgegate	Its entire length
Broomielaw	From the extended east kerbline of Newton Street to the eastern extremity.
Brown Street	Its entire length

Brunswick Lane	Its entire length
Brunswick Street	Its entire length
Buccleuch Lane	Its entire length
Buccleuch Street	Its entire length
Buchanan Street	Its entire length
Burrell's Lane	Its entire length
Cadogan Street	Its entire length
Cadzow Street	Its entire length
Calgary Street	Its entire length
Cambridge Street	Its entire length
Canal Street	Its entire length
Candleriggs	Its entire length
Carrick Street	Its entire length
Castle Street	From the extended south kerblineline of Cathedral Square (North) to the southern extremity.
Cathedral Street	From the extended west kerblineline of Stirling Road to the western extremity.
Cathedral Square	Stopped up south section.
Chisholm Street	Its entire length
Citizen Lane	Its entire length
Clyde Street	Its entire length
Cochrane Street	Its entire length
College Street	Its entire length
College Way	Its entire length
Collins Street	Its entire length
Couper Street	Its entire length
Cowcaddens Road	Its entire length
Crimea Street	Its entire length
Crown Street	Northbound Only
Dalhousie Lane	Its entire length
Dalhousie Street	Its entire length

Dixon Street	Its entire length
Dobbiesloan	From the extended southern kerbline of the M8 off ramp to Craighall Road to the northern kerbline of Kennedy Street.
Dobbiesloan Place	Its entire length
Douglas Lane	Its entire length
Douglas Street	Its entire length
Drury Street	Its entire length
Duke Street	From the extended eastern kerbline of High Street to the extended western kerbline of Havannah Street,
Dundasvale Court	Its entire length
Dundasvale Road	Its entire length
Dunblane Street	Its entire length
Dundas Lane	Its entire length
Dundas Street	Its entire length
Dunlop Street	Its entire length
East Bath Lane	Its entire length
Elmbank Crescent	Its entire length
Elmbank Street	Its entire length
Elmbank Street Lane	Its entire length
Exchange Place	Its entire length
Fox Street	Its entire length
Garscube Road	From the extended southern kerbline of Phoenix Road to the southern extremity.
Garnet Street	Its entire length
Garnethill Street	Its entire length
Garth Street	Its entire length
George Square East	Its entire length
George Square North	Its entire length
George Square South	Its entire length
George Square West	Its entire length

George Street	Its entire length
George the Fifth Bridge	Its entire length
Glasgow Bridge	Its entire length
Glassford Street	Its entire length
Glenmavis Street	Its entire length
Goosedubbs	Its entire length
Gorbals Street	From the extended north kerbline of Ballater Street to the northern extremity.
Gordon Lane	Its entire length
Gordon Street	Its entire length
Grafton Place	Its entire length
Hanover Court	Its entire length
Hanover Street	Its entire length
High Street	Its entire length
Hill Street	Its entire length
Holland Street	Its entire length
Holm Street	Its entire length
Hope Street	Its entire length
Howard Street	Its entire length
Hutcheson Street	Its entire length
India Street	Its entire length
Ingram Street	Its entire length
Jamaica Street	Its entire length
James Watt Street	Its entire length
Jocelyn Square	Its entire length
John Street	Its entire length
Kennedy Street	Its entire length
Killermont Street	Its entire length
King Street	Its entire length
Kyle Street	Its entire length

Larbert Street	Its entire length
Lister Street	Its entire length
London Road	From the extended west kerbline of James Morrison Street to western extremity.
Maitland Street	Its entire length
Mart Street	Its entire length
Martha Street	Its entire length
Maxwell Street	Its entire length
McAlpine Street	Its entire length
McAslin Street	Its entire length
<u>McPhater Street</u>	Its entire length
Merchant Lane	Its entire length
Metropole Lane	Its entire length
Midland Street	Its entire length
Miller Street	Its entire length
Milton Street	Its entire length
Mitchell Lane	Its entire length
Mitchell Street	Its entire length
Montrose Street	Its entire length
National Bank Lane	Its entire length
Nelson Mandela Place	Its entire length
New City Road	Its entire length
New Wynd	Its entire length
Nicolas Street	Its entire length
North Court	Its entire length
North Court Lane	Its entire length
North Frederick Street	Its entire length
North Hanover Street	Its entire length
North Portland Street	Its entire length
North Wallace Street	Its entire length

Oak Street	Its entire length
Old Wynd	Its entire length
Osborne Street	Its entire length
Oswald Street	Its entire length
Parnie Street	Its entire length
Parson Street	Its entire length
Parsonage Square	From the extended east kerblines of High Street eastwards for a distance of 150 metres.
Parsonage Row	Its entire length
Pitt Street	Its entire length
Port Dundas Road	Its entire length
Queen Street	Its entire length
Renfield Lane	Its entire length
Renfield Street	Its entire length
Renfrew Court	Its entire length
Renfrew Lane	Its entire length
Renfrew Street	Its entire length
Renton Street	Its entire length
Richmond Street	Its entire length
Robertson Lane	Its entire length
Robertson Street	Its entire length
Ropework Lane	Its entire length
Rose Street	Its entire length
Rottenrow	Its entire length
Royal Bank Place	Its entire length
Royal Exchange Court	Its entire length
Royal Exchange Square	Its entire length
St Enoch Place	Its entire length
St Enoch Square	Its entire length
St James Road	From the extended west kerblines of Stirling Road to the extended south kerblines of St Mungo Avenue.

St Margaret's Place	Its entire length
St Mary's Lane	Its entire length
St Mungo Avenue	Its entire length
St Mungo Place	Its entire length
St Peter's Lane	Its entire length
St Vincent Lane	Its entire length
St Vincent Place	Its entire length
St Vincent Street	From the eastern extremity to the extended east kerbline of Newton Street.
Saltmarket	From the extended north kerbline of Greendyke Street to the northern extremity.
Saltmarket	Northbound Only from Albert Bridge to the extended north kerbline of Greendyke Street.
Saltmarket Place	Its entire length
Sauchiehall Lane	Its entire length
Sauchiehall Street	From the extended east kerbline of Newton Street to the eastern extremity.
Scott Street	Its entire length
Shamrock Street	Its entire length
Shipbank Lane	Its entire length
Shuttle Street	Its entire length
South Exchange Court	Its entire length
South Frederick Street	Its entire length
Springfield Court	Its entire length
Stafford Street	Its entire length
Stewart Street	Its entire length
Stockwell Place	Its entire length
Stockwell Street	Its entire length
Swan Street	Its entire length
Taylor Place	Its entire length
Tontine Lane	Its entire length

Trongate	Its entire length
Tyndrum Street	Its entire length
Union Place	Its entire length
Union Street	Its entire length
Unnamed Lane adjacent to 13 Queen Street	Its entire length
Unnamed Lane adjacent to 41 Queen Street	Its entire length
Unnamed Lane adjacent to 32 Midland Street	Its entire length
Unnamed Lane adjacent to 8 Howard Street	Its entire length
Unnamed Service Road connecting Bath Street and Sauchiehall Lane	Its entire length
Unnamed Service Road connecting Cambridge Street and Renfrew Street	Its entire length
Unnamed Service Road connecting West Nile Street and Nelson Mandela Place	Its entire length
Victoria Bridge	Its entire length
Virginia Place	Its entire length
Virginia Street	Its entire length
Walls Street	Its entire length
Washington Street	Its entire length
Waterloo Lane	Its entire length
Waterloo Street	Its entire length
Wellington Lane	Its entire length
Wellington Street	Its entire length
West Campbell Street	Its entire length
West George Lane	Its entire length
West George Street	Its entire length
West Graham Street	Its entire length

West Nile Street	Its entire length
West Regent Lane	Its entire length
West Regent Street	Its entire length
William Street	From the extended east kerbline of Newton Street to the eastern extremity.
Wilson Street	Its entire length
York Street	Its entire length

## Appendix B: Vehicle Scope, Emission Standards, Exemptions and Penalty Charge Levels

**Table 1: Vehicle Type Approval Categories for the Glasgow LEZ**

Vehicle	Vehicle Category	Description
Light passenger vehicles	M1	Vehicles designed and constructed for the carriage of passengers and comprising no more than eight seats in addition to the driver's seat.
Minibus	M2	Vehicles designed and constructed for the carriage of passengers, comprising more than eight seats in addition to the driver's seat, and having a maximum mass not exceeding five tonnes.
Bus and coach	M3	Vehicles designed and constructed for the carriage of passengers, comprising more than eight seats in addition to the driver's seat, and having a maximum mass exceeding five tonnes.
Light Goods Vehicles (LCVs)	N1	Vehicles designed and constructed for the carriage of goods and having a maximum mass not exceeding 3.5 tonnes.
Heavy Goods Vehicles (HGVs)	N2	Vehicles designed and constructed for the carriage of goods and having a maximum mass exceeding 3.5 tonnes but not exceeding 12 tonnes.
	N3	Vehicles designed and constructed for the carriage of goods and having a maximum mass exceeding 12 tonnes.

**Table 2: Compression Engine (Diesel), LEZ Emission Standards**

Vehicle Category	Emissions Standards	Euro category
Heavy-duty vehicles (e.g. HGVs and buses / coaches)	Euro VI	M2, M3, N2, N3
Light passenger and light goods vehicles	Euro 6	M1, M2, M3, N1, N2
Special category vehicles: <ul style="list-style-type: none"> <li>• an ambulance (which is not exempt under the Regulations)</li> <li>• a hearse</li> <li>• a motor caravan</li> </ul>	Euro 6	M1, M2, M3

**Table 3: Positive Ignition (Petrol and Gas) Engine, LEZ Emission Standards**

<b>Vehicle Category</b>	<b>Emissions Standards</b>	<b>Euro category</b>
Heavy-duty vehicles (e.g. HGVs and buses / coaches)	Euro IV	M2, M3, N2, N3
Light passenger and light goods vehicles	Euro 4	M1, M2, N1, N2
Special category vehicles: <ul style="list-style-type: none"><li>• an ambulance (which is not exempt under the Regulations)</li><li>• a hearse</li><li>a motor caravan</li></ul>	Euro 4	M1, M2, M3

**Table 4: National Exemptions Applying to the Glasgow LEZ**

<b>Vehicle type or classification</b>	<b>Description</b>
Emergency Vehicles	The vehicle is being driven by any person who is: <ul style="list-style-type: none"><li>• undertaking their duty as a constable</li><li>• providing a response to an emergency at the request of the Scottish Ambulance Service Board</li><li>• exercising the functions of the Scottish Ambulance Service Board, the Scottish Fire and Rescue Service, Her Majesty's Coastguard or the National Crime Agency</li></ul>
Naval, Military or Air Force Vehicles	<ul style="list-style-type: none"><li>• Vehicles being used for naval, military or air force purposes.</li></ul>
Historic Vehicles	<ul style="list-style-type: none"><li>• The vehicle was manufactured, or registered under the Vehicle Excise and Registration Act 1994, for the first time at least 30 years ago</li><li>• The vehicle is no longer in production, and</li><li>• The vehicle has been historically preserved or maintained in its original state and has not undergone substantial changes in the technical characteristics of its main components.</li></ul>
Vehicles for Disabled Persons*	<ul style="list-style-type: none"><li>• the vehicle is being driven by any person who is in receipt of a badge (a blue badge) that has been issued under section 21(2) of the Chronically Sick and Disabled Persons Act 1970,</li><li>• a passenger in the vehicle has been issued with a badge under that section of that Act, or</li><li>• a badge for the vehicle has been issued under section 21(4) of that Act,</li><li>• a reduction in annual rate of vehicle excise duty applies because the vehicle is being used by a disabled person in receipt of personal independence payment at the standard rate, or</li><li>• Vehicles registered with a 'disabled' or 'disabled passenger vehicles' tax class e.g. the vehicle is exempt from payment of vehicle excise duty under paragraph 19(1) or 20(1) of schedule 2 of the Vehicle Excise and Registration Act 1994 (exemptions from excise duty for vehicles used by disabled persons).</li></ul>
Showman Vehicles	<ul style="list-style-type: none"><li>• Vehicles described as either “showman’s goods vehicle” or “showman’s vehicle” according to section 62(1) of the Vehicle Excise and Registration Act 1994. Note: these are highly specialised vehicles used for the purposes of travelling showmen, where the vehicle is used during the performance, used for the purpose of providing the performance or used for carrying performance equipment</li></ul>

\*Note: blue badges are assigned to a person, not a vehicle, so a blue badge holder could travel in any vehicle and the rules of the blue badge would be applied to that vehicle on that day of travel.

**Table 5: Penalty Charges Applying to the Glasgow LEZ**

<b>Vehicle Category</b>	<b>Initial penalty charge</b>	<b>Subsequent penalty charges</b>			
		<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>
Light passenger vehicle	<b>£60</b>	<b>£120</b>	<b>£240</b>	<b>£480</b>	<b>-</b>
Minibus	<b>£60</b>	<b>£120</b>	<b>£240</b>	<b>£480</b>	<b>£960</b>
Bus and Coach	<b>£60</b>	<b>£120</b>	<b>£240</b>	<b>£480</b>	<b>£960</b>
Light goods vehicle	<b>£60</b>	<b>£120</b>	<b>£240</b>	<b>£480</b>	<b>-</b>
Heavy goods vehicle	<b>£60</b>	<b>£120</b>	<b>£240</b>	<b>£480</b>	<b>£960</b>
Special Purpose Vehicle (SPV)	<b>£60</b>	<b>£120</b>	<b>£240</b>	<b>£480</b>	<b>-</b>

## Appendix C – LEZ Engagement Activity Log

Low Emission Zone - Engagement Overview	
Date	Event/Activity
20/02/2018	LEZ Delivery Forum
31/05/2018	Clean Air Day - Launch photocall: Web article
31/05/2018	Clean Air Day - Launch photocall: Social media
14/06/2018	CAC approved LEZ proposals: Press Release
14/06/2018	CAC approved LEZ proposals: Web article
14/06/2018	CAC approved LEZ proposals: Social media
14/06/2018	CAC approved LEZ proposals: Cllr Richardson TV interview (BBC)
14/06/2018	Scottish Transport Summit: Cllr Richardson speech
14/06/2018	Scottish Transport Summit: Coverage of Cllr Richardson's speech
21/06/2018	The UK Health Alliance on Climate Change (hosted in the Satinwood Suite): Cllr Richardson/ GCC Officer
22/06/2018	The UK Health Alliance on Climate Change (hosted in the Satinwood Suite): Coverage of Cllr Richardson's speech
21/06/2018	<b>Clean Air Day: Event in George Sq</b>
21/06/2018	Clean Air Day: Social Media
21/06/2018	Clean Air Day: Web article
26/06/2018	BVRLA Fleet Summit: GCC Officers/Cllr Richardson speakers
26/06/2018	BVRLA Fleet Summit: Coverage of Cllr Richardson's speech
03/08/2018	<b>PAS: Air Quality Place Standard (on street engagement) - Public survey</b>
	PAS: Air Quality Place Standard (on street engagement) - Social media
28/08/2018	<b>PAS: Air Quality Place Standard (business event at The Lighthouse) GCC Officers/Cllr Richardson speakers</b>
27/08/2019	<b>Transport Summit</b> (Satinwood Suite) - GCC Officer speaking
	PAS: Air Quality Place Standard (business event at The Lighthouse) Coverage of Cllr Richardson's speech
27/09/2018	<b>Taxi Representatives Meeting (Chambers)</b>
03/10/2018	<b>PAS: Air Quality Place Standard (internal council staff)</b>
09/10/2018	First Bus launch event: GMS interview
	First Bus launch event: The Sun/Evening Times interviews
	First Bus launch event: BBC/STV TV interviews
	First Bus launch event: Social media
31/10/2018	Holyrood Connect LEZ event: (RHA, FSB, HP Scotland & Sustrans)
12/11/2018	FSB: Initial Meeting
16/11/2018	Supported FSB survey through GCC social channels (LEZ awareness question)
30/11/2018	Unicef OuRight World Childrens Day (Clean Air): Web article
	Unicef OuRight World Childrens Day (Clean Air): Social media
	BHF support announcement: Press Release (story given early to ET)

	BHF support announcement: Web article
	BHF support announcement: Video
	BHF support announcement: RT - ET online article
03/12/2018	Four weeks to go' messaging (LEZ logo)
	Article in Insider
05/12/2018	Links to LEZ webpages added to NDR and Licensing landing pages
10/12/2018	Three weeks to go animation/messaging
11/12/2018	Community Transport - Engagement (GCC Officer)
13/12/2018	MAG meeting (motorcyclists) - with GCC Officer
17/12/2018	Two weeks to go animation/messaging
19/12/2018	Interview with Cllr Richardson in the Evening Times (print/online)
	Signage: Press Release
	Signage: Web article
	Signage: Picture
20/12/2018	LEZ bus launch: Photocall at Buchanan Bus Station
	LEZ bus launch: Interview with STV (Cllr Richardson)
	LEZ bus launch: Interview with Global Radio (Cllr Richardson)
	LEZ bus launch: Interview with ET (Cllr Richardson)
	LEZ bus launch: Interview with The Herald (Cllr Richardson)
	LEZ bus launch: Web article
	LEZ bus launch: Video
	LEZ bus launch: Picture
24/12/2018	One week to go animation/messaging
30/12/2018	One day to go animation/messaging
31/12/2018	Interview with GMS (Cllr Richardson)
	Interview with BBC (Cllr Richardson)
	It's here animation/messaging
31/12/2018	Bus adverts (31/12/18-27/01/19)
01/12/2018	Happy New Air animation/messaging
	Happy New Air - video with Cllr Richardson
	Happy New Air - Web Article
14/01/2019	RT: Scottish Government overview video of 4 cities LEZ
15/01/2019	MAG teleconference with Transport Scotland
17/01/2019	Cllr Richardson tele interview with Air Quality News
23/01/2019	RHA LEZ Engagement Event
	Web article
	Tweet/Facebook post
31/01/2019	Tweet/Facebook post - highlighting 1 month anniversary of the LEZ
06/02/2019	BEAR Phase 2 funding engagement event (arranged by TS) - GCC Officer speaking
06/02/2019	Transport Times UK Bus Summit - Cllr Richardson speech
11/02/2019	FSB tweet Cllr Richardson's LEZ article written especially for them
12/02/2019	Smart Sustainable Cities (UK Foreign & Commonwealth Office) - GCC Officer speaking in Madrid
26/02/2019	Glasgow Chamber of Commerce - Invite to Chambers Policy Forum to discuss LEZ (GCC Officers)
01/03/2019	FSB tweet Cllr Richardson's LEZ article written especially for them

07/03/2019	Meeting with Glasgow Showpeople (inc. representation from Transport Scotland)
14/03/2019	Placed LEZ article in Eco Stars newsletter
21/03/2019	Meeting with British Lung Foundation (Cllr Richardson)
21/03/2019	RT: Message from BLF, post visit with Cllr Richardson
21/03/2019	Meeting hosted by Transport Scotland with NFDA ( represents franchised car and commercial vehicle retailers in the UK, lobbying on their behalf and offering support services).
26/03/2019	Transport News LEZ event - GCC Officer in speaker panel
28/03/2019	Officer presenting to Core Cities about LEZ strategy
29/03/2019	Meeting with West of Scotland Community Transport Network (Vincent McInally presenting)
29/03/2019	Meeting with Abellio about replacement rail coaches
29/03/2019	Shortlisted for Scottish Transport Times Awards
04/04/2019	Meeting with FSB - arranging an event
11/04/2019	Joint Meeting (Transport Scotland) with the Scottish Motor Trade Association
14/04/2019	Sofair - European Air Quality Conference (GCC Officer presenting)
18/04/2019	Meeting with boundary LA's - Licensing
24/04/2019	REHIS Conference (GCC Officer presenting)
02/07/2019	Taxi Engagement event - Royal Concert Hall
08/05/2019	Transport Scotland - LEZ Regulations and Guidance Workshop
15/05/2019	All Energy & Dcarbonise event - LEZ stall (x2 days)
	Tweet/Facebook post
15/05/2019	Glasgow - Net Zero (Scottish Power) speech by Cllr Susan Aitken at SEC
22/05/2019	STAR Conference (LEZ stall)
23/05/2019	School engagement with Ricardo (Citizen Science - air pollution monitoring) x3 schools
28/05/2019	Clean Air Day launch
	Web article
	Tweet/Facebook post
04/06/2019	Insider Article about CAD 2019 ( <a href="http://connect.glasgow.gov.uk/article/24303/News">http://connect.glasgow.gov.uk/article/24303/News</a> )
07/06/2019	UN World Environment Day (Air Quality) - LEZ stand present at City Building internal staff event
07/06/2019	SEPA school banner on air quality (web article focusing on x3 schools)
	Web article
	Tweet/Facebook post
12/06/2019	SEPA school banner artwork projected onto the cityscape (Armadillo, Sci Centre and City Chambers)
	Web article
	Tweet/Facebook post
13/06/2019	Garnetbank PS conducted air testing in advance of Clean Air Day (Ricardo)
13/06/2019	Scottish Transport Awards - LEZ shortlisted for Innovation Transport Project
	Web article
	Tweet/Facebook post
17/06/2019	Corporate Announcement about CAD 2019 (staff call to action)
18/06/2019	Digital ads in Evening Times promoting CAD (ex gratia)

19/06/2019	Clean Air Day: Tweet/Facebook post
20/06/2019	Clean Air Day: Photocall with Cab Sec Roseanna Cunningham, Ricardo and Garnetbank Primary School
	Clean Air Day: Press Release
	Clean Air Day: Web article
	Clean Air Day: Tweet/Facebook post through the day
25/06/2019	Meeting with Glasgow Taxis (sticker idea)
26/06/2019	Meeting with Beat the Street (LEZ related active travel scheme)
26/06/2019	Cllr Richardson filmed vlog for Transport Scotland for their LEZ website video
07/08/2019	Officer spoke at engagement session arranged by TS for Abellio's coach suppliers (40 coach operators attd)
09/08/2019	LEZ email inbox set up
15/08/2019	Beat the Street launch: Photocall with Cllr Richardson at Thornwood Primary
	Beat the Street: Web article
	Beat the Street: Tweet/Facebook post through the day
19/08/2019	Transport Scotland's basic online vehicle checker made live (cross promoted by GCC through social channels)
23/08/2019	Greenfleet electric vehicle event in Geo S - LEZ stand (LR and CH)
24/08/2019	Beat the Street: Tweet/Facebook post through the day to encourage registration/participation
25/08/2019	Beat the Street: Tweet/Facebook post through the day to encourage registration/participation
27/08/2019	Beat the Street: Tweet/Facebook post through the day to encourage registration/participation
28/08/2019	Beat the Street official launch II: Photocall with Cllr Richardson/Community Event at Scotstoun Leisure Centre
28/09/2019	EST/LEVC electric vehicle/taxi funding event at LEVC (LEZ literature supplied and supported through social media)
29/08/2019	LEZ literature supplied to LEVC for their customers
29/08/2019	LEZ weblink added to the Smarter Travel GLA webpages (Collin Little's team)
01/09/2019	Beat the Street - Article in Insider
	Promotion of FSB LEZ engagement event over several days through social using GCC, Tontine, Business Glasgow, FSB, Lighthouse and Cllr Richardson's feeds
05/09/2019	LEZ marketing material display erected at the Polmadie taxi inspection bay
07/09/2019	Officer speaking about the LEZ at Eco-Congregations
17/09/2019	FSB engagement event/photocall - Satinwood Suite
	FSB engagement event: Web article
	FSB engagement event: Tweet/Facebook post
19/09/2019	Citizen Science (LEZ: Air Quality) teaching session to pupils at St Joseph's (diffusion tubes placed within school grounds - Clyde/St Monica's already done)
20/09/2019	Climate Change Seminar at City College (LEZ input)
02/10/2019	Core Cities Group Air Quality W/Shop (Officer speaking) - delegates inc. DEFRA, and councils of Leeds, L'Pool, M'Chester, Notts, Sheffield & Bath
03/10/2019	LEZ Retrofit (Support) Fund launch with Cab Sec Michael Matheson in George Square - assisting Transport Scotland
	LEZ Retrofit (Support) Fund - web article
	LEZ Retrofit (Support) Fund - Tweet/Facebook post
04/10/2019	LEZ Retrofit (Support) Fund - Tweet/Facebook post

07/10/2019	#ScotClimateWeek - Tree planting with St Joseph's photocall (100+ schools planting native trees to improve air quality)
	#ScotClimateWeek: Tree planting - web article
	#ScotClimateWeek: Tree Planting - Tweet/Facebook post (inc. video)
07/10/2019	#ScotClimateWeek: NATA Transport becomes 200th ECO Stars member (photocall to highlight how scheme aids LEZ compliance/reduces emissions)
	#ScotClimateWeek: NATA Transport becomes 200th ECO Stars member - web article
	#ScotClimateWeek: NATA Transport becomes 200th ECO Stars member - Tweet/Facebook post (inc. video)
09/10/2019	#ScotClimateWeek: First Bus bring LEZ bus to St Joseph's (photocall to promote LEZ and sustainable travel options)
	#ScotClimateWeek: First Bus bring LEZ bus to St Joseph's - web article
	#ScotClimateWeek: First Bus bring LEZ bus to St Joseph's - Tweet/Facebook post (inc. video)
	#ScotClimateWeek: First Bus bring LEZ bus to St Joseph's - bus co. issued press release (picked up by The Herald)
09/10/2019	#ScotClimateWeek: Generic LEZ messaging on social media
10/10/2019	#ScotClimateWeek: Attendance with LEZ stand at Healthy Streets conference in the Banqueting Hall
11/10/2019	#ScotClimateWeek: Attendance with LEZ stand at Healthy Streets exhibition at Strathclyde Uni TIC
11/10/2019	#ScotClimateWeek: Web article to highlight the work with Ricardo for Citizen Science
	#ScotClimateWeek: Tweet/Facebook post to highlight the work with Ricardo for Citizen Science
	#ScotClimateWeek: Web article to highlight the work with Ricardo for Citizen Science
11/10/2019	#ScotClimateWeek: Tweet/Facebook post to mark the results (miles actively travelled) for Beat the Street
	#ScotClimateWeek: Web article to mark the results (miles actively travelled) for Beat the Street
12/10/2019	LEZ Retrofit (Support) Fund - Tweet/Facebook post
14/10/2019	LEZ Retrofit (Support) Fund - Tweet/Facebook post
15/10/2019	LEZ Retrofit (Support) Fund - Tweet/Facebook post
16/10/2019	LEZ Retrofit (Support) Fund - Tweet/Facebook post
	Attendance with Licensing at the Transport Scotland taxi operator drop in event (LEZ Retrofit)
	LEZ Retrofit (Support) Fund - web article
	LEZ Retrofit (Support) Fund - Tweet/Facebook post
17/10/2019	LEZ literature and display stand installed at GCC Service Desk
18/10/2019	LEZ Retrofit (Support) Fund - Tweet/Facebook post
30/10/2019	LEZ Retrofit (Support) Fund - Tweet/Facebook post
	Attendance at the Holyrood Connect LEZ Conference (Anna Richardson speaking)
31/10/2019	LEZ article for internal/external communications for City Property staff and tenants (Dec e-zine)
07/11/2019	Home Energy Scotland - Sustainable Living Event (west-end residents, EV infra, LEZ and home energy efficiencies) - Tweet/Facebook post
	Attend Transport Scotland's STEP event (Scottish Transport Emissions Partnership) - share comms re: LEZ
	Attend FSB Annual Dinner (LEZ networking with SMEs - GCC Officer)

12/11/2019	National Air Quality Conference (London) - Cllr Anna Richardson speaking (Glasgow - Scotland's first LEZ)
	Home Energy Scotland - Sustainable Living Event (west-end residents, EV infra, LEZ and home energy efficiencies) - Tweet/Facebook post
14/11/2019	Home Energy Scotland - Sustainable Living Event (west-end residents, EV infra, LEZ and home energy efficiencies) - LEZ stand for public engagement
15/11/2019	Attendance at SPT Regional Meeting to highlight LEZ plans to boundary councils (GCC Officer)
12/12/2020	Generic LEZ tweet
01/01/2020	Bus Shelter ads (until 13 Jan 2020) - Will Your Vehicle Comply?
	Happy New Air social media post - 40% bus compliance
	Insider - update to staff including TS online vehicle checker resource
03/01/2020	Promoted Facebook post - Will Your Vehicle Comply - get LEZ ready
06/01/2020	40% Bus LEZ compliance Media Release
	40% Bus LEZ compliance - web article
	40% Bus LEZ compliance - Tweet/Facebook post
09/01/2020	Ricardo - Air Quality Report Winners web article
	Ricardo - Air Quality Report Winners - Tweet/Facebook post
10/01/2020	First Bus Electric Bus Launch - supported First Bus at press photo-call (Cllr Anna Richardson)
	First Bus Electric Bus Launch - web article
	First Bus Electric Bus Launch - Tweet/Facebook post
10/01/2020	Promoted Facebook post - Will Your Vehicle Comply - get LEZ ready
20/01/2020	Promoted Facebook post - Will Your Vehicle Comply - get LEZ ready
27/01/2020	Promoted Facebook post - Will Your Vehicle Comply - get LEZ ready
30/01/2020	Boundary LA LEZ update - <a href="#">[engagement activity specific to LEZ Public Consultation]</a>
01/02/2020	Officer speaking about the LEZ at the Community Councils General Meeting <a href="#">[engagement activity specific to LEZ Public Consultation]</a>
11/02/2020	LEZ - Taxi Compliant sticker scheme - Tweet/Facebook article
	LEZ - Taxi Compliant sticker scheme - Web article
17/02/2020	LEZ Public Consultation opens (until 29 March 20) <a href="#">[engagement activity specific to LEZ Public Consultation]</a>
17/02/2020	Take Part in the LEZ Consultation: Tweet/Facebook post
18/02/2020	Eco Workshop (with NLC/SLC) - GCC officer as speaker about Glasgow's LEZ <a href="#">[engagement activity specific to LEZ Public Consultation]</a>
24/02/2020	Take Part in the LEZ Consultation: Tweet/ <b>Promoted</b> Facebook post
24/02/2020	GCC Officer speaking to students at Strathclyde Uni about LEZ/air quality <a href="#">[engagement activity specific to LEZ Public Consultation]</a>
25/02/2020	Info stall at SEC for Sustainable Glasgow relaunch (600 delegates)
28/02/2020	Info stall at Strathclyde Uni on LEZ/sustainable travel <a href="#">[engagement activity specific to LEZ Public Consultation]</a>
02/03/2020	Radio ads - 2 weeks commencing today <a href="#">[engagement activity specific to LEZ Public Consultation]</a>
03/03/2020	LEZ Info stand at GCC public areas <a href="#">[engagement activity specific to LEZ Public Consultation]</a>
14/03/2020	Take Part in the LEZ Consultation: Tweet/Facebook post
20/03/2020	Take Part in the LEZ Consultation: Tweet/ <b>Promoted</b> Facebook post
27/03/2020	Take Part in the LEZ Consultation: Tweet/Facebook post

01/07/2020	GCC Officer to present at the Accenture Electric Vehicle online forum
01/03/2021	Social media to cross-promote the LEZ Support Fund
10/05/2021	Radio ads - 2 weeks commencing today [generic awareness]
11/05/2021	Promoted social media posts - x4
02/06/2021	Media Release - LEZ taking shape ahead of public consultation (following release of ESCR papers about the Phase 2 scheme design)
17/06/2021	Clean Air Day (media release, web article and social)
24/06/2021	Media Release - LEZ consultation open
28/06/2021	Radio ads - 2 weeks commencing today [engagement activity specific to LEZ Public Consultation]
	Digital ads (Daily Record/Glasgow Times) [engagement activity specific to LEZ Public Consultation]
	Take Part in the LEZ Consultation: Tweet/Facebook post
02/07/2021	Take Part in the LEZ Consultation: Tweet/ <b>Promoted</b> Facebook post
08/07/2021	Take Part in the LEZ Consultation: Tweet/Facebook post
16/07/2021	Take Part in the LEZ Consultation: Tweet/ <b>Promoted</b> Facebook post
21/07/2021	Take Part in the LEZ Consultation: Tweet/Facebook post
29/07/2021	Take Part in the LEZ Consultation: Tweet/ <b>Promoted</b> Facebook post
04/08/2021	Take Part in the LEZ Consultation: Tweet/Facebook post
13/08/2021	Take Part in the LEZ Consultation: Tweet/ <b>Promoted</b> Facebook post
12/08/2021	All LEZ statutory stakeholders contacted by NRS as well as those on existing non-statutory consultee stakeholder list
13/08/2021	Requested that boundary local authorities share GCC LEZ messaging
16/08/2021	LEZ city centre residents mail drop (9k addresses) - ward members, NRS comms and social media team advised [letter added to LEZ webpages]
23/08/2021	Take Part in the LEZ Consultation: Tweet/Facebook post
26/08/2021	Take Part in the LEZ Consultation: Tweet/ <b>Promoted</b> Facebook post
09/09/2021	Officer speaking at the Glasgow Chambers Business Resilience Council
23/09/2021	Cross promoted via social media, EST's HGV/Bin Lorry Retrofit Webinar
27/09/2021	Cross promoted via social media, EST's HGV/Bin Lorry Retrofit Webinar
30/09/2021	EST/TS HGVs/Bin Lorries Retrofit Webinar
	Cross promoted via social media, EST's LGV Retrofit Webinar
04/10/2021	Cross promoted via social media, EST's LGV Retrofit Webinar
11/10/2021	Officer recorded LEZ COP26 podcast with Bauer Media 'So You Want to Save the Planet'
14/10/2021	EST/TS LGVs Retrofit Webinar
03/11/2021	Retweeted HES posts about LEZ Support Fund
17/11/2021	Cross promoted via social media, EST's Taxi Retrofit Webinar
22/11/2021	National campaign via BIG Partnership - x4 weeks promoted social media posts
	Retweeted HES posts about LEZ Support Fund
23/11/2021	Media Release - Phase 2 of LEZ approved by ESCR
	Social Media to highlight Phase 2 LEZ approved by ESCR
	Cross promoted via social media, EST's Taxi Retrofit Webinar
	LEZ webpages updated to reflect the publication of the LEZ scheme and the objection procedure
	LEZ Phase 2 scheme design published in the Glasgow Times
25/11/2021	Officer panel speaker at EST/TS taxi retrofit webinar

17/01/2022	National campaign via BIG Partnership - x3 weeks digital advertising, radio, TV, billboards, outdoor (supermarkets) and parking tickets (Pay & Display)
31/01/2022	General LEZ awareness radio ads - 2 week (6 stations) commencing today
	Digital ads (Daily Record/Glasgow Times)
	Petrol pump ad nozzles - x 4 weeks (38 forecourts)
31/01/2022	General LEZ awareness - promoted Facebook post) - also organic posts on Twitter and LinkedIn
07/02/2022	General LEZ awareness - promoted Facebook post) - also organic posts on Twitter and LinkedIn
14/02/2022	National campaign via BIG Partnership - x4 weeks digital advertising, radio, TV, billboards, outdoor (supermarkets), parking tickets (Pay & Display), petrol nozzles, bus rears/shelters/sides
	General LEZ awareness - promoted Facebook post) - also organic posts on Twitter and LinkedIn
21/02/2022	General LEZ awareness - promoted Facebook post) - also organic posts on Twitter and LinkedIn
28/02/2022	General LEZ awareness - promoted Facebook post) - also organic posts on Twitter and LinkedIn

## Appendix D - LEZ Objections Report

### 1 Background

The Glasgow Low Emission Zone began with phase 1 in 2018, targeting a rolling improvement in emission standards for the scheduled bus fleet. Phase 2 of the LEZ was originally scheduled to begin in 2022 and require the relevant emission standards to be applied to all other vehicle types.

Development of phase 2 has been ongoing since the introduction of phase 1, with extensive air quality and transport modelling of the various options, an integrated impact assessment, an initial public consultation on LEZ options and a statutory consultation on the preferred scheme design. All these reports are available at <https://www.glasgow.gov.uk/LEZ>

During this process there has been extensive engagement with the public, zone residents, industry, business groups, community representatives and other affected stakeholders. This engagement has contributed to the development of the final scheme design.

The LEZ final scheme design was formally published on 9<sup>th</sup> December 2021. Legislation and regulations require that a minimum period of 28 days be allowed for the receipt of objections to the proposals. Since this would include the Christmas and New Year period, six weeks was allocated for the receipt of objections, ending on 20<sup>th</sup> January 2022.

In accordance with regulations and guidance, notice of the final scheme design was published in the local press and on-street notices within affected streets. Similar communications channels as utilised for the consultation were used to spread awareness of the scheme publication. Statutory consultees were also informed, as were those previously directly contacted as part of the consultation.

Details of the final scheme design; including details of the consultation exercise and any changes to the preferred scheme resulting from this, were published on the [glasgow.gov.uk/LEZ](https://www.glasgow.gov.uk/LEZ) website. Small changes to the LEZ boundary were made in response to consultation feedback and incorporated into the final scheme design. The full final scheme design report as published can be found [here](#).

The notice of publication included provision for respondents to raise objections to any aspect of the scheme design or indeed the scheme design as a whole. Any objection must be made in writing and contain a statement outlining the grounds of the objection.

## 2 Objections Summary

A total of 134 objections were received by the end of the formal objection period. Of these, 123 were from persons identifying themselves as operators or drivers within the hackney taxi trade with their objections based on the perceived impact on this trade. 49 of the 123 objections followed a template response.

One of these objections was a comprehensive statement of reasons received from Unite the Union Glasgow Cab Section with four main grounds for objection.

The 11 objections from those not identifying themselves as part of the taxi trade included a variety of grounds for objection with some citing multiple reasons.

Two responses were received indicating an objection to the LEZ but did not include any reasons for the objection. These have not been included in the figures above.

## 3 Objection Themes

### 3.1 Taxi Objections

49 responses from the taxi trade included the following statement or a minor variation thereof,

“Please note my objection to the LEZ start date of 01/06/2023 for Hackney cabs. The pandemic has had a devastating financial impact on their business. It will be impossible for them to meet the current deadline.”

The objection from the Unite the Union Glasgow Cab Section stated the following grounds:

- Impact of the pandemic – The objection cites the loss of income for the sector due to restrictions during the period of the pandemic. This has restricted the ability to invest in compliant vehicles and is not sufficiently mitigated by the corresponding delay to LEZ enforcement.
- Compliant vehicle availability – The objection cites the high cost of electric taxis and suitable Euro 6 diesel taxis. It also states that there is limited availability of Euro 5 vehicles to be purchased and then retrofitted to achieve compliance.
- Net Zero targets – The objection states that exempting taxis from the LEZ for a few years will allow for the market in electric vehicles to mature and become more attractive and cheaper for operators. The objection also states that the adoption of new diesel vehicles, with their expected operational lifespans, will have an adverse impact on EV adoption and therefore upon net zero targets.
- Scottish LEZ enforcement dates – The objection notes the difference in proposed enforcement dates between Glasgow and the other Scottish LEZ cities and states that there must be parity for taxi fleets between the major cities. This part of the objection also makes claims that the emissions impact from the taxi fleet is limited in scope and geographic extent.

### 3.2 Non-taxi objections

Non-taxi objections included the following themes, in rough order of prevalence:

- Adverse impact on those with low incomes.
- Adverse impact on businesses.
- Poor / expensive public transport.
- Electric vehicle cost / infrastructure.
- Penalty charges are too high.
- Pandemic impacts.
- Money making scheme for the Council
- Personal impact.
- Won't produce the required reduction in pollution.

## **4 Objection Response**

### **4.1 Taxi Objections**

#### **4.1.1 Background**

Officers from GCC have engaged extensively with the taxi trade and the Union since the LEZ was initially proposed. This has included written communication, presentations at licensing committee meetings, presentations to the Taxi and Private Hire Trade Group and special events at the Royal Concert Hall to ensure that the trade were fully informed of the LEZ plans and the financial aid available to operators to become compliant. Officers have also promoted communications and events organised by Transport Scotland / the Energy Saving Trust to encourage uptake of the various grant options open to operators. This engagement pre-dates the adoption of the original LEZ timescale in [June 2018](#) and has continued since.

#### **4.1.2 Pandemic Impacts**

The original timescale for phase 2 of the LEZ called for all vehicles to be compliant by 31<sup>st</sup> December 2022. However the pandemic [delayed this timescale](#) and the current proposals are for enforcement of the LEZ to begin on 1<sup>st</sup> June 2023. Studies carried out on behalf of the LEZ cities showed that the expected recovery from the pandemic would result in a return to unacceptable air pollution levels. This has been observed through measurements for 2021 following compliance in 2020, reflecting the lessening of restrictions from the initial lockdown period. It is therefore considered essential that the LEZ be implemented as soon as possible within this delayed timescale to reduce the period where the public are exposed to pollution levels above the health based objectives to as short as possible.

Taxi operators are eligible for various funding options to help them to become LEZ compliant. These are detailed at <https://www.lowemissionzones.scot/funding> and have been extensively promoted by GCC, Transport Scotland and the Energy Saving Trust. Despite the level of support for this sector being second only to that available to the bus sector, the support scheme for taxis has seen limited uptake from operators in Glasgow, with many citing the pandemic impact for their inability to upgrade

vehicles. At the time of writing, 55 funded retrofits have been undertaken for vehicles registered in the city. This leaves a significant number eligible for the funding but with limited time to become compliant.

The table below contains a breakdown of the taxi fleet as of December 2021 with their LEZ compliance status / eligibility included.

<b>Dec 2021</b>	<b>Count</b>	<b>%</b>
All taxis	1419	100.0%
> Jan 2017 registration	340	24.0%
Retrofitted	55	3.9%
< Jan 2017 but Euro 6	6	0.4%
> Jan 2017 but not likely to be Euro 6	6	0.4%
LEZ compliant	395	27.8%
Non-LEZ compliant	1024	72.2%
Models with CVRAS retrofit approval	894	63.0%
Exchange to retrofit	130	9.2%

Almost 28% of the fleet is currently LEZ compliant, with an additional 63% eligible for retrofit. In all cases there is an exhaust treatment solution commercially available with 80% of the cost, up to £5000, covered by an EST grant. Transport Scotland data indicates that costs of exhaust treatment solutions are currently around £7000 with the amount above the grant maximum payable by the operator. There is also an alternative scheme available for some vehicles allowing for the installation of a new engine and subsequent conversion to run on LPG. This scheme similarly covers 80% of the cost, up to £10000. Again, data from Transport Scotland indicates that the cost of this treatment is currently around £13,800, with the amount above the grant maximum payable by the operator. It should be noted that this cost can be offset by the lower operating costs of a new, LPG fueled engine.

For ~9% of the current fleet there is no retrofit solution available. However, in response to this, GCC amended the licensing rules allowing for older vehicles to be purchased and registered which are eligible for retrofit. These operators may also be able to benefit from the disposal scheme which provides £2500 for disposal of non-compliant vehicles. It should be noted that these vehicles generally comprise of the oldest in the fleet, some of which are more than 20 years old.

While the taxi trade has been adversely impacted by the pandemic, these solutions allow for the vast majority of operators to become compliant with most of the cost provided through the grant funding. The expectation is that the recovery from the

pandemic will continue and those operators who wish to continue to operate taxi services in the city post LEZ implementation should take advantage of the funding available at the earliest opportunity to ensure they meet the emission standards by the implementation date.

#### 4.1.3 Compliant Vehicle Availability

As discussed in the previous section, the vast majority of the taxi fleet (90.8%) are either LEZ compliant, or can be made so through a grant funded retrofit solution. The remaining 9.2% of the fleet will have to explore some form of vehicle replacement if the operators wish to continue to operate a hackney taxi within the LEZ once enforcement begins.

Following engagement and consultation, the meeting of the Licensing and Regulatory Committee on the [14<sup>th</sup> August 2019](#) agreed, “To the removal of the 5 year age policy for all taxi applications for new and substitute vehicles subject to the replacement vehicle being a newer vehicle than that is currently licensed”. This was a direct intervention to increase the options available to operators of vehicles unsuitable by reason of age for retrofit.

The objection cites the decreased availability of suitable vehicles in the second hand market available for those operators to take advantage of this option. While the market for second hand taxis may fluctuate, this remains an option for many. Other options include new vehicle purchase with interest free loans available for certain models through the Energy Saving Trust. It should be noted that operators may take advantage of the £2500 grant for disposal of a non-compliant vehicle.

Operation of a taxi business will on occasion require capital investment costs. The actions of GCC, Transport Scotland and the Scottish Government have served to significantly reduce the capital investment required for the taxi trade to become compliant with LEZs in Scotland.

#### 4.1.4 Net Zero Targets

The primary objective of the LEZ is to contribute towards meeting the air quality objectives in relation to NO<sub>2</sub> levels. Another objective of the Glasgow LEZ is to, “Contribute towards the emissions reduction targets set out in Part 1 of the Climate Change (Scotland) Act 2009 through the promotion of low and zero emissions vehicles and the promotion of public and sustainable transport options.”

The emission standards for Scottish LEZs are set in terms of oxides of nitrogen (NO<sub>x</sub>) emissions and do not specifically set limits on CO<sub>2</sub> emissions. Therefore the CO<sub>2</sub> reduction purely from emission standards is likely to be small, as set out in the Scottish Environment Protection Agency report [Consideration of Carbon Dioxide Emissions Within an LEZ Scheme: Glasgow](#).

The CO<sub>2</sub> reduction element of the scheme objectives will be achieved through the ancillary promotion methods detailed above and through the co-benefits between the

LEZ and other confirmed GCC policies such as the Glasgow Transport Strategy, the City Centre Transformation Plan, Glasgow's Climate Plan and other initiatives such as the Glasgow Car Free Zone and the Avenues Project.

Progress has already been made in this respect with the direct use of LEZ funding to introduce bus gates at Union St and Oswald St. LEZ funding was also allocated to the Public Transport Provision fund which saw the electrification of all Co-Wheels city centre car club vehicles with associated charging facilities (including public charging), expansion of the NextBike cycle hire scheme to an additional six locations (including the provision of electric bikes) and improvements to traffic signal infrastructure at two locations to reduce congestion. GCC will continue to explore other initiatives where LEZ actions can improve upon projects to reduce CO2 emissions, particularly within the city centre.

It should be noted that, while the emission standards do not mandate low or zero emission vehicles, these vehicles are inherently LEZ compliant and the LEZ can act as an incentive for their increased adoption. However, with NO2 levels increasing to unacceptable levels as the pandemic recovery continues, it is not acceptable to delay introduction on the basis of increased EV uptake at a later date.

Whilst legislation and regulation allow for the provision of a maximum of one year for a time limited exemption, this is unlikely to result in a significantly improved market for taxi EVs. Although this can be extended if the LEZ authority deems necessary, it cannot be determined beyond one year initially and cannot be conditional on EV uptake at a later date since this is outwith the scope of the LEZ emission standards. Any changes to emission standards or exemptions can only be made after changes to national LEZ legislation. This should give comfort that the current standards will apply to existing registered taxis for a significant period of time. It is also important that the investment required to meet LEZ standards is acknowledged in the consideration of the lifespan of that investment while incentivising the uptake of zero emission capable vehicles in the medium to long term.

#### 4.1.5 National LEZ Enforcement

LEZs are being introduced in the four largest cities in Scotland in response to longstanding breaches of the air quality objectives. All LEZ cities are free to design and implement their LEZs within the context of the legislation and regulations, reflecting their own individual circumstances. While the other cities have chosen to adopt a two year grace period before adoption, Glasgow has committed to implementing the LEZ as soon as possible following the initial delay. This approach has included consideration of a number of factors such as the nature and extent of the pollution levels, the expected recovery from the pandemic and impact on future pollution, the delay from the original timescale and the financial aid available to affected groups and individuals.

Glasgow has historically recorded the highest levels of NO2 pollution of any Scottish city and has been the first to monitor a return to NO2 levels above the objective during recovery from the pandemic. Therefore, taking into account the delay in the original

timescale due to the pandemic, it is reasonable that Glasgow enforce the LEZ at the earliest opportunity to reduce the health impacts on those who live, work and use our city centre for retail and leisure and who would continue to be subject to harmful levels of pollution during any further delay to the LEZ.

This section of the objection also states that Gordon St is the only area where NOx emissions can be significantly attributed to the taxi trade. This is not the case. Source apportionment undertaken under the National Modelling Framework by the Scottish Environment Protection Agency shows that NOx emissions from taxis represent around 11% of the total road transport emissions within the proposed LEZ area. However, this contribution rises significantly in those streets which record the highest pollution levels. Therefore, the contribution from taxis is significant across the LEZ, particularly in those streets where NO2 levels are highest such as, but not limited to, Gordon St. Exemption from the LEZ would significantly reduce the effectiveness of the proposals and the likelihood of achieving its aims.

The objection suggested action against idling vehicles could deliver the required air quality benefits. While idling vehicles contribute to emissions, ranking taxis tend to move frequently and this makes idling enforcement difficult. Officers from GCC will continue to visit suspected idling locations and advise drivers of their responsibilities as well as enforce idling regulations wherever possible or necessary. However, idling enforcement cannot be a substitute for improved vehicle emissions standards.

Of the four Scottish LEZ cities, only Glasgow and Edinburgh operate a significant hackney taxi fleet. However, the licensing conditions between the two cities in respect of vehicles differ significantly. Edinburgh produced an update to their policy in 2021 stating, "Effective 1 April 2023 no Taxi or PHC will thereafter be accepted for test unless it is Euro 6 or above. Separately to this requirement, any Euro 5 Taxi or PHC that has passed its test and is licensed prior to 1 April 2022 may continue to be operated until its licence expires or 31 Mar 2023 whichever date is earliest." While there is an appeals process for an exemption on an individual basis, to be considered by the licensing committee, the general condition applies. Therefore Edinburgh taxis submitting for their annual test must be LEZ emissions standard compliant from 1 April 2023. Additionally, taxis licensed in Edinburgh are subject to a maximum age of 10 years, significantly reducing the proportion of the fleet which is non-compliant with the LEZ emission standards.

#### 4.1.6 Taxi Objections Response Summary

The taxi sector is eligible for substantial grant funding to achieve compliance with the LEZ. More than 90% of the existing fleet is either already compliant or eligible for retrofit funding. Of the remainder, mainly those vehicles without a retrofit solution due to age, aid is available in the form of disposal grants and/or interest free loans for certain vehicles. Alternatively, a second hand vehicle, eligible for retrofit, may be purchased and brought to LEZ compliance through the grant funded retrofit. Although uptake of these funds has been less than expected thus far, the recovery from the

pandemic and the time remaining before enforcement begins should allow the vast majority of operators to become compliant should they wish to do so.

Although the uptake of electric vehicles is preferable in respect of air quality and carbon emissions, it is not a requirement of the LEZ. The LEZ scheme will contribute towards achieving climate change targets as detailed above and the scheme is fully compliant with this objective. Achieving the air quality objectives for NO<sub>2</sub> is the priority and would be negatively impacted by introducing a delay pending an uncertain improvement in the availability and cost of electric taxis.

All LEZ cities are free to design and implement their LEZs within the context of the legislation and regulations, reflecting their own individual circumstances. For Glasgow it was determined that introducing the LEZ as soon as possible following the delay due to the pandemic was most appropriate given the particular circumstances which apply in the city. The urgency of this requirement in Glasgow can be seen in the return of pollution levels in excess of the objectives in 2021 as the pandemic recovery progresses.

Emissions from the taxi fleet make a significant contribution to the high NO<sub>2</sub> levels experienced within Glasgow city centre. Due to the age and composition of the fleet this is more of an issue for Glasgow than it is for the other LEZ cities. Differences in licensing conditions across the Scottish LEZs also means that, in general, the Glasgow fleet have a longer period than other cities to become compliant. A Glasgow city LEZ which exempted taxis would not be as effective in achieving the air quality objectives across the city centre. It should also be noted that taxi drivers suffer particularly high personal exposure to air pollution and air quality improvements benefit them more than most other sectors of the population. This is reflected in the fact that taxi operators are not unanimous in their opposition to the LEZ. Several taxi operators have written to express their support for the measures and the existing timescale, both during the previous consultations and during the objection period.

## 4.2 Non-Taxi Objections

The 11 non-taxi objections included the themes detailed in section 3.2. These are addressed below.

### 4.2.1 Adverse impact on those with low incomes.

The potential impact of the LEZ on those with low incomes has been extensively considered, including within the [Integrated Impact Assessment](#) on the proposals. The primary objective of the LEZ is to reduce air pollution by reducing the emissions profile of vehicles which enter, and the emission standards favour newer vehicles since emissions have improved with time.

However, owners of a non-compliant vehicle do not necessarily have to invest in a new vehicle if they wish to continue to drive into the LEZ. Since diesel vehicles, from

September 2015 onwards, and petrol vehicles, from 2006 onwards, are generally LEZ compliant, by the time of enforcement of the LEZ a relatively small proportion of the vehicle fleet will be non-compliant. Diesel vehicles around 8 years old and petrol vehicles around 17 years old will still be able to enter the zone without penalty. As well as affecting relatively few vehicles this opens up a significant portion of the second hand car market to those seeking a compliant vehicle. It is entirely possible for someone affected to “trade down” their vehicle from a non-compliant diesel to an older compliant petrol vehicle.

The Scottish Government have also introduced various funding options for those affected by the LEZ. These options are means tested to target those least able to afford any potential costs. Eligible households can apply for a £2000 cash grant to incentivise disposal of a non-LEZ compliant vehicle. This will include an additional offer of up to two £500 mobility grants or *Travel Better* vouchers for people to purchase a bike, e-bike or public transport voucher.

In 2021/22 £3.7M was allocated for the support fund and this is expected to be fully subscribed. As of January 2022 uptake of the various funds are as seen in the table below.

<b>Glasgow</b>	
<b>Paid Grants</b>	<b>FY 21-22 YTD</b>
Households (disposal grant)	377
Business (disposal grant)	192
Households (Travel Better grant)	175
Business (retrofit)	19

This represents a total spend in the Glasgow area until January 2022 of £1,474,460.00. Glasgow City Council have made representations to Transport Scotland and the Scottish Government that this funding be extended and continued to include the period until enforcement across the LEZ cities begins.

#### 4.2.2 Adverse impact on businesses.

Impacts on business has been similarly considered with the majority of businesses, especially those involved in logistics operations, predicted to be fully LEZ compliant by the time of enforcement. It is noted that some smaller businesses may find themselves having to become LEZ compliant and improve the emissions from their

vehicles sooner than they would normally have done in the course of their business planning.

The LEZ support fund contains provisions for sole traders and microbusiness affected in this way. The disposal grant is available to them at an increased rate of £2500 for the disposal of a non-compliant vehicle. To be eligible a business must have an operating site within 20km of a proposed LEZ, employ fewer than 9 full-time employees and meet certain turnover and balance sheet conditions. Full details are available at <https://energysavingtrust.org.uk/grants-and-loans/low-emission-zone-support-fund-for-businesses/>. In the year to date 2021/22, 192 vehicles belonging to businesses in the Glasgow area have been disposed of under this scheme.

Some objections were based on the perceived impact of the LEZ on footfall within the city centre. For the purposes of transport modelling of the LEZ it was assumed that each journey currently undertaken by a non-compliant vehicle would be replaced by the same journey by a compliant one. This represents a worst case scenario in terms of both transport and air quality modelling. It is not predicted that LEZ measures on their own will have a significant impact on traffic figures within Glasgow city centre. However, it is expected that some people affected by the introduction of the LEZ will choose to access the zone by public or sustainable transport. This is incentivised by the inclusion of the mobility grant or *Travel Better* vouchers within the LEZ support fund. As of January 2022, 175 of these have been administered to applicants within the Glasgow area.

One of the objectives of the Glasgow LEZ is to, “Improve the amenity of Glasgow through the promotion of the Glasgow City Council Strategic Themes of A Vibrant City, A Healthier City and a Sustainable and Low Carbon City.” Improvements in the air quality within the city centre will make the area more attractive for people to work, shop and visit, thus acting as an incentive for people to visit more regularly and for longer. This will in turn contribute to making the area more attractive for businesses to operate within.

It should be noted that the Glasgow Transport Strategy seeks to reduce total car kilometres travelled by 30% by 2030. This goes further than the Transport Scotland target to cut vehicle kilometres across the country by 20% by the same date. It is of note that, these measures are intended to promote alternative transport choices, make our city centres a more attractive place to be, and therefore not impact negatively on footfall for commercial businesses.

#### 4.2.3 Poor / expensive public transport.

Glasgow is one of the best connected cities in the UK with an extensive local rail and bus network and the city centre acting as a transport hub at several locations. However, early in the process of developing the LEZ it was identified that buses in particular were a major contributor to the air pollution problems. This was the reasoning behind introducing the LEZ for scheduled service buses first in 2018. This has seen a rolling improvement in the emission standards of buses which is already showing benefits in the monitored pollution levels.

At the same time it was recognised that improved public transport was also a core part of the answer to the city's air quality problems. LEZ funding has been used to install bus gates at Union St and Oswald St, improving bus speeds and emissions in congested areas where the highest pollution levels are recorded. Scottish Government funding has also been provided to retrofit relatively new but non-compliant buses to Euro VI standards. Additionally, funding has been provided under the Scottish Ultra Low Emissions Bus Fund and its successor, the Scottish Zero Emission Bus Fund, to incentivise the uptake of electric buses. This has already resulted in the provision of significant numbers of new electric buses within Glasgow and a firm program for the delivery of more by operators.

The Glasgow Bus Partnership (GBP) brings together a number of organisations as a voluntary partnership. This includes the eight Glasgow City Region local authorities, Strathclyde Partnership for Transport, bus operators (through their new alliance, GlasGo) and bus passenger representative groups (to address current challenges to bus travel and to improve the passenger experience for communities across the Region).

The vision of the Glasgow Bus Partnership is of a City Region where bus services form part of a network of connectivity, enhancing the opportunities and wellbeing of those who live or visit here - providing safe, affordable, enjoyable connections and reducing road congestion, noise and air pollution.

Aims of the GBP include:

- Improving bus priority mechanisms and reducing congestion to improve bus journey times and reliability
- Ensuring buses are given higher priority in any future city planning
- Improving the accuracy of real time passenger information and exploring options to introduce an integrated ticketing system

The GBP also supports the delivery of Glasgow's LEZ and brings together key partners to develop bus priority funding bids to [Transport Scotland's Bus Partnership Fund](#).

The work of the GBP seeks to positively impact upon the affordability and accessibility of the bus network and assist with creating the conditions that will increase bus patronage. A faster, cheaper, and better-connected bus network will benefit all bus passengers across the City Region as well as the environment.

#### 4.2.4 Electric vehicle cost / infrastructure.

A number of objections cited the high cost of electric vehicles as a reason for objection. As noted previously, the LEZ does not require a vehicle to be electric to enter the zone and this is a common misconception which will be addressed through targeted communication and information campaigns.

#### 4.2.5 Penalty charges are too high.

Penalty charges are set within legislation and regulations and are common to all LEZs in Scotland. They are set at a level, and rise with subsequent entries, to discourage entry to the LEZ by non-compliant vehicles. The penalties are set at a level to serve to exclude non-compliant vehicles from the zone rather than to serve as a cost for entry. This is a decision taken to minimise the number of entries into an LEZ by non-compliant vehicles.

#### 4.2.6 Pandemic impacts.

The impacts of the pandemic have been extensively considered throughout the development of the LEZ. These have been subject to an [Uncertainty Summary Note](#) and a more detailed [LEZ Modelling Report](#) exploring likely recovery scenarios. The pandemic has had an impact on the community in terms of their ability to prepare for the LEZ and on the legislative process for the establishment of the LEZ itself.

The pandemic has resulted in a delay in enforcement of the Glasgow LEZ from 31<sup>st</sup> December 2022 to 1<sup>st</sup> June 2023 and this will help towards allowing people and businesses extra time to prepare. The impacts of the first lockdown saw NO<sub>2</sub> levels meet the objectives for the first time since measurements began. However, this has not continued as recovery progresses with 2021 observing a return to objective exceeding levels. With the projected recovery process, it is likely that these levels will increase further as economic activity and traffic levels and patterns continue to recover to pre-pandemic levels.

#### 4.2.7 Money making scheme for the Council

The LEZ cities are reliant on Scottish Government funding for the establishment and implementation of LEZs, in accordance with the Government policy to introduce them to the four largest cities. The penalty charges are set at a level to discourage entry and therefore the LEZs are expected, and intended, to receive limited income in terms of penalty charges. It is expected that LEZs will be revenue negative for the cities that introduce them and be reliant on ongoing funding for their operation. The net costs of operating an LEZ is likely to increase over time as fewer vehicles are non-compliant and therefore fewer penalties are issued.

The purpose of the LEZ is to improve air quality within the zone and the surrounding areas. In the unlikely event that any extra revenue is received as a result of its operation, legislation states that this must be used to facilitate the achievement of the schemes objectives i.e. towards further efforts to improve air quality.

#### 4.2.8 Personal impact.

An LEZ is designed to improve air quality through excluding the most polluting vehicles from an area of high pollution. As an exclusionary policy it is inevitable that it will have

an impact on a portion of the population who will have to change either their transport choices or their vehicle as a consequence.

The choice of emission standards, the implementation of the various retrofit and support options and the notice that has been given of the measures have all sought to minimise the impacts on people as far as possible while still achieving the aims of the scheme in a reasonable timescale. This support has also been targeted to help those who need it most.

#### 4.2.9 Won't produce the required reduction in pollution.

The largest contribution to poor air quality within the LEZ is from road transport. While previous emission standards have not produced the real world reductions in emissions that were predicted, the emission standards that will apply to Scottish LEZs have shown considerable improvement. Implementing the LEZ is modelled to reduce total NOx emissions from road traffic within the zone by just over 50%. Thus demonstrating that it is a small number of vehicles which have a disproportionate impact on air quality. The predicted improvements in air quality are demonstrated within the [Glasgow Low Emission Zone – Evidence Report](#) by SEPA.

Modelling and monitoring of the impact of phase 1 of the LEZ was also conducted by SEPA, demonstrating that introducing the rolling improvement in bus emissions was beginning to have a positive impact on pollution levels. This report is available [here](#).

The available evidence clearly shows the LEZ will have a significant and beneficial impact on air quality.

## 5 Conclusions

Low emission zones are designed to improve air quality by excluding those vehicles which do not meet the emission standards from areas of high pollution. As an exclusionary policy, their introduction will unavoidably have some degree of impact on affected individuals and groups. Those who would have continued to drive into the zone using a non-compliant vehicle will have to adjust either their mode or method of travel.

The emission standards that apply to LEZs in Scotland are such that, by the time of enforcement, a relatively small proportion of the fleet will be directly impacted. However, it is this part of the fleet which has a disproportionate impact on emissions and resulting pollution levels.

Recognising that some people and sectors may find it more difficult to adjust to the introduction of an LEZ, the Scottish Government has made available the LEZ support fund in various forms. This is a targeted and proportionate response, making financial aid available to those least able to adapt to the changes and encouraging the overall aim of a shift from personal vehicle use, particularly within our city centres.

The hackney taxi fleet in Glasgow is unique from other taxi fleets in the country in that it comprises a large number of older, non-compliant vehicles. This results in this sector being a significant contributor to the air quality problems experienced within the zone. However, the taxi fleet is also an important part of the transport mix within a busy and vibrant city centre, serving workers, residents, tourists and the night time economy. For these reasons, a generous program of support for taxi improvement is a core element of the LEZ support fund.

The impact of the pandemic has been severe for the taxi sector in particular. This is a partial reason for the lack of uptake of the support available to operators thus far, given that there is still the requirement for an operator contribution. However, the expected recovery, the support available, and the delay in LEZ enforcement, all serve to suggest that this sector should be able to become LEZ compliant in the time remaining before enforcement, at a reasonable contributory cost, should they choose to do so.

For the above reasons, and the more detailed responses to the particular grounds for objection detailed earlier, it is proposed that no further changes be made to the LEZ final scheme design and it be implemented according to the scope and timescale previously published.