Transport and Environment Committee

1.30pm, Tuesday, 26 October 2021

Low Emission Zone – Consultation and Development

Executive/routine	**Executive**
Wards	**All**
Council Commitments	18

1. Recommendations

1.1 Transport and Environment Committee is asked to:

1.1.1 Note that the Council has now concluded the statutory consultation on the proposed Low Emission Zone (LEZ) scheme and has also completed non-statutory public consultation, as approved by Committee in June 2021;

1.1.2 Acknowledge that analysis and consideration of feedback from consultations has informed a review of the proposed LEZ scheme;

1.1.3 Note that, on consideration of the consultation feedback, no changes are proposed to the LEZ scheme but that concerns around impacts, such as vehicle displacement and financial implications will be addressed in the development of the Network Management Strategy and in raising awareness of support funds for vehicle adaptation;

1.1.4 Approve the LEZ scheme (as presented in June 2021) and agree to proceed with the publication of the scheme for a period of 28-days in line with statutory requirements; and

1.1.5 Approve further progress on the design and delivery of the scheme to meet the agreed implementation timeline.

Paul Lawrence

Executive Director of Place

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Report

Low Emission Zone – Consultation and Development

2. Executive Summary

2.1 Edinburgh, along with Aberdeen, Dundee and Glasgow, is empowered by the Scottish Government to implement a Low Emission Zone (LEZ) to protect public health and reduce harmful emissions from traffic. All four cities are following a timeline for implementation by May 2022, with enforcement commencing at the end of a 'grace period', the length of which is to be determined by each local authority.

2.2 The consultation on Edinburgh's proposed city centre LEZ scheme ('the scheme') was held over a period of 12 weeks and included statutory and non-statutory consultees. Analysis of the consultation feedback has been undertaken to inform whether any changes to the scheme's design should be made and how concerns regarding the scheme's impacts can be addressed.

2.3 Overall, support for the proposed LEZ is mixed, but this appears to have less to do with the principle of improving air quality, and more to do with the practical impacts for people based within and those travelling into the zone. Careful consideration of how impacts can be mitigated is therefore key to addressing feedback.

2.4 On consideration of the consultation feedback, no changes are proposed to the scheme's boundary, the length of the grace period, and the proposal not to apply local exemptions in addition to national exemptions. Concerns raised around the impacts from the scheme, such as vehicle displacement and financial implications associated with upgrading vehicles, will be addressed as part of developing the Network Management Strategy (NMS), working in partnership with the most impacted communities, and by the adoption of measures designed to ensure widespread awareness of funding available to support vehicle adaptation. Overall, the impacts from the scheme are considered to be reasonable and proportionate having regard to the overall benefits.

3. Background

3.1 Edinburgh's LEZ has been in development since 2016, with support from the Scottish Environment Protection Agency (SEPA), Transport Scotland, the Scottish Government and other key partners. The Transport (Scotland) Act 2019 (the Act) and related regulations (the Regulations) now form the statutory framework for the

introductions of LEZs. The Council has also adopted non-statutory strategies to help inform the LEZ's development, including extensive public consultation undertaken in 2019.

3.2 The Scottish Government's initial intention was that LEZs would be introduced for Scotland's major cities by 2020 but this timeline was delayed due to the Covid-19 pandemic. A revised national timeline aims to see LEZs introduced by the end of May 2022, subject to local authority and ministerial approval. Thereafter, enforcement begins once the grace period has ended. In Edinburgh's case, this would be June 2024.

3.3 Full details of the development timeline, strategies and proposed LEZ scheme for consultation are outlined in the Council's Transport and Environment LEZ report approved in June 2021.

3.4 The City Mobility Plan (approved by Committee on 19 February 2021) confirms a commitment to developing a LEZ scheme along with other new and related measures aim to tackle congestion and support cleaner air, including freight rationalisation, Workplace Parking Levy (subject to consultation), and, potentially, a 'Pay as you Drive' scheme. A further range of initiatives are already in place to support the move towards low emission transport. These include investment in public transport including Trams extension, expansion of the active travel network, electric vehicles charging infrastructure, expansion of controlled parking zones and the parking permit diesel surcharge. The phasing out of older taxi and private hire vehicles is also being supported by the licensing regime.

3.5 The Council is also currently developing an Air Quality Action Plan. LEZ is one of a suite of actions to be delivered as part of that plan to tackle poor air quality.

4. Main Report

4.1 Proposals for consultation and engagement on the proposed LEZ scheme were approved by Committee in June 2021. Officers have subsequently completed the consultation with statutory consultees in accordance with the requirements of the Act and the Regulations, over a 12-week period from 28 June to 20 September 2021. Over the same period, officers also concluded a non-statutory consultation exercise to enable members of the public (including residents and non-residents) and other stakeholders an opportunity to comment on the scheme.

4.2 The consultation invited comment on key aspects of the LEZ scheme, including the overall scheme as proposed, the boundary, the grace period approach and length and local exemption approach. It also sought to gauge levels of awareness about support funding available.

4.3 A range of tools were used to gain views. These included meetings, social media (~2 million 'impressions', i.e. the number of times posts have been viewed), bus shelter and large format digital displays on some key routes in the city, letter drops

to all householders and businesses within the proposed LEZ (~19,000 properties), radio advertising ('Total Forth' covering an area of 1.172m population), emails to all active parking permit holders in Edinburgh (~25,000 drivers), and an online questionnaire supported by information on the Council's LEZ webpages.

4.4 Statutory consultees were approached directly and invited to comment. In addition, over 500 organisations were contacted and invited to take part in the consultation.

4.5 A full list of stakeholder consultees (statutory and non-statutory) is available in Appendix A. Appendix A also includes details of the feedback from key stakeholders and the Council's responses, as well as a summary of the questionnaire analysis. A comprehensive analysis of the latter is available in Appendix B.

4.6 The questionnaire received 5,051 responses (4,976 responses from individuals and 75 responses on behalf of organisations). An additional 26 written responses were also received. Respondents represented:

4.6.1 A breadth of stakeholders, ranging from members of the public to businesses and organisations located both within and outwith the LEZ, groups representing private, public and third sectors, transport/logistics, community and interest groups;

4.6.2 A mix of demographics in terms of age, gender, (dis)abilities, albeit with an older male bias (60% over 45 years, 60% male, 12% disabled); and

4.6.3 A mix of private and public transport users.

4.7 Statutory consultees and other respondents presented a range of views on the scale of the LEZ scheme, but in general supported the LEZ in principle. Public support for action to improve air quality is also evidenced by previous consultation findings conducted by the Council in 2019 and by Transport Scotland in 2017 and 2019/20.

4.8 Overall, results from the questionnaire suggest broad support for the proposed approach for one grace period applying to all those affected and for proceeding with no local exemptions. There are mixed views on the LEZ as proposed, with an even split between those in favour or opposed. More respondents tended to be opposed to the boundary and length of grace period.

4.9 An Integrated Impact Assessment (IIA) (Appendix F) has been undertaken to support the assessment of impacts of the scheme across a range of groups. Where potential negative impacts have been identified, mitigation is suggested with key points summarised in this report.

4.10 The Council has taken account of feedback from all stakeholder consultees (statutory and non-statutory). In the preparation of this report consideration has been given to all material considerations. From the feedback it has been possible

to identify a number of key issues that require to be addressed in some detail, these are summarised below.

4.11 **Boundary**

4.11.1 **Key issues raised**: Thematic analysis suggests that concerns are mostly centred on displacement (traffic and air quality) impacts. Other concerns related to parking displacement impacts in residential areas, availability of on-street electric vehicle charging and whether air quality would improve in areas beyond the boundary (St John's Road).

4.11.2 **Impact:** Certain boundary locations were identified in relation to these impacts, including schools (Preston Street/Tollcross), potential unofficial diversion routes, impact on greenspaces (Holyrood Park/Calton Hill) and areas which could experience increases in residential traffic (West End).

4.11.3 **Comment:** The National Low Emission Framework (NLEF) requires an evidence-led approach to ensure LEZs tackle areas where Scottish Air Quality Objectives (AQOs) are exceeded, or are likely to be exceeded, and transport is identified as the key contributor. The LEZ boundary was developed taking account of the National Modelling Framework (NMF) process, including potential air quality and traffic impacts. Much of this work has previously been presented to Committee including air quality and traffic modelling studies, however SEPA have continued to develop the Air Quality Model for Edinburgh, which has allowed for further in depth analysis of the extent of the impacts.

4.11.4 Appendix C details the most recent SEPA report which should be highlighted in response to the consultation feedback. It details analysis on the area of most significant impact from the Scheme – Palmerston Place and Chester Street, and shows that new exceedances are expected at the façade at Palmerston Place. However, the future scenario (after LEZ fully embedded) does not indicate any exceedances in this area, or at most facades across the entirety of the boundary. The analysis also found similar results for sensitive receptors such as schools and nurseries.

4.11.5 It should also be noted that an analysis considering the impact of an Extended Urban Area LEZ considers there to be a benefit however it is small and, on balance, would not be justifiable.

4.11.6 Overall, the NMF process supports the development of the Scheme as proposed.

4.11.7 **Mitigation**: One of the main objectives of the scheme is to minimise the potential impact from traffic displacement across the road network (June 2021 report).

4.11.8 To mitigate against potential traffic/air quality impacts and to ensure the traffic network functions effectively, without providing significant additional capacity, the Council is developing a Network Management Strategy (NMS). Its purpose is to identify specific measures at locations around the boundary such as junction reconfigurations, optimising signals staging, improved signage and better links to the Urban Traffic Control system and will be developed in partnership with communities. The NMS will seek to build on previous engagement/suggestions by communities as much as possible. Developing a complementary signage strategy will also form part of the NMS to help redirect non-compliant traffic in advance of the city centre, reducing potential displacement impacts.

4.11.9 The Council is committed to reducing overall traffic levels and promoting modal shift/sustainable transport across the city via CMP, the Edinburgh City Centre Transformation Programme, tram development, active travel initiatives and the Bus Partnership Fund. In the West End, the City Centre West East Link supports modal shift and will contribute to reductions in traffic. The ongoing development of the scheme will ensure that it is implemented in synergy other all relevant Council strategies, and the wider Air Quality Action Planning which looks at air quality improvement across the city.

4.11.10 An LEZ annual progress report is required by the Regulations, on the operation and effectiveness of the scheme. This will be informed by a robust monitoring regime that will inform the NMS and may cover public transport journey times, traffic surveys and public opinion surveys as well as the Council's well established air quality monitoring network. Traffic monitoring to measure traffic displacement will be undertaken both prior to and during the scheme's operation in 2024 to ensure it is evidence-led and responsive.

4.11.11 The NMS will be aided by the ongoing communications and engagement campaign, that will re-focus on: promotion of support funds available for adaptation to the LEZ and promoting the benefits of cleaner air and sustainable travel initiatives.

4.11.12 **Recommendation:** No changes are recommended to the boundary. The consultation responses will be taken into account during the development of the NMS and monitoring regime.

4.12 **Grace period**

4.12.1 **Key issues raised:** Generally, there was support for the grace period approach that all parties are affected equally. In terms of the length of the grace period, the proposed two year period (i.e. scheme to be operational by June 2024) is supported by 24% of all questionnaire

respondents (more than those who would like it to be shorter) and a higher proportion of organisations (29%). Statutory consultees generally showed support for the two year grace period, including the bus and coach sector and members of other transport/logistics organisations.

4.12.2 **Impact:** Managing the financial implications of upgrading vehicles was the most common concern.

4.12.3 **Comment:** The LEZ scheme aims to balance the benefits of improved air quality for public health with wider economic and societal impacts, especially following the Covid-19 pandemic.

4.12.4 The Council has undertaken an extensive study into the far-reaching impacts of the LEZ by way of an IIA that considered the impacts on equality, health, wellbeing, human rights, environment, sustainability, and the economy (see Section 7 and Appendix F).

4.12.5 Scotland's LEZs have been in development since 2016 but the national timeline was delayed due to the pandemic. If the LEZ is enforced later than 2024, improvements in air quality and the wider benefits of the LEZ will be delayed.

4.12.6 **Mitigation**: A range of mitigation measures are identified as part of the IIA. In general, in response to the main issue received through the consultation, the Council (in partnership with the Scottish Government) will work to ensure that support funds are accessible and that messaging on and support for vehicle adaptation are promoted through an effective LEZ communications campaign. A grace period of two years will provide a reasonable period of time for these elements to become established, whilst ensuring that the benefits of the LEZ are also achieved within a reasonable timescale. A summary of the financial support available and eligibility for that support is summarised in the IIA.

4.12.7 The two year grace period allows sufficient time to develop and deliver boundary mitigation measures and monitoring strategy by way of a network management strategy.

4.12.8 **Recommendation:** Overall, it is considered that the approach taken is proportionate to achieving air quality standards and mitigating financial impacts. It is therefore proposed that no changes are made to the grace period approach and length.

4.13 **Local exemptions**

4.13.1 **Key issues raised:** Generally, there was good support for the no local exemptions approach from most respondents. However, it was recognised that there may be exceptional circumstances when an exemption would be required. Concerns were raised by stakeholders that

the LEZ may disproportionately impact on low income households and microbusinesses.

4.13.2 **Comment:** Granting local exemptions, in addition to nationally agreed exemptions (e.g. blue badge holders), risks undermining the overall benefits of the LEZ. The Scottish Government provides LEZ support funds to help mitigate adverse financial impacts of Scotland's LEZs for those who are not covered by national exemptions. The availability of these funds will help off-set the impact of the scheme for persons falling into this category. On balance, this is considered to provide a reasonable safeguard.

4.13.3 **Recommendation:** In response to the consultation, no changes are proposed to the approach not to include local exemptions. However, a provision to allow for the creation of local exemptions in exceptional circumstances will be included in the final scheme.

Enforcement

4.14 The Enforcement Strategy was set out in the June 2021 committee report and is being developed alongside the progression of the scheme details.

5. Next Steps

5.1 Though the consultation stage of the scheme has formally closed, engagement will continue with key stakeholders throughout the design and delivery phases.

5.2 Should Committee accept the scheme as recommended, this will become the Council's 'Final Scheme'. The next step in the statutory process is the publication of the Final Scheme which will initiate a statutory period of a minimum of 28 days during which formal objections to the scheme can be lodged.

5.3 In early 2022 Committee will need to consider any objections and whether they are well founded and whether any adjustments ought to be made to the Final Scheme. Committee will also be required to consider whether it considers an examination is required at this stage in the statutory process for the LEZ.

5.4 At the conclusion of the objection period and after objections have been considered, the Final Scheme needs to be submitted to Scottish Ministers for approval. At this stage Scottish Ministers may determine that an examination is appropriate.

5.5 An examination at any stage of the process would result in the national indicative timeline for the LEZ scheme (Spring 2022) being delayed. This is, however, only one of a number of considerations that both the Council and Scottish Ministers should take into account when deciding whether an examination is appropriate. Other considerations will include the extensive level of consultation that has preceded the objection period.

5.6 If the scheme is modified to any significant extent, in light of objections received, there may be a need to restart the LEZ process, with statutory consultation afresh etc.

6 Financial impact

6.1 The delivery of the LEZ scheme as proposed commits the Council to significant capital and revenue expenditure. While the Scottish Government (via Transport Scotland) is contributing funding of £1,045,000 in the current financial year, there remains a substantial funding gap. Appendix E sets out the estimated costs associated with the scheme and the current funding available.

6.2 Further funding from Transport Scotland will be made available to deliver LEZs in financial year 2022/23 but is forecast to be significantly less than offered in 2021/22. Grant funding will be provided to deliver enforcement aspects otherwise not delivered in 2021/22 (associated civil works e.g. linage and signage of diversion route) and to continue communications. All other costs relating to LEZ will be incurred by the Council.

6.3 Ongoing maintenance costs will not be covered by future grant support from Transport Scotland. Revenue can only be generated from 1 June 2024 and is anticipated to be limited due to the deterrent nature of Scotland's LEZ enforcement system; operational costs (~£400,000 p.a) are unlikely to be offset by revenue. Officers are developing a plan to ensure that revenue costs are only incurred where necessary. This relates mainly to the point at which enforcement systems are installed and maintenance and staffing costs require to be incurred and how this will align with the enforcement of the LEZ commencing.

6.4 Transport Scotland are considering requests from the Council (and other cities) about major unfunded elements of the LEZ. If funding is insufficient, costs will need to be met from the reallocation of capital and revenue budgets within the Place Directorate.

7 Stakeholder/Community Impact

7.1 A review of stakeholder and community involvement is outlined in section 4 of this report, June 2021 committee and in 2019.

7.2 A summary of an IIA was presented to Committee in 2019 to outline the potential impacts of the LEZ. This has been updated as part of the 2021 consultation process (see Appendix F).

7.3 A Strategic Environmental Assessment (SEA) concluded that the impacts of the LEZ would be positive (June 2021).

8 Background reading/external references

8.1 Transport and Environment Committee – Low Emission Zone Update (Item 10, The City of Edinburgh Council, October 2019)

8.2 Transport and Environment Committee – Low Emission Zone – Preferred Scheme for Consultation (Item 7.4, The City of Edinburgh Council, June 2021)

8.3 Edinburgh's City Mobility Plan (The City of Edinburgh Council, approved February 2021)

8.4 Low Emission Zones Scotland (Transport Scotland)

8.5 LEZ Support Funds (Energy Savings Trust/Scottish Government)

9 Appendices

9.1 Appendix A – Consultation Summary and Responses

9.2 Appendix B – Consultation Analysis (Scott Porter Research & Marketing Ltd)

9.3 Appendix C – National Modelling Framework (SEPA)

9.4 Appendix D – Adaptation Funding & Policy Update

9.5 Appendix E – LEZ Scheme Delivery – Estimated Costs and Funding

9.6 Appendix F - Updated Integrated Impact Assessment

APPENDIX A – Consultation Summary & Responses

Overview

1.1 Stakeholders were directly invited to comment on the proposed LEZ scheme during the consultation period, via workshops, written responses and an online questionnaire (table 1A & 2A).

1.2 Statutory consultees, in accordance with the Low Emission Zones (Scotland) Regulations 2021, Transport (Scotland) Act 2019 and Transport Scotland's unpublished/draft Low Emission Zone Guidance, were approached for engagement with the proposed LEZ scheme and are listed:

- Scottish Environment Protection Agency (SEPA)
- Nature Scot (formerly Scottish Natural Heritage)
- Historic Environment Scotland (HES)
- Neighbouring local authorities
- Relevant regional transport partnership (i.e. SEStran)
- Relevant health board (i.e. NHS Lothian)
- Representatives of:
  - Road haulage industry
  - Bus and coach industry
  - Taxi and private hire car industry
  - Local businesses
  - Drivers likely to be affected by the proposal
- Such other persons as the authority considers appropriate

1.3 In addition to the statutory consultees, invitations to comment on the proposed LEZ scheme were extended to non-statutory consultees. LEZ key stakeholders are a mix of both statutory and non-statutory consultees (table 1A). Other stakeholders who responded are summarised in table 2A.

1.4 Council responses to key stakeholders, both statutory and non-statutory, are outlined in table 1B.

1.5 A broad range of stakeholders were approached and/or responded to consultation, with representative responses prioritised across the following sectors: public, private, third, transport/logistics, community/interest etc.

1.6 All stakeholders were provided with a consultation document that set out the objectives and reasons for implementing a LEZ, the process of developing the LEZ, the details of the proposed scheme, how representations could be made and next steps.

Stakeholder Responses: Summary

1.7 Generally, consultees were in favour of action to improve air quality across Edinburgh but overall did not reach consensus on the scale to which the

proposals should extend. Concerns centred on the costs to adapt, especially in the wake of Covid-19, potential localised displacement impacts and whether proposals would improve air quality beyond the boundary and support modal shift.

1.8 The Council has worked closely with SEPA, as a statutory consultee, since project inception. Appraisal of the proposed LEZ scheme follows the National Low Emission Framework (NLEF) and National Modelling Framework (NMF).

1.9 Neighbouring local authorities and SESTran were generally supportive of all scheme aspects including the city centre boundary. Community Councils and other groups representing communities or specific areas of the city generally raised concerns about the size of the boundary, in relation to wider air quality improvements and traffic displacement impacts.

1.10 Representatives of the road haulage, bus/coach and taxi industries were generally supportive of the LEZ, especially around the grace period and no local exemption approaches. Financial impacts to adapting to compliant vehicles were noted and the Council continues to promote LEZ support funds available.

1.11 Consultees were broadly in favour of grace period and no local exemption approaches, though some identified potential exemption groups for whom adaptation could prove especially challenging. The Council wishes to continue engagement with these groups to seek retrofit/support fund solutions, in collaboration with Transport Scotland.

1.12 In response to the consultation, the Council will consider further network mitigations identified. Furthermore, exemptions to the scheme will be considered in exceptional circumstances.

Questionnaire Overview

1.1 Comprehensive analysis of all questionnaire elements is available in Appendix B (of the main report).

1.2 References are to the core respondent data (mostly composed of individuals, total n = 4,976) unless otherwise stated. ‘Organisations’ refers to all non-individuals, including businesses.

Questionnaire: LEZ as proposed

1.3 Support for the LEZ as proposed, is evenly split between those in favour (48%) and opposed (48%) according to the questionnaire. Of the organisations who responded to the questionnaire, more were in favour (50%) of the LEZ as proposed, with fewer opposed (43%).

1.4 Males aged over 35 years old were more likely to 'strongly oppose' the LEZ as proposed, as were businesses located within the LEZ or requiring access to it.

1.5 Main areas of concern cited in relation to the LEZ as proposed, for individuals and businesses/organisations, relate to:

- Costs to adapt to LEZ (61% of mentions in questionnaire): including disproportionate impact to low income households, costs to upgrade vehicles, infrastructure/cost of EVs, Covid recovery impacts;
- Traffic impacts (40% of mentions in questionnaire): including increasing congestion/pollution in surrounding areas, longer journey times, other projects e.g. Spaces for People;
- Perception of Council (17% of mentions in questionnaire): including perceived 'stealth tax', general distrust in Council/consultation processes.

Questionnaire: Boundary

1.6 The consultation sought views on the proposed boundary; the questionnaire suggests that more respondents are opposed (52%) to the boundary compared with those in favour (40%). Of the organisations that responded to consultation, more were opposed (48%) compared with those in favour (36%).

1.7 Of those opposed to the boundary, the most common reason stated for this view in the questionnaire was opposition to the LEZ as proposed (39%). This represents 23% of all questionnaire responses and is a significant contributor to the headline opposition to the boundary.

1.8 Most commonly areas of concern cited in relation to the boundary, for individuals and businesses/organisation, are:

- Traffic impacts (18% mentions in questionnaire): increase congestion/pollution in surrounding areas, longer journey times, parking problems.
- Size (13% mentions in questionnaire): equal number overall think boundary either too large/small.

Questionnaire: Grace Period

1.9 The questionnaire results suggest that more respondents are in favour (54%) of the grace period approach than opposed (35%), with a minority stating 'neither/unsure' (13%). Of the organisations that responded to the questionnaire, more were in favour of the approach (56%) compared withthose opposed (28%).

1.10 The questionnaire results suggest that more respondents think the 2-grace period length is too short (43%), followed by those who think 2 years is just right (24%) or too long (23%). Of the organisations that responded to the questionnaire, more think the 2-grace period length is too short (43%),followed by those who think 2 years is just right (29%) or too short (20%).

1.11 Businesses and organisations were more likely to respond that 2 years is too short (55-64%), citing that more time is required to save funds to replace vehicles. However, the most frequently mentioned view by individuals on the approach was there should be no grace period from thestart of the LEZ (11%).

1.12 Respondent perception toward grace period length appears to reflect previous LEZ knowledge i.e. some began engaging with LEZ as early as 2019 while others are engaging in consultation for the first time.

Questionnaire: Local Exemptions

1.13 A no local exemption approach is proposed for the LEZ scheme since national LEZ regulations already provide Scotland-wide exemptions to groups who cannot adapt to proposals (e.g. blue badge holders) and support funds for other impacted groups. In the public consultation consultees were asked to give feedback on the Council's no local exemption approach.

1.14 The questionnaire results suggest that more respondents are in favour (58%) of the local exemption than opposed (23%), with a minority stating'neither/unsure' (19%). Of all the organisations that responded to the questionnaire, more were in favour (61%) of the local exemption than opposed (20%), with a minority stating 'neither/unsure' (15%).

1.15 Businesses tended to be less in favour of the approach (44%). 4% of individual respondents stated trades/delivery vans should be exempt, as did 12 written business/organisations responses.

Questionnaire: Awareness of Funding

1.16 LEZ Support Funds are available for households or sole-traders/microbusinesses meeting certain eligibility criteria. Funds are allocated by the Scottish Government and delivered by the Energy SavingsTrust (EST).

1.17 Most respondents were not previously aware of the support funds (63%),though businesses and organisations were generally more aware (52%).

1.18 The Council has and will continue to actively encourage the uptake of these funds and has advertised throughout the communications campaign.

Questionnaire: Adapting to the LEZ

1.19 The questionnaire asked what travel measures respondents would take to adapt to the LEZ. Consultation analysis notes that the Covid-19 pandemic led to a significant upheaval to daily life, even without the prospect of the LEZ.

1.20 The commonest questionnaire response suggests that no changes would be made (45%), which was also the most common response for organisations (40%). Roughly a quarter of respondents already own a compliant vehicle.

1.21 For those who would change behaviour, the most frequent answers were to change their route (19%), use more public transport (18%) or walk more (15%).

1.22 Most businesses stated that they would 'do nothing' in response to the LEZ (77%) and no adaptation is required.

1.23 For the organisations who stated they would change their behaviour, the most frequently mentioned answers were: 'Apply for LEZ support funds for small businesses/sole traders' (17%) or 'work elsewhere' (17%). (Note: Only 6% of total respondents would apply for LEZ support funds)

1.24 Note: the national LEZ regulations require the Council to give a minimum of 1-year grace period to all. It is proposed that Glasgow's LEZ will be the first in Scotland to enforce its LEZ, applying a 1-year grace period to non-LEZ residents hence enforcement commencing in 2023. Residents and businesses located within Glasgow's LEZ will not be subject to enforcement until 2024, after a 2-year grace period.

Table 1A **Key Stakeholders – Response Summary**

* invited to participate but did not respond. **SEPA and the Council have engaged continuously since LEZ project inception

**Scottish Environment Protection Agency (SEPA)	New Town & Broughton Community Council
Historic Environment Scotland (HES)	Northfield & Willowbrae Community Council
*Nature Scot	Southside Community Council
NHS Lothian	Stockbridge & Inverleith Community Council
East Lothian Council	West End Community Council
Falkirk Council	Colinton Community Council
Fife Council	Edinburgh Association of Community Councils
Scottish Borders Council	Gorgie Dalry Community Council
West Lothian Council	Grange/Prestonfield Community Council
*Clackmannanshire Council	Leith Central Community Council
*Midlothian Council	Morningside Community Council
South East of Scotland Transport Partnership (SEStran)	Trinity Community Council
Logistics UK	*All other Community Councils across the City of Edinburgh (in/outwith LEZ)
Road Haulage Association	RAC Motoring Services
ECOStars	Spokes
Confederation of Public Transport	Paths for All
Taxi/private hire representatives	Living Streets
Scottish Wholesale Association	Scottish Parliament
Edinburgh Chamber of Commerce	George Street Association
*Federation of Small Businesses	Cockburn Association
Edinburgh Access Panel	Edinburgh Old Town Association
Edinburgh World Heritage	Grassmarket Residents' Association
Corstorphine Community Council	Davidson's Mains Primary School Parent Council
Edinburgh Old Town Community Council	Tollcross Primary School Parent Council
Murrayfield Community Council	Preston Street Primary School (and Council)

Table 2A **Other Stakeholders who responded**	
Central Radio Taxis (Tollcross) Limited	SouthSide Property Management
Handicabs (Lothian)	The Brewstore Ltd
First Bus	The Edinburgh Ice Company
Liddell's Coaches	Traditional Roofing and Building Ltd
Low Traffic Corstorphine	Union of Genius
Car Free Holyrood Park	UPS
AE Chauffeurs Ltd	CrossCountry Trains
Carnies Autocentre	Royal Mail
Clipper Logistics PLC	SP Energy Networks
Cvs24 Recovery	Scottish Water
David W Burns Haulage Ltd	Q-Park
DMD Chauffeur Drive	Asthma UK and British Lung Foundation Scotland
Farr Out Deliveries	British Heart Foundation Scotland
Lothian Lift and Shift	Environmental Protection Scotland (EPS)
T&J Wallace Repair & Recovery LTD	Friends of the Earth Scotland
UK Accident Repair	University of Edinburgh
Aircon Scotland Ltd	Queen Margaret University
B Property	Port of Leith Housing Association
Balloons are Taking Off Ltd	Unite the Union
Clan Canines	Albany Street Clinic
Edinburgh Budget Blinds Limited	A-Haven Townhouse Hotel
Edinburgh Event Company	Caledonia Asset Management Ltd
Edinburgh Handyman	Camera Obscura & World of Illusions
Fair City Amusements	Cordatus Real Estate
Fastlane Roadmarkings	Daleway Limited
Garden People Ltd	First Psychology
Greenscape Grounds Maintenance	K&S Mir Ltd
Neptune's Larder Seafood Specialists	L'Occitane
Pbs Security	Outline Hair
Scott Findlay Plumbing & Heating	

Table 1B **Key Stakeholders & Council Responses**		
Stakeholder	**Stakeholder Response**	**Council Response**
Scottish Environment Protection Agency (SEPA)	Ongoing consultation between the Council and SEPA, via National Modelling Framework (NMF) and National Low Emission Framework (NLEF) which are central to the evidence-led approach to LEZ development in Scotland.	N/A
Historic Environment Scotland	Thank you for your consultation of 9 July 2021 seeking any representations on the proposed Low Emission Zone scheme for Edinburgh and for the recent opportunity to meet with you to discuss the proposed boundary. We would offer the following comments. As we stated in our recent meeting, our particular interest in relation to the Low Emission Zone was regarding the proposed boundary and any implications it may have for Holyrood Park. As part of our discussions around decisions relating to options for the boundary it was confirmed that as the Queen's Drive is a private road it could not be specified as part of a Low Emission Zone, as set out in the Transport (Scotland) Act 2019. We also discussed the issue of traffic displacement of non-compliant vehicles and diversion routes. We welcome the confirmation that the Queen's Drive was not considered an acceptable diversion route and that this would be reflected in the Council's proposed Network Management Strategy. Finally, as you will be aware, we are currently carrying out a survey on the road network in Holyrood Park with the purpose of informing future decisions regarding its usage.	• Boundary – Note. Queen's Drive is a private road and will not be specified as part of the LEZ, in accordance with the regulations. The Council also notes HES consultation on future road network usage and will continue to engage with HES on this topic.
NHS Lothian	See ECO Stars meeting, below	N/A
Fife Council	Fife Council is supportive of improving air quality and on the proposed Edinburgh LEZ scheme as laid out as part of this consultation. It aligns well with Fife's strategic intentions to improve air quality, reduce emissions, encourage sustainable travel and improve town centres.	Impacts beyond Edinburgh (Fife) • The Council notes support for LEZ

	However, clarification is sought around the potential effect on Fife's air quality and economic impact with the following issues and how City of Edinburgh Council are proposing to mitigate these issues; • The potential increase in secondhand noncompliant vehicles may rise in Fife, for example LEZ grant vehicle scrappage scheme could be promoted to surrounding local communities • Small businesses, such as taxi operators, delivery and trades people based in Fife and serving Edinburgh could be adversely affected by the LEZ • The ECO Stars partnership scheme provides recognition, guidance, and advice on best practice to operators of goods vehicles, buses, and coaches. It is being rolled out in Fife to help fleet operators improve efficiency, reduce fuel consumption, and reduce emissions – all helping to improve local air quality and make cost savings at the same time. Suggest that ECO Stars is adopted nationally to help improve Air Quality Management Areas (AQMAs) and LEZs such as Edinburgh's. • The Edinburgh Bus Station is however within the Edinburgh LEZ and bus services which operate between Fife and Edinburgh use this bus station and also serve the main stops within the City Centre within the proposed LEZ. At this stage, a proportion of Fife's bus operators fleet are not compliant. These operators are aware of the deadline for enforcement and the need for compliant vehicles to travel within the LEZ. • The introduction of the Rosyth Park & Ride site and rail station at Halbeath Park & Ride site, with their focus on encouraging modal shift to public transport and reducing traffic within the city would support the improvement of air quality. The 2 projects should be considered for funding as part of the Edinburgh LEZ (Low Emission Zones) as it will help reduce the number of vehicles entering the city from neighbouring Local Authorities.	• LEZ Support Funds are available to eligible low income households and microbusinesses/sole traders located within 20km of Scotland's LEZs. LEZ funds are available in parts of Fife and have been advertised widely by the Council during and beyond the 2021 consultation period; • National and local bus and coach operators are increasingly aware of the implications for Edinburgh/Scotland's LEZs. The Council will continue to advertise Transport Scotland's LEZ BEAR retrofit schemes and ScotZEB funds to support uptake of low/zero emission buses. • Embedded within the City Mobility Plan, Edinburgh's LEZ seeks to maximise opportunities to improve public realm, encourage active travel and promote modal shift to sustainable transport. Notably, the funds to implement Edinburgh's LEZ are provided by Transport Scotland and do not cover other sustainable transport schemes (e.g. Park and Ride) • Communication & Engagement – continued support for the ECO Stars partnership, engaging key stakeholders (including local authorities and SEStran) and local/national advertising campaigns

<table>
<tr>
<td></td>
<td>With regards to ongoing consultation, it is important to keep neighbouring communities, particularly those in Fife informed of progress in relation to the implementation and any subsequent changes that may be planned.

As the enforcement will not start until the 1st June 2024, it would be beneficial to “warn” any non-compliant vehicles entering the LEZ before that date that enforcement is coming so that this does not come as a shock in June 2024.</td>
<td>to support behaviour change in Edinburgh and beyond.</td>
</tr>
<tr>
<td>East Lothian Council</td>
<td>[East Lothian gave a comprehensive response to IIA which is summarised by the following actions]:

<table>
<tr><th>Changes to be made</th><th>Expected outcome of the change</th></tr>
<tr><td>Engage with CEC / bus operators</td><td>Understanding of potential impact on fare prices (if any) for East Lothian residents</td></tr>
<tr><td>Engage with CEC regarding future LEZ communications</td><td>A communication strategy that targets a wider audience, reaching East Lothian residents and one that it is provided in formats that will reach impacted groups</td></tr>
<tr><td>Engage with CEC regarding the eligibility for LEZ support funding</td><td>A more recognised approach to consider trip frequency and necessity of travel for East Lothian residents that widens eligibility for LEZ support</td></tr>
</table>
</td>
<td>Impacts beyond Edinburgh (East Lothian)

• The Council welcomes East Lothian Council’s comments on the Integrated Impact Assessment (IIA) and will liaise to progress actions recommended

• Communication & Engagement – to continue, with key stakeholders (including local authorities/SEStran) and the public</td>
</tr>
</table>

	funding	
Scottish Borders Council	Scottish Borders Council (SBC) is grateful for the opportunity to comment on City of Edinburgh Council's (CEC) proposals for a Low Emission Zone (LEZ), comprising a city centre zone for all vehicles, which will prioritise air quality, the protection of public health and hopefully contribute to the race to net zero. SBC is generally supportive of the proposal for a LEZ in the centre of Edinburgh, noting that this Council like many other Local Authorities in Scotland announced a climate emergency and is currently delivering on its Climate Change Route Map for the Scottish Borders. It is clear that the aims of the LEZ proposal are to help reduce carbon emissions in relation to Climate Change, reduce the negative environmental impacts of travel, as well as the promotion of healthier living by means of promoting 'active travel' and transportation by the least polluting means. We recognise too that Scottish Borders residents and visitors will benefit from the initiative in relation to the time they spend in the City of Edinburgh. However, the LEZ proposal cannot be isolated from the impact that it may have beyond the confines of the City of Edinburgh Council area, and SBC has a number of concerns and some suggestions that we hope you will consider as part of this consultation exercise. Our concerns fall into three broad categories:- A. The specific impacts upon Borders businesses and residents which result from the zoning; B. Public Transport;	Impacts beyond Edinburgh (Scottish Borders Council) • The Council notes support for LEZ • LEZ Support Funds are available to eligible low income households and microbusinesses/sole traders located within 20km of Scotland's LEZs. LEZ funds are available in parts of Scottish Borders and have been advertised widely by the Council during and beyond the 2021 consultation period; • National and local bus and coach operators are increasingly aware of the implications for Edinburgh/Scotland's LEZs.The Council will continue to advertise Transport Scotland's LEZ BEAR retrofit schemes and ScotZEB funds to support uptake of low/zero emission buses. • The Council will support Scottish Borders Council (and other neighbouring local authorities/SEStran) in dialogue with Transport Scotland to ensure wider regional impacts of the LEZ are

	C. Potential displacement activity; and D. Conclusion A. **Impacts upon Borders businesses and residents** **i. Businesses** There are many businesses and services that operate between the Scottish Borders and Edinburgh, and the proposed LEZ may have implications for these businesses and services in respect of cross-boundary transport. The over-whelming majority of businesses in the Scottish Borders are micro, small, and medium sized enterprises (99.8% of Enterprises – UK Business Counts 2018 – Inter Departmental Business Register) and the Council is concerned that the potential impact of financial penalties under the present proposals may undermine the viability of some businesses. At the very least, it is likely to impact profit margins as some businesses struggle to purchase cleaner vehicles or accept the loss of business in the city as the price of not incurring financial penalties. Taxi, delivery and trades vehicles are all likely to be affected – potentially losing some jobs and business within the LEZ boundary or only trading out-with the proposed zone. ii. **Residents** Transport poverty is an acute challenge in the Scottish Borders. There are simply not the number or variety of transport options available to Borders residents that are open to residents of the City, or to some extent, the residents of those local authority areas closer to Edinburgh. The car ownership figures for the Scottish Borders (81% of households in the Scottish Borders have access to at least one car, while in Edinburgh this number is only 61% - Scottish Household Survey 2017) are a sharp reminder of this fact in a context where average weekly incomes in the Scottish Borders are £615.1 and those in the City are £724.6 (Annual Survey of Hours and Earnings – Gross Weekly Pay of Full Time Workers	understood and addressed, along with issues cited around public transport, ticketing and net zero targets and in line with Council CMP and other strategic objectives • LEZ development in Scotland has progressed in partnership with Scottish Government, Transport Scotland and the four major Cities in Scotland to try and ensure consistency and provide a deterrent for dis-placing of vehicles. The Support Grants include a disposal vehicle element, so that they are removed from the fleet. Commercial vehicles have been encouraged to retrofit vehicles so that where they have a decent life-span they can continued to be used. Continued Review and Assessment of air quality is will be ongoing across Scotland through the Local Air Quality Management regime. • Communication & Engagement – to continue with key stakeholders (including local authorities/SEStran) and the public.

	2018). This challenge speaks to a fundamental equality issue in which employment options, access to employment and education along with access to a range of other facilities and services (including health facilities) are significantly more restricted for those who live in the Scottish Borders than in other parts of the South-East of Scotland. In particular, with reference to Inclusive Economic Growth and the development of a fairer society, people in poverty/deprivation may miss out on employment opportunities, have to change jobs or be excluded from working, attending appointments or going into Edinburgh city centre for leisure primarily due to not being able to afford to upgrade to a compliant vehicle or not being able to access affordable alternative transport provision. Efforts to support our most deprived citizens and those most affected by transport poverty need to be addressed to help ensure that the design and implementation of the LEZ is 'just'. This will require everything from support schemes for young people accessing employment and training to subsidisation of essential transport provision to continuing support for car scrappage and the purchase of compliant vehicles. Mitigation measures should include examining all of the following:- • Measures to improve cross boundary public transport journey times; • Increased Park and Ride provision; • Coordinated delivery of multi-modal ticketing at a national and regional level; • Public transport costs – support for proper and equitable subsidization for rural bus services; • Improved orbital public transport routes for the city out-with the	

	central zone; • Coordination of freight consolidation; • Development of low carbon freight hubs; and • The delivery of enhanced cross boundary active travel routes from neighbouring local authorities to Edinburgh. We understand that a number of these suggestions will require collaborative working and specific support from Scottish Government and other partners and are not specific asks for City of Edinburgh Council. However, we believe these issues are very important in relation to making this proposal work and will be key in delivering public acceptance of Low Emissions Zones. The City Region, with the recently agreed Regional Prosperity Framework adopting strong positions on Climate Change and Transport, may be the most appropriate vehicle for addressing what are shared issues. **iii. Grace Periods** The current city centre scheme proposes a two year grace period for residents, with a proposed date of 1st June 2024 when charges will be initiated. This timescale appears to be reasonable, but there are some concerns regarding whether significant structural change will be possible within this timeframe. It is essential that this proposed grace period is recognised fully in terms of an appropriate and robust communications plan and mitigation measures are implemented within this timeframe to help reduce the potential negative effects of this proposal. We would also recommend that the range of financial support outlined in the form of grants and additional support for residents, commuters and businesses within the Low Emission Zone Support Fund is supplied throughout the grace period and potentially continued beyond the initiation date in 2024. **B. Public Transport** Bus based public transport continues to be a concern. The proposed	

	timescales for implementation of the LEZ could impact the overheads of bus operators with potential consequences for fare increases, potentially making public transport less attractive and affordable. Above all, we fear that bus based commuting into the city from areas like the Scottish Borders may be affected by the LEZ proposal, potentially leading to a reduction in transport options, because of the need to upgrade the fleet, or to curtail expenditure. We are aware that discussions with bus operators providing services into the City have been taking place and we would like to see these discussions continuing as the proposal moves forward along with collaborative working where appropriate. We acknowledge that the Scottish Bus Emissions Abatement Retrofit Fund has been available for operators to help ensure that funding is made available for retrofitting or upgrading equipment to help ensure compliance. However, we would encourage Scottish Government to make more funding available during the suggested grace period, along with enhanced advertising to help target smaller operators that will be adversely affected by this policy decision. We believe the key risk to be in the case of a marginal route where operators are already struggling financially to make the route viable and the additional requirements placed on the operator or service by the LEZ may tip the service into non- viability. Some services in the Scottish Borders were already pressured before Covid-19, with patronage having fallen significantly during the pandemic making the position even more acute and recent announcements such as free travel for younger people likely to present additional pressures for rural transport providers. While Lothian buses is likely to have been able to make preparations for the challenges of the LEZ and the new demands that are expected to follow, other operators out-with the City are unlikely to be so well positioned. The heart of the issue is the challenge over passenger numbers, significantly exacerbated by COVID-19, further undermining the viability of some services. In addition this policy decision should be accompanied by greater public transport collaboration in terms of bus/rail interchange to help give people sustainable travel options with a view to discouraging private car usage.	

	The promotion of an LEZ must be accompanied by greener options for the general public, such as improved rail and bus provision, more opportunities for electric vehicle charging, the development of mobility hubs and enhanced opportunities for active travel. This change is required within the short to medium term if this policy is to develop the hoped for benefits in the round. Again, we understand that these issues will require support from Scottish Government and collaboration from neighbouring Local Authorities in order to work constructively for local people. A key example where this integration needs to be enhanced would be the current service proposals at Reston in Berwickshire, where a new station facility is due to be completed on the East Coast Main Line early next year, aligning with the announcement of the LEZ. Current proposals from Transport Scotland are suggesting a severely restricted number of services calling at the station, undermining the value of the development within the transport network of South- East Scotland. This will not help provide sustainable travel options or deliver improvements to the City of Edinburgh and will only encourage more people to use the private car, which we believe will be counter-productive in the race to net- zero and carbon reduction. Another example is a lack of rolling stock on the Borders Railway which results in severe overcrowding during the peaks and encourages people to drive into the City. This is not consistent with a longer term aspiration for air quality and the development of active travel proposals, either within the proposed LEZ or in other parts of the City. A renewed effort should also be made to make integrated multi-ticketing a more accessible and affordable option for people travelling to the City. We understand that integrated ticking is not an easy solution to achieve. However, the proposed LEZ should be considered as a catalyst for required improvements to transport integration and we would advocate for a range of ancillary policy arrangements to be considered in order for the LEZ proposal to be a considered as a success in the future. **C. Displacement**	

	The key issue here is in the potential displacement that could result from the initiation of the LEZ proposal. As above, there are also commercial user and public/private realm dimensions to this as well. The issue of displacement is most likely to arise in those areas adjacent to the LEZ city-wide boundary with direct displacement of commercial non-compliant vehicles to the margins of the LEZ, and a potential build-up of such vehicles throughout the wider city environs. Such direct impacts on the Scottish Borders are less likely. However, indirect impacts are possible through, for example, the reassignment of non-compliant buses, taxis, trade related and delivery vehicles to areas such as the Borders, where LEZ restrictions do not apply. Indeed, one scenario that could well come to pass is that bus passengers may need to change from a non-compliant vehicle to a compliant vehicle on or near the LEZ boundary. Similarly, it is possible to foresee non-compliant cars being effectively 'recycled' into areas such as the Scottish Borders as the prices of such vehicles decrease in anticipation of the LEZ in much the same way that older buses were historically recycled to rural areas in favour of newer and greener fleet vehicles being introduced to City networks. We welcome the grants that have been made available for people and businesses living within a 12 mile radius of the LEZ boundary to try and mitigate the effects of the LEZ and encourage greener transport options. It may be beneficial to advertise these proposals more strongly to encourage uptake. **Q. Conclusion** While SBC is generally supportive of CEC's proposed LEZ, there will be important regional impacts which flow from the introduction of a LEZ and there will be potential impacts on commuters, local businesses and the public transport networks. CEC must be attentive to this as it develops its proposals and must involve local authority partners in considering impacts and developing mitigation measures, especially within the proposed grace period leading up to June 2024.	

	We believe that additional mitigation measures should be considered over the short to medium term to help attenuate the potential adverse impacts that may emanate from the LEZ proposal. These mitigation measures are primarily in the provision of greener transport options, either in the form of public transport connectivity or a range of active travel proposals and we understand that these measures will require widespread support from Scottish Government and collaboration from a wide range of partners including adjacent local authorities. The Scottish Government's commitment to reduce car kilometres by 20% by 2030 allied to the LEZ proposals in a number of key cities in Scotland are important parts of the drive towards net zero. However, more needs to be done to provide residents, commuters and visitors to the city with a meaningful and much more connected transport network and much more work needs to be undertaken to provide low impact, greener and sustainable travel alternatives, along with opportunities and incentives for people to change their existing driving habits such as the delivery of mobility hubs and significant improvements to the existing electric charging network in the city and on the periphery of the city boundary. To date, funding has only been made available to the local authorities introducing a LEZ. A much broader view of impact is needed, and SBC is willing to support CEC in dialogue with Scottish Government to ensure that the wider regional impacts of its proposed LEZ are understood and addressed.	
West Lothian Council	**Key Consultation Questions and Suggested Responses** **Q. To what extent are you in favour of the Edinburgh LEZ as proposed?** West Lothian Council support the preferred Edinburgh LEZ proposal. The need to tackle the climate emergency, reduce vehicle km by 20% by 2030 and improve air quality are all objectives that should be supported. **Q. To what extent are you in favour of the boundary for the LEZ in Edinburgh as proposed?**	Impacts beyond Edinburgh (West Lothian) • The Council notes support for LEZ and main scheme elements.

	West Lothian Council support the “tight” city centre boundary. **Q. With reference to the grace period, to what extent are you in favour of this approach which applies the grace period equally to residents, non-residents and all vehicle types?** West Lothian Council is of the view that the grace period is fair to all and allows sufficient time for those affected by the introduction of the LEZ to adjust but this is mainly a matter for CEC and its residents. **Q. Which of the following best fits your views on the length of the grace period?** Again, this is mainly a matter for CEC and its residents but West Lothian Council is of the view that 2 years is about right and should be sufficient time. **Q. Overall, to what extent are you in favour of this local exemption approach?** The preferred proposal has no local ‘time-limited’ exemptions beyond the national exemptions. Any local exemptions brought forward later would be a matter for CEC and its residents. **CONCLUSION** It is utilised that environmental and health pressures associated with petrol and diesel vehicles is increasing. Scottish Government’s desire to have the four major Scottish cities introducing Low Emission Zones is a commitment to improving air quality in our most populated areas. The City of Edinburgh’s preferred proposal has removed the original two cordon proposal; that would have seen an outer zone to the city as well as the inner-city zone. The preferred proposal, now being consulted on, focuses the LEZ to the centre of the city where air quality and congestion are at their highest levels. The introduction of Edinburgh’s preferred LEZ should be seen as a positive step towards tackling change.	

South East of Scotland Transport Partnership (SEStran)	**Q. To what extent are you in favour of the Edinburgh LEZ as proposed?** Strongly in favour **Q. To what extent are you in favour of the boundary for the LEZ in Edinburgh as proposed?** Strongly in favour **Q. With reference to the grace period, to what extent are you in favour of this approach which applies the grace period equally to residents, non-residents and all vehicle types?** Strongly in favour **Q. Which of the following best fits your views on the length of the grace period?** 2 years is about right and should be sufficient time **Q. Overall, to what extent are you in favour of this local exemption approach?** Strongly in favour	Impacts beyond Edinburgh (SESTran) • The Council notes support for LEZ and main scheme elements.
Logistics UK	We are delighted to see that our previous concerns have been taken into consideration. These include the following points: • With the new start date of 31 May 2022 for Edinburgh's LEZ, Euro VI vehicles will naturally through replacement cycles, have become "standard" fleet for many operators in and around Edinburgh. • The size of the zone now seems proportionate and will help achieve the desired effect. • The inclusion of cars will help create the desired effect of reducing congestion and in turn pollution.	• The Council notes support for LEZ and main scheme elements. • Communication & Engagement – to continue with key stakeholders (freight and logistics) and the public.

	• The new start date will allow the van fleet to move to required standards. The Euro 6 standard for new van registrations was introduced more recently than for cars and HGVs. This is particularly helped by the two-year grace period for both residents and non-residents of the LEZ area. • The grace period meaning that enforcement will commence on 1 June 2024 will allow local businesses within and around Edinburgh time to prepare for the changes. • We are also encouraged by the fact that Edinburgh City council has recognised the important role that freight and logistics businesses play and indeed how they support the local economy. Finally, we are encouraged by the fact that Edinburgh City Council will be utilising the LEZ Support Fund for businesses and the LEZ Retrofit Fund which provides grants funded by Transport Scotland.	
Road Haulage Association	**To what extent are you in favour of the Edinburgh LEZ as proposed?** Somewhat oppose. The RHA thanks the Edinburgh authorities for the opportunity to comment on its Low Emission Zone proposals. We trust our answer to this question provides context and understanding on our position and approach to this consultation. The RHA comments that, to reduce nitrogen oxide (NOx) pollution, public authorities across the United Kingdom are choosing to implement a policy model that seeks to deter vehicles deemed "polluting" from entering designated areas through punitive charges. Currently, within Scotland, this manifests itself as "Low Emission Zones" (LEZ) and as "Clean Air Zones" (CAZ) in England. Whilst the RHA supports the overall goal to improve air quality and has appreciated the difference in approach and consultation between Scotland and England, the stance taken in England has caused hauliers across the United Kingdom a significant strategic problem with ramifications for Scotland. Specifically, by linking compliance to the Euro VI diesel standards, public authorities undermine the asset values of non-	• The Council notes support for improved air quality, boundary, grace period approach and no local exemption approach. • The Council notes recognition by RHA would like to see longer grace period length. The Council also notes that RHA deem 2 year grace period to be sufficient: "[2 year grace period] will allow sufficient time for the second-hand market in Euro VI vehicles to develop thereby enabling SMEs the opportunity to upgrade their vehicles." • LEZ Support Funds are available to eligible microbusinesses/sole traders located within 20km of Scotland's LEZs. LEZ funds are available

	Euro VI diesel vehicles. This is because market demand for such vehicles falls, with a consequential fall in their residual values. Exacerbating this are two further problems. First, the aggressive timescales to implement CAZ within England overlooked there has been an insufficient supply of compliant vehicles to meet demand and thereby creating a shortage. This has caused price inflation in the desired vehicles (in this instance, Euro VI) thus causing the market to become distorted and disrupting business investment decisions and consequential vehicle replacement cycles. We regret that as much as £1.2bn has been prematurely wiped from the value of the Euro V fleet of HGVs (94,000 lorries). Secondly, the RHA strongly believes that NOx emissions evidence does not justify the aggressive stance taken against HGVs in England. Using data sourced from the National Atmospheric Emissions Inventory, we estimate that, following the £1.9bn investment made by hauliers in the latest HGVs, NOx emissions have fallen by over 60% since 2013. With no further policy intervention, this will fall by over 85% from 2013 levels by 2025. This context matters. In a low margin industry such as haulage (2% in 2020 – Source: Statistica), the premature devaluation of an asset can push the operator into an accounting loss, which increases the difficulty particularly for SME operators to raise the necessary finance commercially to replace their vehicles. Our concern therefore is a perverse outcome will occur, where market forces will cause operators to run older more polluting vehicles for longer than desired. The RHA is grateful to have had the opportunity to discuss with officials across Scotland the strategic problems arising from the chosen policy model to reduce NOx emissions. Ideally, we would prefer alternative solutions to be implemented, where natural vehicle replacement cycles and market forces do the “heavy lifting” required to upgrade vehicles to the latest cleanest standards without automatic recourse to public funds. Such an approach might then be augmented by non-charging interventions to target pollution hotspots via improved traffic flow measures and appropriate financial support to retire the oldest pre-Euro V vehicles from the road.	across the wider Edinburgh area and have been advertised widely by the Council during and beyond the 2021 consultation period; • Emission standards are set nationally by regulations, under the Transport (Scotland) Act 2019; • Communication & Engagement – to continue with key stakeholders (including freight and logistics) and the public.

	Given the decision to implement a LEZ in Edinburgh, mitigating the impact of the asset devaluation on non-Euro VI vehicles is therefore crucial. We therefore give qualified support to the limited geographic area that the LEZ will cover – this will ensure that actual pollution hotspots are identified and targeted. We also give qualified support that, following the two-year grace period, enforcement will begin no earlier than June 2024. Given the market distortion we set out above, we judge this will allow sufficient time for the second-hand market in Euro VI vehicles to develop thereby enabling SMEs the opportunity to upgrade their vehicles. Should the Edinburgh authorities considering extending the area covered by the LEZ, then we ask that they consult with us so that the ramifications and impact to the cost-effective and efficient delivery of goods are fully scoped and understood. **Q. To what extent are you in favour of the boundary for the LEZ in Edinburgh as proposed?** Neither/don't know. Please see our earlier response where we would prefer alternative solutions to a LEZ be implemented, where natural vehicle replacement cycles and market forces do the "heavy lifting" required to upgrade vehicles to the latest cleanest standards without automatic recourse to public funds. Such an approach might then be augmented by non-charging interventions to target pollution hotspots via improved traffic flow measures and appropriate financial support to retire the oldest pre-Euro V vehicles from the road. **Q. With reference to the grace period, to what extent are you in favour of this approach which applies the grace period equally to residents, non-residents and all vehicle types?** Strongly in favour **Q. Which of the following best fits your views on the length of the**	

	grace period? 2 years is too short a time period **Q. Overall, to what extent are you in favour of this local exemption approach?** Strongly in favour	
ECOStars	**[LEZ Consultation ECO Stars workshop 9/9/21]** **<u>Present</u>** Representatives from Alliance Healthcare, Sainsbury's, Next, NHS Lothian, Prentice Coaches, TRL Consultancy and City of Edinburgh Council **<u>Main points from the meeting</u>** **Comment** from TRL that Transport Scotland are providing interest free loans up to £120k **Comment:** Concern raise about enforcement through the DVLA database which may not be fully up to good standard, especially for buses. **Comment**: Query whether signage is erected during the grace period. Preference for signage around 6 months in advance of the scheme becoming effective. Would be good to have continuity across Scotland. **Comment**: Will navigational systems interface with the LEZ plans e.g. Google Maps? **Actions** Slides shared Press release shared	• The Council notes that data sharing agreements being worked upon by Transport Scotland and UK Government in response to enforcement requirements. Will feedback through the Scottish 4-cities Consistency Group procedure. • Displacement/Network Management Strategy – the Council is developing to address potential impacts. It will identify specific mitigation measures around the boundary, monitor impacts and include a complementary signage and communications strategy. • The Council notes that databases are providing to mapping organisations and would expect LEZ to feature.
Confederation of Public Transport	**[Meeting – Low Emission Zone & Confederation of Passenger Transport 15 September 2021]** Representatives of CPT, First Bus, Edinburgh Coach Lines, Stagecoach,	• The Council notes support for LEZ and grace period approach. • Boundary Size – The city centre LEZ

Lothian Buses and CEC

Meeting Discussion

Main points on LEZ	**Response**
Query on the National Modelling Framework (NMF) whether the baseline data remains relevant.	Advised regarding the COVID-19 Impact Study by Transport Scotl 2020 and scenario testing.
Query regarding complementary measures for LEZ.	Advised regarding Bus Partnersh fund and CCT and CMP implementation. Future engagement welcome.
BEAR 3 & 4 will assist in achieving LEZ compliance	Noted
Fairness of proposed scheme is positive in terms of all vehicles affected and grace periods	Noted and welcome
LEZ proposed scheme boundary may not be ambitious enough. Could be wider and include areas such as Picardy Place, Dalry etc	Noted
Traffic data collection in winter doesn't construe main coach operating	Major traffic data surveys undertaken Nov 2016 and June 2019. Guidance adhered.

Other matters

Concerns raised around Zero Emissions City Centre timelines;

- Alternative fuels not available for coaches

boundary was selected as preferred option, based on its efficacy to tackle air quality where negative impacts are greatest. An extended urban LEZ boundary was excluded during the appraisal of options (see June 2021 report). Air quality modelling undertaken by SEPA on the potential effects of the LEZ indicate that air quality will improve across the whole city

- The Council continually engages with SEPA to ensure NMF is robust and evidence provided is up-to-date
- The Council notes complementary measures for LEZ and will continue engagement with bus/coach operators
- The Council will continue engagement with operators on the future of the bus station
- The Council will continue to advertise Transport Scotland's LEZ BEAR retrofit schemes and ScotZEB funds to support uptake of low/zero emission buses.
- The Council notes barriers faced by bus/coach operators in future development of LEZs, including possible pilots for Zero Emission Zones or other such schemes.

	• Electric double decker buses seem to be capable now, but development has taken time • Difficulties with post-COVID investment plans • Programme for Government to half the fleet by 2023 very ambitious Concern raised around future of the bus station CEC internal discussions have just begun. Welcome future engagement. SEPA can provide operators/sector (e.g. bus or coach) with details of the amount of emissions saved associated with changes in the fleets. **Actions** Request from Lothian Buses for more involvement/consultation in strategies/policies such as CMP and ECCT. Desire from CPT/industry to have regular forums with CEC, probably quarterly – should include coach operators as well as bus companies. Meeting to be arranged before the end of the year. The Council to get in touch with the Sector to engage on Bus Partnership Fund. Formal responses to the LEZ consultation are welcome	
Taxi/private hire representative	**[Workshop 16th September. Attended by, LEZ and Licensing teams in the Council, Central Taxi, Scottish Taxi Federation, Capital Cars & Uber]** Generally supportive of the proposals – the proposal for a two year grace period allows time for adaptation to ensure compliance. Concerns about the impact of other plans and policies, for example changes made through Spaces for People are causing congestion and delaying taxi journey times.	• The Council notes support for LEZ and main scheme elements. • Network Management Strategy – The LEZ needs to operate in conjunction with other plans and policies so the impacts of each plan will be monitored and adjusted where appropriate.

Edinburgh Chamber of Commerce	**Q. To what extent are you in favour of the Edinburgh LEZ as proposed?** Whilst we do understand the need to address air quality and sustainability issues in Edinburgh, and particularly in the City Centre, the specific needs of businesses do need to be taken into consideration. We would ask that a balance be struck between the city's sustainability needs and the critical need to maintain an economically successful city centre – one which allows businesses adequate access to goods and services, enables employees to be able to travel quickly and cost effectively to workplaces, and encourages customers. More than a third of all jobs in Edinburgh are located in the City Centre, and many businesses will require regular deliveries to the City Centre, whilst businesses such as tradespeople must be able to travel to the client, which will frequently be in the City Centre. Research has actually found that 63% of SMEs rely upon vehicles, mostly Light Goods Vehicles (LGVs), to deliver goods or drive to clients to provide a service. However, surveys from February 2020 showed that LGVs were the type of vehicle with lowest compliance, meaning the SME sector would be hardest hit by these rules, despite being the least able to absorb additional costs. We'd also like to highlight that there is already a high level of willingness amongst businesses to work towards meeting the standards that would be enforced through the LEZ. For instance, recent studies have shown that the percentage of compliant LGVs increased from as low as 7% up to 48% in just 4 years. Equally, the Bus Emissions Abatement Retrofit Programme (BEAR), which has been supporting the bus and coach sector to retrofit vehicles, was significantly oversubscribed in the 20/21 financial year, with approximately £9.75 million awarded across Scotland to help this sector improve their compliance. The introduction of an LEZ, with such high fines, is perhaps a more heavy-handed way of improving air quality than is needed, and regardless of whether an LEZ is implemented or not, both local and national policymakers should be using all the available policy levers to work with and support businesses to transition to more environmentally friendly vehicles. We appreciate that regulatory pressures may be necessary, but this should be to drive compliance amongst those who are least willing to transition, rather than those who simply cannot	• The Council actively encourages uptake of the Scottish Government's LEZ Support Funds available to eligible microbusinesses/sole traders located within 20km (12 miles) of Scotland's LEZs. LEZ funds have been advertised widely by the Council during and beyond the 2021 consultation period; • Grace period/local exemptions - Covid-19 and economic recovery impacts are considered alongside negative damage costs to public health associated with not implementing the LEZ in a timely manner. Appraisal sought balance between impacts and concluded that the grace period and no local exemption approaches, as well as the grace period length, as proposed, is deemed proportionate. • Local exemptions – proposed scheme to provision only in exceptional circumstances

	afford to. As you'll be well aware, this is an extremely difficult time for businesses, with issues such as Covid and labour shortages still affecting the ability of many to operate at fully capacity – some studies have found that as many at 50% of businesses are still unable to operate at full capacity. This is therefore not an easy time to be asking businesses to be investing in retrofitting or new vehicles, with many barely able to afford day-to-day costs and a large number already at risk of collapse. We would ask the Council to be mindful of this. The grace period is therefore critical for allowing time to retrofit or replace vehicles – both options come with a significant cost, and time must be given to allow people and businesses to make that transition without pushing them into debt or exacerbating labour shortages. However, we do have concerns that the grace period may be too short. Studies have shown that between 2016 and 2020, LGVs increased in compliance from 7% to 48% - this sector is now expected to double the rate of increase in compliance, at a time when they are already grappling with challenges of labour shortages, Covid recovery, and tax increases. Again if you look at the oversubscribed BEAR scheme for bus retrofitting, a lot of the delay in complying with the LEZ standards isn't necessarily lack of willingness, but lack of access to support. Businesses need to be given sufficient time to access schemes such as this, whilst previously concerns have been raised with us around there simply not being enough people with the skills and training to be able to retrofit and upgrade buses at the rate required. If buses are unable to retrofit or upgrade in time, this will mean a huge cost for bus companies which will surely be passed on to passengers, at a time when we should be incentivising bus travel. Equally for Heavy Goods Vehicles (HGVs), whilst the technology to retrofit these does exist, it is very limited, and again the availability of engineers with the right skills and equipment is inadequate. Furthermore, many businesses will have taken out loans during Covid, or delayed payments of things like VAT, with as much as £500 million debt built up by Edinburgh businesses during Covid – whilst the immediate crisis may be (hopefully) over, this debt will now have to be repaid over the next several years. It is therefore difficult to know at this time what capacity businesses will have to pay for retrofitting and upgrading over the next two years.	

	We would suggest that the Council continues to engage with businesses on this, and perhaps half way through the grace period, look again at business conditions and consider whether it's appropriate to extend the grace period to allow struggling businesses to catch up. In the LEZ proposal document, it states that in the event of e.g. a traffic accident that required vehicles to be diverted into the LEZ, that the LEZ would be temporarily suspended, but only where vehicles follow prescribed diversionary routes. Whilst we appreciate that there needs to be limits, it can be only too easy to miss a turn, or not spot a diversion sign, and so we would ask for leniency around this. Finally, we would like to emphasise that there must be coherence and join up across the City Council, with different regulatory departments implementing the same standards e.g. the department that handles taxi licences must be implementing the same standards as the LEZ team. **Q. To what extent are you in favour of the boundary for the LEZ in Edinburgh as proposed?** Neither/don't know **Q. With reference to the grace period, to what extent are you in favour of this approach which applies the grace period equally to residents, non-residents and all vehicle types?** Not Answered **Q. Which of the following best fits your views on the length of the grace period?** Not Answered **Q. Overall, to what extent are you in favour of this local exemption approach?**	

	Not Answered **Q. Are there any other groups of people or type of vehicle you think should be exempt from the LEZ? Which and why?** The Council has the power to issue local 'time-limited' exemptions to the Zone for a period of up to one year. As stated above, the past 18 months have been exceptionally difficult for businesses, and recovery is likely to be slow, particularly given the high levels of debt that have built up, and the major concerns around labour shortages, particularly in the sectors likely to be most affected by the introduction of an LEZ. We would therefore ask for the Council to consider using this power to create a more flexible grace period for business vehicles, depending on economic and business conditions.	
Edinburgh Access Panel	**To what extent are you in favour of the Edinburgh LEZ as proposed?** Somewhat in favour. **Q. To what extent are you in favour of the boundary for the LEZ in Edinburgh as proposed?** Somewhat in favour. **Q. With reference to the grace period, to what extent are you in favour of this approach which applies the grace period equally to residents, non-residents and all vehicle types?** Somewhat in favour. **Q. Which of the following best fits your views on the length of the grace period?** 2 years is about right and should be sufficient time **Q. Overall, to what extent are you in favour of this local exemption approach?**	• The Council notes support for LEZ and main scheme elements. • The Council is actively engaging with Transport Scotland to ensure the blue badge holder scheme is fit for purpose and easy to use and will feedback views of the Edinburgh Access Panel on an ongoing basis.

	Somewhat in favour. **Q. Are there any other groups of people or type of vehicle you think should be exempt from the LEZ? Which and why?** Comments about exemption for Blue Badge holders: It's very important to ensure the administration and processes around exemptions are simple, easy to use and accessible. Exemption must be automatic and transparent rather than the BB holder having to apply for exemption every time a fine is issued. Linkage between the systems for LEZ management and BB management must therefore be created. As well as applying to cases where the BB holder is the driver, this also goes for cases where the BB holder is regularly a passenger in a particular car which is owned and driven by a person who is not a BB holder. Any exemption-application processes and material must be fully accessible, with a format available for each type of disability. The same goes for general info about the LEZ and its rules. Any LEZ-related website or telephone service must be fully accessible too.	
Edinburgh World Heritage	**EDINBURGH WORLD HERITAGE RESPONSE TO CONSULTATION ON LOW EMISSION ZONE PROPOSALS** Edinburgh World Heritage supports the aims of the LEZ which encompasses the vast majority of the World Heritage Site areaand extends into adjacent conservation areas. The reduction in pollution within this area will improve the health and wellbeing of residents, workers and visitors to the WHS. We would like to make the following important points about the implementation of the LEZ: 1. We would like to understand the projected implications of the boundary line, particularly to the north and west of theNew Town, on traffic and pollution in adjacent streets, many of which will be residential.	• Displacement/Network Management Strategy – the Council is developing to address potential impacts. It will identify specific mitigation measures around the boundary, monitor impacts and include a complementary signage and communications strategy. • Enforcement – the Council is progressing a enforcement regime which covers the main entry/exit points with fixed ANPR cameras with

	2. The boundary of the zone will require additional signage and cameras at entrances. These should be designed andplaced to have minimal impact upon the historic built environment. Many of the zone entrance locations are also important entrances to our historic core which should be reduced of all extraneous clutter and signage generally. EWH will be happy to review each proposed location with CEC at the appropriate early stage. 3. How will routes across/around the city (centre) avoiding the LEZ be signed? 4. Consultation and engagement with the residential and business communities living within the WHS and surroundingareas is critical to support a living and thriving WHS. There are a number of parallel CEC projects ongoing that affect the public realm within the WHS and conservation areas. These include communal bins rollout, PPZ, CCT projects, EV charging points installation, Traveling Safely (Spaces for People) and other active travel initiatives. It is crucial that all of these projects are coordinated carefully sothat any harmful changes or unnecessary to the historic streetscape can be minimised and new interventions can be carefully designed to support and enhance the Outstanding Universal Value of the WHS/character of ConservationAreas.	support of mobile unit(s) as outlined in the enforcement strategy (see June 2021 report). The strategy provides an effective deterrent, reduces revenue costs, street clutter and is flexible to future changes. • Communication & Engagement will continue in the run-up to LEZ enforcement, with key stakeholders and the public. • Embedded within the City Mobility Plan, Edinburgh's LEZ seeks to maximise opportunities to improve public realm, encourage active travel and promote modal shift to sustainable transport. Notably, the funds to implement Edinburgh's LEZ are provided by Scottish Government/Transport Scotland and do not cover other sustainable transport schemes
Corstorphine Community Council	**Introduction** Corstorphine Community Council (CCC) represents the views and concerns of residents in the Corstorphine area of Edinburgh.It is one of the largest community councils in the city, covering the areas of Carrick Knowe, Forrester, Gyle, Maybury and the historic Corstorphine village. We would like to respond to City of Edinburgh Council's (CEC) Low Emissions Zone (LEZ) consultation, as its contents and themes have the potential to improve the local area for residents. Residents in the Corstorphine area have ongoing concerns about poor air quality, congestion, and traffic domination. CCC andresidents would like Corstorphine to be a safe, friendly, and inviting place to live but too often elevated levels of traffic make getting around difficult, especially for vulnerable people in the community, including families with small children, elderly people,and people with disabilities. Poor air quality in	• Boundary Size – The city centre LEZ boundary was selected as preferred option, based on its efficacy to tackle air quality where negative impacts are greatest. An extended urban LEZ boundary was excluded during the appraisal of options (see June 2021 report). Air quality modelling undertaken by SEPA on the potential effects of the LEZ indicate that air quality will improve across the whole city • The Council is currently developing

	our community disproportionately impacts the young and old and those with pre-existing medical conditions and disabilities. CCC has the unenviable task of dealing with one of the most polluted streets in Scotland. St Johns Road in Edinburgh is a hugeair pollution hotspot, evidenced by multiple years of data and an active AQMA. It has regularly received the annual top spot onthe "most polluted streets" list. The community must deal with health impacts, detriment to the local environment and economicimpacts as the current mechanisms in place to deal with air quality are inadequate The Community Council hosted a visit by the Scottish Parliament's Environment, Climate Change and Land Reform Committee.The Committee who was producing a report on poor air quality in Scotland singled out Corstorphine to the exclusion of otherareas nationally for attention and comment as St. John's Road had the unwanted epithet of 'the most polluted street in Scotland.' During their visit, the Committee interviewed residents who had contracted health issues such as respiratory complaints due to living in proximity to St. John's Road. Recommended follow up work involving investigating such cases with local health centres did not take place. The Community Council has also hosted representatives of the City Council's Transport and Environment Committee at one ofregular monthly meetings to discuss action on pollution issues, particularly around the proposed LEZ for Edinburgh. The passionately felt message that was delivered was that any LEZ for Edinburgh must include the West encompassing St. John's Road and Queensferry Road. CEC has a legal and moral duty to combat air pollution. LEZs have been shown to be the most effective way to mitigate air pollution from transport by UK Government research.[1] LEZs are sixty times more effective than a scrappage scheme and are thequickest and most cost-effective way to tackle the problem. Air pollution is a public health issue that needs to be addressed urgently. Poor air quality is an equality and social justice issue.There is a positive relationship between air quality and social deprivation, with the poorest communities more likely to be disproportionately impacted.[2]	and Air Quality Action Plan to address emissions in the City's Air Quality Management Areas. LEZ is one of a suite of actions to be delivered as part of that plan to tackle poor air quality. The Plan will also include targeted interventions. Feasibility work has been undertaken for junction improvements that would reduce traffic queueing and pollution concentrations further in the St John's Road AQMA.

	Air pollution is mostly contributed by road traffic. In 2020 in Edinburgh, half of the city's population used a private car as theirmain form of transport,[3] and single occupancy journeys accounted for over two thirds of all car journeys. Data shows that morethan half of all car trips were 5km or less, and 20% of all journeys were 1km or less.[4] For most people, these short distances canbe easily managed by foot, bus, and cycle. 1. https://consult.defra.gov.uk/airquality/air-quality-plan-for-tackling-nitrogen-dioxide/supporting_documents/Technical Report Amended 9 May 2017.pdf 2. Building Scotland's Low Emissions Zones – A Consultation, Transport Scotland, 2017 3. https://www.edinburgh.gov.uk/downloads/file/29314/edinburgh-by-numbers-2020 4. Transport and Travel in Scotland 2016, (26 September 2017) Elevated levels of car use in Corstorphine not only contribute to poor air quality, but cause detriment through noise pollution,reduction of community cohesion, reduced street safety, congestion, social isolation and all the corresponding negative economic impacts. It is vital that CEC prioritises modal shift away from private vehicles and towards more efficient and healthiermodes of transport. The roll out of LEZs can support modal shifts to less polluting transport modes. The decisions taken from this consultation can significantly contribute to Corstorphine residents' quality of life, and implemented well, they can support several CEC and Scottish Government policies, including CEC's City Centre Transformationand City Mobility Plan, the Active Scotland Delivery Plan, the Climate Change Plan and a range of associated carbon reductiontargets, the National Walking Strategy, the National Biodiversity Routemap and the Cycling Action Plan for Scotland. **To what extent are you in favour of the Edinburgh LEZ as proposed?**	

	We find ourselves in the position of being entirely supportive of the introduction of an LEZ and adamantly opposed to the current proposal. It is telling that the Community Council and our elected representatives from both local and national legislatures have had differing views on measures that have been introduced by the City Council over the last two years. However, there is unanimity on the view that an LEZ is desirable and should encompass the West of Edinburgh. The city centre LEZ is too small. Ideally the community council would like to see one LEZ boundary which covers the city boundary of Edinburgh and includes private cars as well as all other vehicle types.	
Edinburgh Old Town Community Council	**Q. To what extent are you in favour of the Edinburgh LEZ as proposed?** Somewhat in favour **Q. To what extent are you in favour of the boundary for the LEZ in Edinburgh as proposed?** Somewhat in favour **Q. With reference to the grace period, to what extent are you in favour of this approach which applies the grace period equally to residents, non-residents and all vehicle types?** Somewhat in favour **Q. Which of the following best fits your views on the length of the grace period?** 2 years is too long a time period **Q. Overall, to what extent are you in favour of this local exemption approach?** Strongly in favour	• The Council notes support for LEZ and main scheme elements. • Grace period - Covid-19 and economic recovery impacts are considered alongside negative damage costs to public health associated with not implementing the LEZ in a timely manner. Appraisal sought balance between impacts and concluded that the grace period and no local exemption approaches, as well as the grace period length, as proposed, is deemed proportionate.

Murrayfield Community Council	**To what extent are you in favour of the Edinburgh LEZ as proposed?** Somewhat oppose. Air pollution is one of the greatest threats to urban quality of life, and we strongly support tackling it by means of an LEZ and other measures such as better public transport (eg tram extensions) and promotion of active travel. However these must be on a citywide basis. What you have proposed simply transfers the problem from the city centre to adjoining areas, and will encourage drivers of polluting vehicles to park them in places like Murrayfield. **Q. To what extent are you in favour of the boundary for the LEZ in Edinburgh as proposed?** Strongly oppose. Because it would result in drivers of polluting vehicles driving round our area looking for a parking space. **Q. With reference to the grace period, to what extent are you in favour of this approach which applies the grace period equally to residents, non-residents and all vehicle types?** Strongly in favour. **Q. Which of the following best fits your views on the length of the grace period?** 2 years is too long a time period **Q. Overall, to what extent are you in favour of this local exemption approach?** Somewhat in favour. **Q. Are there any other groups of people or type of vehicle you think should be exempt from the LEZ? Which and why?** Maybe there should be a short-term exemption for vehicles operated by charities?	• The Council notes support for action to address poor air quality, and grace period/no local exemption approaches. • Boundary Size – The city centre LEZ boundary was selected as preferred option, based on its efficacy to tackle air quality where negative impacts are greatest. An extended urban LEZ boundary was excluded during the appraisal of options (see June 2021 report). Air quality modelling undertaken by SEPA on the potential effects of the LEZ indicate that air quality will improve across the whole city • Displacement/Network Management Strategy – the Council is developing to address potential impacts. It will identify specific mitigation measures around the boundary, monitor impacts and include a complementary signage and communications strategy. • Grace period/local exemptions - Covid-19 and economic recovery impacts are considered alongside negative damage costs to public health associated with not implementing the LEZ in a timely manner. Appraisal sought balance between impacts and concluded that the grace period and no local exemption approaches, as well as

		the grace period length, as proposed, is deemed proportionate. • Local exemptions – proposed scheme to provision only in exceptional circumstances
New Town & Broughton Community Council	The New Town and Broughton Community Council (NTBCC) welcomes the Council's plans to move forward with introducing a Low Emissions Zone (LEZ) in Edinburgh but we are concerned that the current proposals are not sufficiently ambitious and will have a serious detrimental impact for some residents, particularly those that live outside the boundaries of the currently proposed City Centre LEZ. We strongly believe that the boundaries of the LEZ should be increased in order to benefit a largerproportion of the residents of Edinburgh. The area of the proposed LEZ currently covers only 2.5% of the City and excludes many areas of the City with the greatest density of residents. It will also not include the designated Town Centres and areas such as Broughton Street, which form such an important element in the development of 20- minute neighbourhoods outlined in the recently approved City Mobility Plan. In setting the boundaries of the LEZ, more consideration has been given to providing convenient diversionaryroutes for non-compliant vehicles than maximising the health benefits for people living in Edinburgh. Pollution levels have been considered on an absolute basis without any consideration of the number of people that will be exposed to that pollution. We are particularly concerned that there is no recognition of the risks to pedestrians from vehicular emissions in areas outside of the proposed LEZ; some of which have very high levels of walking including children walking to school. There are three sections of the currently proposed boundary within the NTBCC area where we believe that furtherconsideration is required before the plans are finalised. These are as follows: **1. Calton Hill** – currently the boundary of the LEZ does not include	• Boundary – an extended urban LEZ boundary was excluded during the appraisal of options (see June 2021 report). Air quality modelling undertaken by SEPA on the potential effects of the LEZ indicate that air quality will improve across the whole city • NOx from vehicles – It is a statutory requirement of the LEZ scheme to aim to reduce NO2 (major component of NOx) concentrations. However, through the assessment of LEZ scheme under the National Modelling Framework, it has also been shown that significant reductions of particulate emissions are expected. • The Council is currently developing an Air Quality Action Plan to address emissions in the City's Air Quality Management Areas. LEZ is one of a suite of actions to be delivered as part of that plan to tackle poor air quality. The Plan will also include wider measures that will improve air quality across the city as well

	Regent Road from its junction with Abbey Mount and Easter Road until it becomes Waterloo Place. This creates an anomaly in that non-compliant traffic is allowed to enter Regent Road but cannot exit this road without turning around outside St Andrews House and returning from where it had entered. It is recommended that the boundary should be redrawn to include Regent Road to ensure that non-compliant vehicles do remain on major arterial routes as recommended by Transport Scotland. This would also ensure greater protection of the green space surrounding Calton Hill, which is such an important area for walking. A further benefit of this change would be toreduce the number of access points to the LEZ and thus facilitate effective enforcement. **2. London Road** – currently the boundary in the north east of the LEZ is shown following a series of residential streets to the south of London Road. It is suggested that the boundary is redrawn to follow the south side of London Road so that London Road from its junction with Leith walk until its junction with Easter Road becomes the boundary of LEZ. As a major arterial road, London Road should be clearly designated as the primary diversionary route in this part of the city. As a result Blenheim Place, Royal Terrace, Carlton Terrace, Regent Terrace and associated Mews would all fall within the boundaries of the LEZ. This again will have benefits in simplifying the enforcement regime in this part of the city and discouraging the use of residential streets by noncompliant vehicles. **3. Randolph Crescent/Great Stuart Street/Ainslie Place** – currently traffic entering the City from the north west that wants to access the east of the City will use these streets to access Queen Street. Queen Street is proposed to be one of the primarydiversionary routes for noncompliant vehicles thus resulting in an increase in such vehicles using these streets. This part of the City is not only within the World Heritage Site but also forms part of the New Town Conservation Area. There are already significant issues from noise and vibration created by the volume of traffic including HGV and PSV using these mainly setted streets. The exclusion of these streets from the proposed	targeted interventions. • Displacement/Network Management Strategy – the Council is developing to address potential impacts. It will identify specific mitigation measures around the boundary, monitor impacts and include a complementary signage and communications strategy. • Focus on NOx from vehicles – It is a statutory requirement of the LEZ scheme to aim to reduce NO2 (major component of NOx) concentrations. However, through the assessment of LEZ scheme under the National Modelling Framework, it has also been shown that significant reductions of particulate emissions are expected. The other statutory objective for the LEZ scheme is to ensure it works towards greenhouse gas emission reductions. • The Council is currently developing an Air Quality Action Plan to address emissions in the City's Air Quality Management Areas (AQMAs). LEZ is one of a suite of actions to be delivered as part of that plan to tackle poor air quality. The Plan will also include wider measures that will improve air quality across the city, as well targeted interventions. • Electric vehicles – the emission standards required to meet the LEZ are set out in statute and include

	LEZ and thus increased use by non-compliant vehicles will add to these issues. It does not appear that the use of these streets meets the guidance being developed by Transport Scotland for diversionary routes. It is recommended that if the boundary remains as currently proposed that further measures to mitigate the consequences of increased traffic are clearly defined including bans on certain types of vehicles using these streets. The report that was considered by the Transport and Environment Committee at their 17 June 2021 meeting states non- compliant vehicles will increasingly use the roads immediately outside the LEZ resulting in increased pollution on these routes. The SEPA forecast attached to the report shows an increase in atmospheric pollution on Queen Street, London Streetand Abbeyhill; all areas on the edge of the proposed LEZ. We note that the Council has included an objective to the impact from traffic displacement across network, related to LEZ scheme". Insufficient detail is provided on the mitigatingactions that will be taken or how achievement of this objective will be measured. Before a final decision is taken on introducing a LEZ, it is critical that there are clear plans in place to limit the negative impact of displaced traffic to reassure residents living near the LEZ. The current plans are on reducing levels NOx pollution from vehicles within a small part of the City to meet currentlegislative limits. In our view, this goal does not go far enough. Other forms and sources of pollution need to be both more closely monitored and reduced, in particular the levels of particulate pollution and continued use of temporary diesel generators within the LEZ. We would like to see the Council setting more ambitious and wide ranging targets for reducing pollution given the accepted health benefits of such a reduction. **This is the time for bold action that supports the Council's plans to encourage walking, wheeling and cycling across the City.** Despite the title of a 'low emission zone', the proposals do not address the need to reduce carbon dioxide emissions. Plans that only address	Petrol Euro 4 and Diesel Euro VI/6 vehicles. It is important the public communication around compliant vehicles is not mis-guided. Encouraging electric vehicles is supported more widely by the Council's CMP and can complements the LEZ plans. The development of the rollout of electric vehicle charging infrastructure is being progressed by the Council • Enforcement – the Council is progressing a enforcement regime which covers the main entry/exit points with fixed ANPR cameras with support of mobile unit(s) as outlined in the enforcement strategy (see June 2021 report). The strategy provides an effective deterrent, reduces revenue costs, street clutter and is flexible to future changes.

	pollution are essentially backward looking, whereas we should be looking forward to a future where fossil-fuel vehicles are completely eliminated. As well as ensuring that non-compliant vehicles are not used in the LEZ, there needsto be a greater effort to reduce overall emissions. We note that there is no mention of encouraging the use of electric vehicles in the proposals. We would have expected to see a commitment to accelerate the roll out of electric vehicle chargingpoints. While we understand the reasons for seeking a reduction in private car usage this should not be to the exclusion of encouraging people to switch to more environmentally friendly vehicles. The wider availability of EV charging points would encourage this change of use, which would be positive for both the environment and economy. Finally, we note that the enforcement regime will be based on the use of automatic number plate recognition (ANPR) cameras. From our review of Appendix 7 of the report presented to the 17 June 2021 Transport and Environment Committee meeting, we note that the recommended approach is to install these cameras on only 16 routes of the identified 48 entry points to the City centre LEZ. One mobile unit will cover the other 32 entry routes. Given that the LEZ is intended to operate 24/7, we are concerned that this approach will affect the levels of compliance required for the LEZ to achieve the intended reduction in atmospheric pollution and health benefits for those living and working within the City centre. We are further concerned that this approach will encourage the drivers of non-compliant vehicles to use the nonarterial routes to avoid detection thus increasing traffic further in the many residential streets bounding the proposed LEZ. We believe that to achievethe required compliance for the success of the LEZ, it is critical that enforcement is rigorously applied. There have been too many Council transport-related initiatives (e.g. 20mph speed limits, parking and loading restrictions, prohibition of idling stationary vehicles) that have foundered due to lack of effective enforcement. We do not believe that the currently proposed arrangements are adequate. 16 September 2021	
Northfield & Willowbrae Community Council	**To what extent are you in favour of the Edinburgh LEZ as proposed?** Somewhat in favour.	• Boundary Size – The city centre LEZ boundary was selected as preferred option, based on its efficacy to tackle air quality where negative impacts

	Q. To what extent are you in favour of the boundary for the LEZ in Edinburgh as proposed? Somewhat oppose. The boundary should be extended. The proposals could lead to rat running in adjacent streets outside the zone. The proposals also do nothing to deal with traffic "hotspots" outside the central area, eg Corstorphine, Portobello High Street. **Q. With reference to the grace period, to what extent are you in favour of this approach which applies the grace period equally to residents, non-residents and all vehicle types?** Strongly in favour. **Q. Which of the following best fits your views on the length of the grace period?** 2 years is about right and should be sufficient time **Q. Overall, to what extent are you in favour of this local exemption approach?** Strongly in favour.	are greatest. An extended urban LEZ boundary was excluded during the appraisal of options (see June 2021 report). Air quality modelling undertaken by SEPA on the potential effects of the LEZ indicate that air quality will improve across the whole city • Displacement/Network Management Strategy – the Council is developing to address potential impacts. It will identify specific mitigation measures around the boundary, monitor impacts and include a complementary signage and communications strategy. • Embedded within the City Mobility Plan, Edinburgh's LEZ seeks to maximise opportunities to improve public realm, encourage active travel and promote modal shift to sustainable transport.
Southside Community Council	The Southside Community Council is in favour, of course, of cutting air pollutants from traffic and are therefore in favour of an LEZ in principle, even if many of us think other schemes might be more effective (such as the Congestion Charge.) We would like the zone to be more extensive; we are aware of very polluted streets out of the zone, as in Leith and St Johns Road. However, we understand that whatever boundaries are drawn, they must be workable and perhaps a much bigger zone would be unworkable. It would be interesting to know more about how the boundaries were decided. We are concerned about the impacts on the boundary streets themselves,	• The Council notes support for LEZ and main scheme elements. • Other schemes – the LEZ is one initiative that is being implemented – it will complement, and be complemented by, other initiatives aimed at reducing emissions and effecting travel behaviour change, many of which are set out in the City Mobility Plan.

	particularly the corner of Dalkeith Rd and East Preston Street, where Preston Street Primary School is located. Will the LEZ negatively impact the air quality and road congestion around the school? What traffic modelling has been done? What does it predict? We also wondered about the ANPR cameras; will they be on every corner of every street off the "ring-road" of the boundary roads? If not, what is to prevent unacceptable vehicles from turning into a street without a camera and perhaps finding a route of side streets without cameras far into the zone? We would, in balance, favour a somewhat shorter grace period. Is there any reason why 18 months would not be sufficient for anyone to put in place changes needed? We have no real concerns with the exceptions. How will the effects of the LEZ be measured? Will all the current air quality stations in Edinburgh remain active and the data they provide used? It is surely important to see what happens both inside and out of the LEZ over time. In the broader picture, we think LEZs might have the unfortunate effect of encouraging the use of new cars rather than actually reducing the number of cars, which most of the world now acknowledges is where we need to be going. New cars are environmentally costly (including in emissions) to produce. Scrapping old cars is energy and emission heavy too. LEZs do not directly address road congestion. They do not incentivise giving up car ownership equally across all social and economic groups. Members of our Community Council expressed the concern that this LEZ seems to be a free pass for wealthier people who live in the suburbs and own large, (congesting) and energy hungry SUVs that meet the standards for entering the LEZ, whereas poorer people, living within the zone who own older cars they may use primarily for trips out of town, will have to scrap these cars or find a way of keeping it out of the zone. This makes the scheme seem somewhat socially unfair. We recognise that the CEC and Scottish Government are doing other	• Boundary Size – The city centre LEZ boundary was selected as preferred option, based on its efficacy to tackle air quality where negative impacts are greatest. An extended urban LEZ boundary was excluded during the appraisal of options (see June 2021 report). Air quality modelling undertaken by SEPA on the potential effects of the LEZ indicate that air quality will improve across the whole city • Enforcement – the Council is progressing a enforcement regime which covers the main entry/exit points with fixed ANPR cameras with support of mobile unit(s) as outlined in the enforcement strategy (see June 2021 report). The strategy provides an effective deterrent, reduces revenue costs, street clutter and is flexible to future changes. • Grace period – Covid-19 and economic recovery impacts are considered alongside negative damage costs to public health associated with not implementing the LEZ in a timely manner. Appraisal sought balance between impacts and concluded that the grace period and no local exemption approaches, as well as the grace period length, as proposed, is deemed proportionate. • Displacement/Network Management

	things as well as LEZs to address the environmental issues raised here, including improving infrastructure for walking and cycling, trying to improve public transport, reducing energy use in many ways, etc. and that this consultation is only about air quality. But it is important that all initiatives, schemes and changes link logically. We also recognise that there is little scope to alter the basic structure of the LEZ as we understand it is "off the peg," with only minor alterations possible. Therefore, we are basically supportive.	Strategy - the Council is developing to address potential impacts. It will identify specific mitigation measures around the boundary, monitor impacts and include a complementary signage and communications strategy. • Car ownership – while the LEZ will not reduce congestion in isolation it will ensure that the most polluting vehicles will be excluded from the area where air quality issues are most acute. In conjunction with other policies aimed at reducing car use and increasing levels of use of public transport, walking, wheeling and cycling the LEZ will help to improve air quality in the city. • Social equality – by the time the LEZ is enforced in 2024 only petrol vehicles registered before 2006 and diesel vehicles registered before 2015 will be non-compliant – grant funding is available for people who may have difficulty upgrading their vehicle to help with the cost. • Linking of initiatives – the LEZ is one of a wide range of mobility and placemaking initiatives in the City Mobility Plan, all of which are complementary in aiming to reduce car use and improve air quality. • The Council is currently developing an Air Quality Action Plan to address

		emissions in the City's Air Quality Management Areas. LEZ is one of a suite of actions to be delivered as part of that plan to tackle poor air quality. The Plan will also include wider measures that will improve air quality across the City, as well targeted interventions in AQMAs.
Stockbridge and Inverleith Community Council	Stockbridge and Inverleith Community Council would like to make the following comments on the consultation document. Whilst appreciating that the introduction of a LEZ may lead to improvements in air quality in the zone with benefits for healththere are some points that should be considered: 1. There undoubtedly will be displacement of vehicles not allowed in the zone to surrounding streets to avoid the zone.This could lead to problems in an area such as Stockbridge. Experience in other cities with LEZ, it is said, have had benefits out with the LEZ and not the problems envisaged. These are all large cities whereas Edinburgh is small and still has a significant population living within the central area. It does not take very much to create congestion, delays,idling traffic and increased emissions. Some examples of Spaces for People schemes have demonstrated this. Benefits within the LEZ may, because of the road structure in Edinburgh, mean more pollution out with the area. 2. Many HGV's will not be allowed to enter the LEZ to deliver goods to retail outlets etc. Therefore, depots will need tobe constructed out with the zone to transfer goods to compliant vehicles. Where are these going to be situated? Inaddition, this will lead to even more vehicles on the roads leading to more congestion, idling vehicles and increased emissions, even from compliant vehicles. 3. The grants for those on means tested benefits are totally inadequate for those who require a car for their work which may involve repeated journeys into and out of the LEZ	• Displacement/Network Management Strategy - the Council is developing to address potential impacts. It will identify specific mitigation measures around the boundary, monitor impacts and include a complementary signage and communications strategy. • HGVs – the vast majority of HGVs which access the city are, or will be, compliant by the time enforcement commences in 2024. Various organisations representing the freight and logistics companies have been involved in extensive consultation, including Logistics UK, Road Haulage Association and Ecostars members. • Grant funding - by the time the LEZ is enforced in 2024 only petrol vehicles registered before 2006 and diesel vehicles registered before 2015 will be non-compliant. The level of funding would be sufficient to purchase a compliant car. • Enforcement – the Council is

	each day. Some types of work cannot be performed bywalking, cycling and using public transport. The purchase price of a compliant car will greatly exceed the grant available. In addition, many residents of the city are unable, for various reasons, to use public transport and aretotally dependent on car travel. They may not be able to afford a new car. It is to be hoped that the 16 cameras around the periphery of the LEZ will not be too intrusive in the World Heritagesite where there is already the threat of large unsightly bin hubs	progressing a enforcement regime which covers the main entry/exit points with fixed ANPR cameras with support of mobile unit(s) as outlined in the enforcement strategy (see June 2021 report). The strategy provides an effective deterrent, reduces revenue costs, street clutter and is flexible to future changes.
West End Community Council	Based on this presentation and the 239 page Transport and Environment Committee Report of the 17th June you kindly forwarded to us, the West End Community Council objects strongly to the proposals in their current form on the followingbasis; 1. Option 1 Boundary (Officer preferred). This option puts the LEZ boundary through the middle of the West End deliberatelycreating a route for non compliant vehicles (commercial and private) through the residential streets of the west end. These streets have experienced a significant increase in traffic volumes and speeds from the tram installation and further are expected from implementation of the CCWEL project. It can only be expected that Palmerston Place (50% increase) Chester Street (22%increase) and the streets to the west (increase not assessed) will have significantly worse air quality, increased traffic and further speeding vehicles as a result of this option for some years to come, indeed this is highlighted in the Jacobsreport. 2. Option 2 Boundary. This smaller zone sees the projected reduction of air quality over the modelled period to 2023 particularly around Morrison Street/West Maitland Street/Torphichen Street which is again an unacceptable outcome for residents in these streets in particular. This option appears to be discounted due to its reduced impact on emissions in thecity centre. 3. Option 3 Boundary. The City bypass appears to be the only viable boundary to avoid non-compliant vehicles being directedvia the West	• Boundary Size – The city centre LEZ boundary was selected as preferred option, based on its efficacy to tackle air quality where negative impacts are greatest. An extended urban LEZ boundary was excluded during the appraisal of options (see June 2021 report). Air quality modelling undertaken by SEPA on the potential effects of the LEZ indicate that air quality will improve across the whole city • Enforcement – the Council is progressing a enforcement regime which covers the main entry/exit points with fixed ANPR cameras with support of mobile unit(s) as outlined in the enforcement strategy (see June 2021 report). The strategy provides an effective deterrent, reduces revenue costs, street clutter and is flexible to future changes. • Displacement/Network Management Strategy - the Council is developing

	End residential areas .It also ensures that all exit/entry points can be suitably signed and have ANPR. This option appears however to have been discounted largely on implementation issues centred on cost. 4. The lack of a mitigation strategy to accompany the proposed LEZ boundaries means the anticipated degradation of air quality, increased traffic volumes and hence road safety issues in the West End are unacceptable. The increasing use of driveraids such as Google Maps mean that, regardless of good intent drivers are directed in real time via the fastest route to avoidrestrictions, regardless of the street's residential nature. 5. The provision of only 16 ANPR points (of 48 possible points for option 1) with the addition of a 'roving camera' will mostlikely result in less than full compliance, especially at the periphery just within the boundary, again affecting the West End streets and their residents disproportionately. 6. The focus of the scheme has clearly been developed with emissions as a primary focus without a broader outlook as the proposed changes to Morrison Street to make it a two-way street do not account for the new taxi feeder rank required to make the CCWEL project feasible at Haymarket. The proposals do not also appear to have included the more recent traffic survey to Magdala and Douglas Crescents. The proposals should therefore be reconsidered in a broader context of the otherCouncil initiatives. 7. Many residents of the West End currently own private vehicles, and whilst there are means tested schemes in place for scrappage there are no non-means tested schemes in place such as for EV charging, either directly provided by the council oran enabling policy for residents or community associations to install them such as the car club provision. Residents of the West End who live within the zone or outside and need to transit the zone, say to use their Zone 1 parking permit are therefore disproportionately impacted. 8. There does not appear to be any firm provision to monitor the	to address potential impacts. It will identify specific mitigation measures around the boundary, monitor impacts and include a complementary signage and communications strategy. • The LEZ is concerned with improving air quality through removing the most polluting vehicles from the zone – this means petrol vehicles older registered before 2006 and diesel vehicles registered before 2015. The scrappage scheme is designed to help those who may struggle to switch to a compliant vehicle. • The LEZ has been designed based on results of previous rounds of consultation with residents and businesses and extensive traffic, transport and air quality data and modelling that shows that air quality will improve across the whole city and traffic displacement will be limited.

	scheme sufficiently broadly and make adjustments shouldthe modelling prove to have been inaccurate or the impacts which West End residents fear come to pass. Indeed the proxy use of N02 as a measure of pollution has completely ignored the monitoring of particulates PM10 and PM2.5 which have been demonstrated to have significant health impacts. Previous assurances on monitoring impacts of such schemes such asthe phase 3 traffic impact assessment from the tram project have unfortunately come to nought with regard to side street displacement traffic. We note the considerable uncertainty in the post covid modelling reflected in the scenario planning exercise and also that not a single community council representative was included amongst the workshop attendees. In summary, the West End Community Council strongly object to the LEZ proposals in their current form, as they will have significant impacts on the health, quality of life and environment of the West End and its residents. The failure to take due consideration of Place and the residents' views in particular mean we consider the imposition of these negative impacts on the West End as a levelling down for the City as a whole and should not therefore be implemented.	
Edinburgh Association of Community Councils	**Workshop Summary Notes:** Concerns around displacement of traffic and polluting vehicles in areas of the city outside the boundary. As the boundary is only the city centre what is being done in other parts of the city? Want to know if air quality monitoring will continue across the whole city.	• Displacement/Network Management Strategy - the Council is developing to address potential impacts. It will identify specific mitigation measures around the boundary, monitor impacts and include a complementary signage and communications strategy. • Boundary Size – The city centre LEZ boundary was selected as preferred option, based on its efficacy to tackle air quality where negative impacts are greatest. An extended urban LEZ boundary was excluded during the appraisal of options (see June 2021 report). Air quality modelling

		undertaken by SEPA on the potential effects of the LEZ indicate that air quality will improve across the whole city • Air quality will continue to be monitored across the whole of the city and where there are issues they will be addressed through mechanisms such as the Air Quality Action Plan and Air Quality Management Areas. Modelling has shown that the city centre boundary for the LEZ will improve air quality across the whole city**.**
Colinton Community Council Gorgie Dalry Community Council Grange/Prestonfield Community Council Leith Central Community Council Morningside Community Council Trinity Community Council	**Meeting of Community Councils with the City of Edinburgh Council (12/08/21, 19:00)** Attendees in addition to those listed (left) include: • Edinburgh Old Town Community Council • New Town & Broughton Community Council • Northfield & Willowbrae Community Council • Southside Community Council • Stockbridge & Inverleith Community Council • West End Community Council • Edinburgh Association of Community Councils Topics covered included: • Size/scale of LEZ boundary – most intimated that it was too small, citing other options e.g. extended urban area boundary at bypass, options to include a larger portion of the city centre in community council areas • Concerns that negative air quality in AQMAs outwith city centre	• Boundary Size – The city centre LEZ boundary was selected as preferred option, based on its efficacy to tackle air quality where negative impacts are greatest. An extended urban LEZ boundary was excluded during the appraisal of options (see June 2021 report). Air quality modelling undertaken by SEPA on the potential effects of the LEZ indicate that air quality will improve across the whole city • Displacement/Network Management Strategy - the Council is developing to address potential impacts. It will identify specific mitigation measures around the boundary, monitor impacts and include a complementary signage and communications strategy.

	would not be addressed by city centre LEZ • Displacement impacts at city centre boundary in community council areas	
Grassmarket Residents' Association	**To what extent are you in favour of the Edinburgh LEZ as proposed?** Somewhat in favour. **Q. To what extent are you in favour of the boundary for the LEZ in Edinburgh as proposed?** Somewhat oppose. Why not apply it to the whole of Edinburgh? **Q. With reference to the grace period, to what extent are you in favour of this approach which applies the grace period equally to residents, non-residents and all vehicle types?** Strongly in favour. **Q. Which of the following best fits your views on the length of the grace period?** 2 years is too short a time period **Q. Overall, to what extent are you in favour of this local exemption approach?** Somewhat in favour. **Q. Are there any other groups of people or type of vehicle you think should be exempt from the LEZ? Which and why?** People with mobility issues who do not have a Blue badge or those who give lifts to them on a regular basis. In addition to the survey just completed and sent (which was heavily weighted to individual responses) we would like to makethe some more	• The Council notes support for LEZ and main scheme elements (with exception of boundary). • Boundary Size – The city centre LEZ boundary was selected as preferred option, based on its efficacy to tackle air quality where negative impacts are greatest. An extended urban LEZ boundary was excluded during the appraisal of options (see June 2021 report). Air quality modelling undertaken by SEPA on the potential effects of the LEZ indicate that air quality will improve across the whole city • Grace period - Covid-19 and economic recovery impacts are considered alongside negative damage costs to public health associated with not implementing the LEZ in a timely manner. Appraisal sought balance between impacts and concluded that the grace period and no local exemption approaches, as well as the grace period length, as proposed, is deemed proportionate. • Road closures – road closures are effected though other schemes and projects.

	expansive comments: 1. There have been numerous road closures in the city-centre. These often end up creating more traffic in other streets suchas the Cowgate. 2. We have many elderly residents. Often they get lifts from neighbours who do not have Blue badges. Sometimes elderly residents from outside the Zone come into the centre for purposes like attending worship. 3. We strongly object to the multiple "Hop-on hop off" buses and the Ghost tour which trawl our streets every few minutes everyday. There are far too many and they pollute our streets horribly - we would urge you to make their removal a priority. Equally, bigger and more-enforced fines should be made on the coach-drivers who frequently idle their engines on Johnston Terrace for example. At the moment it is left to local pedestrians to try to police this polluting behaviour. These measurescould be enforced immediately. 4. HOWEVER, it is imperative that our Lothian service-bus services in the centre are not reduced in anyway as they are ourlifeline, eg for accessing supermarkets. We also NEED work-vehicles such as plumbers and carpet-fitters to access our homes and not to be banned because theyhave not complied. This goes for access in pedestrianised streets too eg flats above shops in Victoria St.	• An Integrated Impact Assessment was undertaken to look at the potential impacts on different groups who access the city centre. The LEZ will apply to a small minority of vehicles (petrol vehicles registered before 2006 and diesel vehicles registered before 2015) and grant funding is available for those who may find it difficult to change from non-compliant vehicle to a compliant one. • As with all types of vehicle only buses, including tour buses, that are compliant will be allowed to enter the LEZ. • The LEZ will have no impact on routing or frequency of Lothian buses – the LEZ is concerned with removing the most polluting vehicles from the zone.
Scottish Parliament	**To what extent are you in favour of the Edinburgh LEZ as proposed?** Somewhat in favour **Q. To what extent are you in favour of the boundary for the LEZ in Edinburgh as proposed?** Somewhat in favour **Q. With reference to the grace period, to what extent are you in favour of this approach which applies the grace period equally to residents, non-residents and all vehicle types?**	• The Council notes support for LEZ and main scheme elements.

	Somewhat in favour **Q. Which of the following best fits your views on the length of the grace period?** 2 years is about right and should be sufficient time **Q. Overall, to what extent are you in favour of this local exemption approach?** Strongly in favour	
Cockburn Association	The Cockburn Association would wish to make these comments on the Low Emission Zone proposals being consulted uponby the City of Edinburgh Council. Regretfully, we are unable to support these proposals. This comes in the context of our full support for the initial LEZ proposed by the Council in July 2019. We supported the introduction of both a City-wide and City-centre LEZs accepting the arguments made at the time that only a holistic approachwould prevent current "hot spots" being shifted around the city as general traffic sought ways of avoiding any smaller zone. With the City of Edinburgh Council's current commitment for a net zero emission on city by 2030, the LEZ is an opportunity tomake changes needed across the City of Edinburgh. The city-centre boundary must be expanded city-wide to avoid displacement of pollution into residential streets and to create a cleaner, healthier city for all residents. **Context** It is important to understand the wider movement trends in order to achieve any satisfactory outcome from an LEZ. The CityMobility Plan 2021-30 sets out the Council's vision and policies, aimed largely at reducing pollution and increased the modalshift to active travel. Edinburgh has a very high pedestrian journey to work percentage, where 40% walk to work in the city centre and 18% walk to work citywide.	• Boundary Size – The city centre LEZ boundary was selected as preferred option, based on its efficacy to tackle air quality where negative impacts are greatest. An extended urban LEZ boundary was excluded during the appraisal of options (see June 2021 report). Air quality modelling undertaken by SEPA on the potential effects of the LEZ indicate that air quality will improve across the whole city • Displacement/Network Management Strategy - the Council is developing to address potential impacts. It will identify specific mitigation measures around the boundary, monitor impacts and include a complementary signage and communications strategy. • The proposed 2-year grace period is deemed sufficient time for residents and businesses to adapt to the LEZ. The Council actively encourages uptake of the Scottish Government's

	In contrast, two-thirds of commuter traffic entering into the city comes from outside the city boundary with 70 % of commuters from other local authorities traveling by car. This compares unfavourable to local commuting, where 33% drive towork. The related issue of traffic-generated pollution is directly linked origin of traffic. Some of the main "hotspots" for traffic pollution lie outside the city centre and include Corstorphine High Street and parts ofLeith. The current proposals will offer no solution to problems here. Indeed, they might see even higher levels of pollution as a result. **Current proposals – discussion** The proposal is for a city-centre zone only. <u>Boundary</u> The proposed zone excludes Queen Street and the Northern New Town but extends to and includes the Meadows, which seems a bit confused given the objectives of the LEZ. Indeed, the specific boundary suggests the creation of a *de facto* innerring route allowing more polluting vehicles to circumnavigate the LEZ. The implications for increased rat-running across the city is considerable. This could be greatest in the residential New Townas a result of the LEZ, where traffic seeking to avoid Queen Street could easily displace into residential streets, exacerbating traffic and pollution displacement issues. This would be very real outcome and a significant objection to the current LEZ proposals. We strongly advocate that the northern boundary of the LEZ be altered and extended to include Randolph Crescent and theMoray Feu, and the follow the approximate line of the World Heritage Site boundary. Queen Street would be subsumed intothis area. In this, we do have concerns of further potential displacement into Stockbridge and Inverleith. We also find the implication of the boundary is that the Morrison Street/A700 (Earl Grey Street, Brougham Street, Melville Drive) corridor	LEZ Support Funds available to eligible low income households and microbusinesses/sole traders located within 20km (12 miles) of Scotland's LEZs. • National exemptions, which apply to Edinburgh's Low Emission Zone, are set nationally by Transport Scotland. • Grace period - Covid-19 and economic recovery impacts are considered alongside negative damage costs to public health associated with not implementing the LEZ in a timely manner. Appraisal sought balance between impacts and concluded that the grace period and no local exemption approaches, as well as the grace period length, as proposed, is deemed proportionate.

	becomes the main arterial for polluting traffic heading around the LEZ to/from eastern and southern parts ofthe city. Similarly, St Leonard's and The Pleasance would become the eastern flank of this Inner Ring Route causing considerable increases in air pollution along this corridor. The potential diversion of traffic onto Queen's Drive and HolyroodPark (subject to a separate consultation by HES) is also deeply concerning. All this comes from the lack of a city-wide boundary for the LEZ. The compact, dense nature of Edinburgh will result innegative impacts for communities on the edge of the centre-boundary LEZ. This cannot be acceptable. Indeed, in the Transport & Environment Committee report of 16 May 2019 recognised this. It states in para 4.17, "there is arisk that a city centre boundary alone may displace polluting vehicles to other areas of the city and exacerbate existing air quality problems." This remains a very real and significant risk. The consultation does not explain why the wider urban area has been deleted and only the city centre included. This needsto be outlined fully as it contradicts the objectives set out in the paper of 16 May 2019. <u>Grace Period and Exclusions</u> A grace period of only two years is proposed although one might argue that two years have passed since first mooted. Giventhe economic and other challenges that Covid has created, we believe that this may be too short a period to allow residents and businesses to transition to other vehicle types. The LEZ also includes a list of vehicles exempted from the controls including military and emergency vehicles. Less clear is why historic vehicles are exempt (manufactured or registered at least 30 years or historically preserved in its original state).We can see no logic in this given the objectives of the LEZ.	

	Summary As stated above, the Cockburn Association is unable to support these proposals. We call for the dual LEZ proposals as outlined in 2019 to be reinstated, and offer the following suggestions as a way ofimproving the proposals. • High trafficked streets such as Queen Street, Melville Drive, Morrison Street and Picardy Place should be includedwith in the LEZ city-centre boundary. • Further consideration to inclusion of residential New Town Areas (as suggested initially by NTBCC) and especially those sections subject to high volumes of traffic or potential rat-runs through residential areas (e.g., section east ofDundas Street to London Road and Broughton Street). • In all this, the avoidance of creating an "inner ring route" must be a guiding principle. We also challenge vehicle exceptions for historic vehicles as they tend to be more polluting.	
Preston Street Primary School Parent Council	We are writing on behalf of the parent body at Preston Street Primary School to raise our strong opposition to the design ofthe proposed Low Emission Zone, in particular the decision to include the school on the perimeter of the scheme. As you may know, our school is situated at the junction of East Preston Street and Dalkeith Road. The school building is closeto the road and is bounded by narrow pavements. The LEZ as proposed sees the boundary run the length of East Preston Street and then north along Dalkeith Road. The proposal has the consequence of creating an inner ring-road around the citycentre and our school will sit at a main junction. We wish to express our disappointment about the proposed design and the inevitable increase in heavily polluting traffic funnelling past the school. Children at our school will continue to suffer the negative effects of increased traffic and poor airquality as a consequence. Research carried out by Napier University shows that limiting travel	• Boundary Size – The city centre LEZ boundary was selected as preferred option, based on its efficacy to tackle air quality where negative impacts are greatest. An extended urban LEZ boundary was excluded during the appraisal of options (see June 2021 report). Air quality modelling undertaken by SEPA on the potential effects of the LEZ indicate that air quality will improve across the whole city • The Network Management Strategy - the Council is developing, to address potential impacts will identify specific mitigation measures around the boundary. The strategy will also

	around school vicinities for relatively short periods of timeduring the day improves air quality around school playgrounds. This is a clear contrast to what will happen (and what is already happening) around our school. Increased exposure to pollutants including nitrogen oxide has a direct impact on childbehaviour and neurodevelopment. We believe that the current LEZ proposal will have a negative impact on the health and wellbeing of children at our school. We support the key aims of Low Emissions Zones which are to improve air quality and protect public health. We believe that the introduction of an LEZ in Edinburgh presents a fantastic opportunity for the city to improve the urban environment for allcitizens, to reduce the volume of vehicle traffic and increase opportunities for active travel. Figures quoted by the Cockburn Association highlight that two-thirds of commuter traffic entering into the city comes from outside the city boundary and that 70% of commuters from other local authorities travel by car. This compares unfavourably to local commuting, where 33% drive to work. The related issue of traffic-generated pollution is directly linked to the origin oftraffic. While these statistics are well rehearsed, we see the impact daily of commuter traffic on the school environs. This is particularly acute during the morning rush hour with traffic approaching from Holyrood Park and along Dalkeith Road. We urge the Council to be more ambitious in their LEZ delivery and to include key roads approaching the city to address this. If the Council deems it impossible to alter the proposed boundary, we would insist that suitable mitigations are put in place. These should build on the current Travelling Safely' measures directly outside the school. Since traffic will be diverted aroundthe school as a result of the LEZ, the Council must demonstrate a commitment to calming traffic and improving safety particularly around school opening times. Further, permanently widening the pavements around the school, building a greenbuffer between the road and pavement, and improving the pedestrian crossings would reduce the harms of this design.	ensure monitor of the impacts including air quality and traffic monitoring. The strategy will include a complementary signage and communications strategy. • A LEZ annual progress report is required by the regulations, on the operation and effectiveness of the scheme. This will be informed by a robust monitoring regime in terms of the Network Management Strategy which may cover public transport journey times, traffic surveys and public opinion surveys as well as the Council's well-established air quality monitoring network. • Further communications and engagement will be undertaken to share the Council's evidence-led decision making and the benefits of improving air quality in general. • The LEZ project is supportive of the Travelling Safely measures to calm traffic and improve safety around the school. • Grace period - Covid-19 and economic recovery impacts are considered alongside negative damage costs to public health associated with not implementing the LEZ in a timely manner. Appraisal sought balance between impacts and concluded that the grace period and no local exemption approaches, as well as the grace period length, as

	We recognise that there are challenges in introducing a city wide LEZ, however the Council has declared a climate emergency and has committed to a net zero strategy by 2030. A wider LEZ scheme would go further toward meeting this ambition, without being at the expense of the health of the children at Preston Street Primary. We are raising the concerns expressed by our parent body. **Q. To what extent are you in favour of the Edinburgh LEZ as proposed?** Somewhat oppose **Q. To what extent are you in favour of the boundary for the LEZ in Edinburgh as proposed?** Somewhat oppose **Q. With reference to the grace period, to what extent are you in favour of this approach which applies the grace period equally to residents, non-residents and all vehicle types?** Strongly oppose **Q. Which of the following best fits your views on the length of the grace period?** 2 years is too long a time period. The grace period acts like business as usual and will not have the impact needed now for local air quality. **Q. Overall, to what extent are you in favour of this local exemption approach?** Somewhat oppose. Unsure why historic vehicles are included in the exemptions list as they will be highly polluting and inefficient.	proposed, is deemed proportionate. • The Council is committed to improving public health in the context of a climate emergency and is empowered by the Scottish Government to implement an LEZ, to reduce harmful emissions from road traffic, where evidenced. The Council has undergone a rigorous appraisal process as detailed in the June 2021 report which approved the proposed city-centre LEZ for consultation.
Edinburgh Old Town Association	**Q. To what extent are you in favour of the Edinburgh LEZ as proposed?** Somewhat in favour **Q. To what extent are you in favour of the boundary for the LEZ in Edinburgh as proposed?**	• The Council notes support for LEZ and main scheme elements.

	Somewhat in favour **Q. With reference to the grace period, to what extent are you in favour of this approach which applies the grace period equally to residents, non-residents and all vehicle types?** Strongly in favour **Q. Which of the following best fits your views on the length of the grace period?** 2 years is about right and should be sufficient time **Q. Overall, to what extent are you in favour of this local exemption approach?** Strongly in favour	
Davidson's Mains Primary School Parent Council	**To what extent are you in favour of the Edinburgh LEZ as proposed?** Somewhat oppose. Our group would strongly support the introduction of a city-wide LEZ. As a school based in the north-west of Edinburgh, with a catchment area bounded to the south by Queensferry Road, we are very vulnerable to the pollution effects from motor vehicles. This limited proposal does nothing to reduce pollution in our area, whereas a city-wide LEZ would offer benefits to all schools and communities, in particular those with greater levels of deprivation, which are already burdened disproportionately by ill health, road violence and other issues. Given the urgency of the climate emergency, we need bold action from CEC, not this half measure. **Q. To what extent are you in favour of the boundary for the LEZ in Edinburgh as proposed?** Strongly oppose. This draws the LEZ far too narrowly - it needs to cover the entire city. **Q. With reference to the grace period, to what extent are you in favour of this approach which applies the grace period equally to**	• The Council notes support for local exemption approach. • Boundary Size – The city centre LEZ boundary was selected as preferred option, based on its efficacy to tackle air quality where negative impacts are greatest. An extended urban LEZ boundary was excluded during the appraisal of options (see June 2021 report). Air quality modelling undertaken by SEPA on the potential effects of the LEZ indicate that air quality will improve across the whole city • Grace period - Covid-19 and economic recovery impacts are considered alongside negative damage costs to public health associated with not implementing the

	residents, non-residents and all vehicle types? Neither/don't know **Q. Which of the following best fits your views on the length of the grace period?** 2 years is too long a time period. There may be arguments in favour of certain business users (for example) being required to comply earlier - users of larger goods vehicles for example. These users would also be better able to make change more quickly. Normally equity is to be preferred, but with the pressures imposed by the climate emergency we may need to force the rate of progress with measures such as these. **Q. Overall, to what extent are you in favour of this local exemption approach?** Strongly in favour.	LEZ in a timely manner. Appraisal sought balance between impacts and concluded that the grace period and no local exemption approaches, as well as the grace period length, as proposed, is deemed proportionate.
Tollcross Primary School Parent Council	**Q. To what extent are you in favour of the Edinburgh LEZ as proposed?** Strongly oppose. We support the key aims of LEZs - the improvement of air quality and protection of public health. However, we are concerned that the proposed LEZ is not big enough and will concentrate polluting vehicles in densely populated areas. In particular, we are concerned about the impact of the proposed boundary on air pollution levels around Tollcross Primary School and Preston Street Primary School. If the proposed LEZ goes ahead, we would welcome assurances that air pollution levels around schools and in playgrounds will be monitored closely before and after its introduction, and that early consideration be given to expansion of the zone. This monitoring should take account of pollution levels at child heights and the results should be shared with the school and parent council. We would also like to see mitigating measures introduced around schools	• Boundary Size – The city centre LEZ boundary was selected as preferred option, based on its efficacy to tackle air quality where negative impacts are greatest. An extended urban LEZ boundary was excluded during the appraisal of options (see June 2021 report). Air quality modelling undertaken by SEPA on the potential effects of the LEZ indicate that air quality will improve across the whole city • Displacement/Network Management Strategy - the Council is developing to address potential impacts. It will identify specific mitigation measures around the boundary, monitor impacts and include a complementary signage and

	impacted by the LEZ in the form of traffic calming measures, widened pavements and improved pedestrian and active travel infrastructure. **Q. To what extent are you in favour of the boundary for the LEZ in Edinburgh as proposed?** Strongly oppose. [Same answer given as above] **Q. With reference to the grace period, to what extent are you in favour of this approach which applies the grace period equally to residents, non-residents and all vehicle types?** Neither/don't know **Q. Which of the following best fits your views on the length of the grace period?** Don't know enough to say **Q. Overall, to what extent are you in favour of this local exemption approach?** Neither/don't know	communications strategy. • Air quality and traffic monitoring will be carried out at key locations on the LEZ boundary, including outside schools. • A LEZ annual progress report is required by the regulations, on the operation and effectiveness of the scheme. This will be informed by a robust monitoring regime in terms of the Network Management Strategy which may cover public transport journey times, traffic surveys and public opinion surveys as well as the Council's well established air quality monitoring network. • Further communications and engagement will be undertaken to share the Council's evidence-led decision making and the benefits of improving air quality in general.
Spokes	Spokes is supportive in principle of the City of Edinburgh Council introducing a Low Emissions Zone (LEZ). Levels of air pollution across Edinburgh are too high and need to be addressed urgently, particularly for the health of the most vulnerablein society such as children, elderly people, disabled people and people who have long-term respiratory conditions like asthma. The urgency to address air pollution is heightened due to the fact that Scotland is in the midst of a respiratory pandemic, as well as in a global climate crisis. There has been a legal responsibility to meet the minimum safe levels of air pollution since 2010 - eleven years later we are still seeing dangerous levels of particulate matter across designated Air Quality ManagementAreas (AQMAs) around the city.	• Grace period - Covid-19 and economic recovery impacts are considered alongside negative damage costs to public health associated with not implementing the LEZ in a timely manner. Appraisal sought balance between impacts and concluded that the grace period and no local exemption approaches, as well as the grace period length, as proposed, is deemed proportionate. • Boundary Size – The city centre LEZ boundary was selected as preferred

	However, despite our support of a LEZ in principle, we must object to the current consulted-on proposals. We have a range of concerns about the LEZ as planned. • The sunset period is too long - drivers won't be fined at all until 2024 - fourteen years after legal compliance should have been met for air quality levels. • Restrictions are not ambitious enough - the LEZ will only apply within the city centre, which covers a tiny percentage of the overall 1 https://consultationhub.edinburgh.gov.uk/sfc/low-emission-zone/ city. Living Streets Edinburgh has calculated this area to be approximately 2.5% of the city. Other areas of the city with AQMAs will be unlikely to see any benefit to air quality. Of the six declared AQMAs, only the City Centre will be tackled with these proposals. This is grossly unfair to people living in and around the St Johns Road, Great Junction Street, Glasgow Road, Inverleith Row and Salamander Street AQMAs, as well as other communities that face regular air quality issues. • The proposed boundary runs the danger of increasing air pollution levels and generating more traffic along the peripheral roads as vehicles attempt to avoid the LEZ. We note from the June 2021 TEC report on the LEZ that the council officers state non-compliant vehicles are likely to do this, resulting in reduced air quality on the boundary streets. The fact that the area is small will make traffic displacement more likely, as the diversion distances are likely to be relatively small. • We have concerns about implementation of the LEZ. We understand that ANPR will be used to enforce compliance along key thoroughfares, of which 16 access points will be addressed. However, the remaining 32 entry points are planned to be enforced by a single mobile unit. This seems woefully inadequate and is unlikely to deter non- compliant vehicles from accessing the city centre via non-arterial routes. This proposed enforcement strategy could ultimately increase	option, based on its efficacy to tackle air quality where negative impacts are greatest. An extended urban LEZ boundary was excluded during the appraisal of options (see June 2021 report). Air quality modelling undertaken by SEPA on the potential effects of the LEZ indicate that air quality will improve across the whole city • Displacement/Network Management Strategy - the Council is developing to address potential impacts. It will identify specific mitigation measures around the boundary, monitor impacts and include a complementary signage and communications strategy. • Enforcement – the Council is progressing a enforcement regime which covers the main entry/exit points with fixed ANPR cameras with support of mobile unit(s) as outlined in the enforcement strategy (see June 2021 report). The strategy provides an effective deterrent, reduces revenue costs, street clutter and is flexible to future changes.

	rat running on these routes and do little to curb levels of pollution once non-compliant drivers areaware of the “loophole streets”. We regret the general lack of ambition with these LEZ proposals as a whole. An Edinburgh LEZ is a brilliant opportunity to knit together a range of policy objectives and transport-related behaviour change outcomes, but these proposals feel inadequate when looking at the potential benefits an LEZ could offer. CEC should be aiming for much more than simply achieving legal compliance on levels of NO2 within the city centre AQMA only, and using theLEZ as an opportunity to tackle other types of particulate matter such as PM10, carbon emissions and vehicular domination across the entire city. These aims could be much better achieved with a city-wide LEZ, covering the fullboundary of the local authority area	
Paths for All	We welcome the opportunity to make a submission to this consultation. Our comments are limited to those aspects that havedirect relevance to the work and objectives of Paths for All. We are not able to give detailed comments. We support LEZs in Scotland to improve air quality and contribute to healthy and thriving cities and towns. This supports theGovernment intention to make our towns and cities friendlier and safer places for walking, wheeling, and cycling. Air pollution quite clearly continues to contribute to the early deaths of many people in Scotland. Some of the most vulnerable people (living in poverty and people with disabilities) are affected more by pollution – it makes our society lessequal. LEZs have been shown to be the most effective method of improving air quality quickly. They should be introduced alongsidemeasures to support modal shift away from the car to walking, cycling, and public transport. LEZs should benefit the environment hugely - delivering cleaner air, that will benefit our health. Cleaner air will also benefitthe natural environment. LEZs also have the potential to deliver carbon reductions.	• Boundary Size – The city centre LEZ boundary was selected as preferred option, based on its efficacy to tackle air quality where negative impacts are greatest. An extended urban LEZ boundary was excluded during the appraisal of options (see June 2021 report). Air quality modelling undertaken by SEPA on the potential effects of the LEZ indicate that air quality will improve across the whole city • Embedded within the City Mobility Plan, Edinburgh’s LEZ seeks to maximise opportunities to improve public realm, encourage active travel and promote modal shift to sustainable transport. Notably, the funds to implement Edinburgh’s LEZ are provided by Scottish Government/Transport Scotland and

	There is a risk that if LEZs are too small they will simply encourage polluting vehicles to operate outside the LEZ pushing upthe levels of pollution in different areas that have not experienced it before. LEZs should be introduced alongside measures enabling modal shift away from the private car to walking, wheeling, cycling,and public transport. Bus travel is declining in Scotland and reversing this will be key to reducing car use. Most trips by bus also involve walking sothis is important in terms of active travel and health and wellbeing. There should be a concerted effort to enable more use ofbuses. Generally, we must make it easier for people to walk in their communities and make it harder to use a car in our urban areas. Urban Design Frameworks should favour the pedestrian rather than the car. Urban realm improvements should be aimed atreducing car use, not encouraging it. Benefits • Reduced costs due to air pollution through days lost at work and NHS. • Reduced physical inactivity and associated costs. • Better places for people to live and work and associated economic benefits We must allocate road space to modes of transport that are more space efficient and less polluting – i.e., walking, wheeling,cycling, and public transport. Poor air quality along with poorly maintained public footways/pavements can be a barrier to people adopting active travel. We support an emphasis on greater use of public transport, green infrastructure, walking, wheeling, and cycling in tackling airpollution. As well as being a part of the solution, walking, wheeling, and cycling become more pleasant and therefore more likely to be adopted as air quality improves – creating a “virtuous circle”.	do not cover other sustainable transport schemes.

	Improving air quality can play a part in creating better quality walking, wheeling, and cycling environments throughout Scotland – and so will support delivery of the Scottish Government's Active Scotland Outcomes Framework, National WalkingStrategy, The Cycling Action Plan for Scotland, and the Long-term Vision for Active Travel in Scotland. Our interest in air quality and low emissions is as they relate to walking and promoting walking. Our main objective is to increase the number of people walking for the health benefits, but also there is an environmental benefit as well from peoplemoving to walking from driving etc. The impact of air quality on health is often underestimated. Improved air quality is a good example of preventative spend – with the health benefits accruing over time. **Paths for All** Paths for All is a Scottish charity founded in 1996. We champion everyday walking as the way to a happier, healthier Scotland.We want to get Scotland walking: everyone, everyday, everywhere. Our aim is to significantly increase the number of people who choose to walk in Scotland - whether that's for leisure or walking to work, school, the shops or to a nearby public transport hub. We want to create a happier, healthier Scotland whereincreased physical activity improves quality of life and wellbeing for all. We work to develop more opportunities and better environments not just for walking, but also for cycling and other activities, to help make Scotland a more active, more prosperous, greener country. Our work supports the delivery of the Scottish Government's Active Scotland Outcomes Framework, National Walking Strategy, The Cycling Action Plan for Scotland and the Long-term Vision for Active Travel in Scotland, community and workplace health walking, path network development and active travel policy development. We are a partnership organisation with 30 national partners. Our funders include the Scottish Government, Transport Scotland, NatureScot, andThe Life Changes Trust.	

	Smarter Choices, Smarter Places The Smarter Choices, Smarter Places (SCSP) Programme is Paths for All's grant scheme to support behaviour change initiatives to increase active and sustainable travel. The programme is funded through Transport Scotland and aims to makewalking and cycling the modes of choice for short local trips and encourage sustainable travel choices for longer journeys. We are happy for our comments to be made publicly available and would be pleased to provide further information if thatwould be of help.	
RAC Motoring Services	**Q. To what extent are you in favour of the Edinburgh LEZ as proposed?** Somewhat in favour **Q. To what extent are you in favour of the boundary for the LEZ in Edinburgh as proposed?** Somewhat in favour **Q. With reference to the grace period, to what extent are you in favour of this approach which applies the grace period equally to residents, non-residents and all vehicle types?** Strongly in favour **Q. Which of the following best fits your views on the length of the grace period?** 2 years is about right and should be sufficient time **Q. Overall, to what extent are you in favour of this local exemption approach?** Strongly in favour **Q. Are there any other groups of people or type of vehicle you think should be exempt from the LEZ? Which and why?**	• The Council notes support for LEZ and main scheme elements. • The Council actively encourages uptake of the Scottish Government's LEZ Support Funds available to eligible low income households and microbusinesses/sole traders located within 20km (12 miles) of Scotland's LEZs. LEZ funds are available in parts of Fife and have been advertised widely by the Council during and beyond the 2021 consultation period; • The Council notes concerns around the compliance of roadside recovery vehicles. Communication & Engagement will continue in the run-up to LEZ enforcement, with key stakeholders (including vehicle recovery businesses)

	Roadside recovery vehicles. As a responsible business we have taken steps to ensure that as many as possible of the RAC's fleet entering the LEZs will be Euro VI compliant. However, we are concerned that a number of recovery vehicles operated by accredited third-party recovery organisations, often small businesses will be adversely impacted by the restrictions to be imposed on older vehicles. Recovery vehicles are generally much larger and are called upon sometimes when an RAC patrol van is not available or is unable to tow a broken-down or accident-damaged vehicle. Recovery vehicles play a crucial role in keeping Edinburgh's busy routes clear. We work closely with our contractor partners who help us to ensure our members' vehicles are repaired or removed as quickly as possible. Many of these contractor partners also work with our major competitors. Recovery vehicles are specialist in nature and very expensive, many costing well in excess of £100,000 and operators will utilise them for many years (often 10 years or more) in order to pay back their high cost. Consequently, there is a disproportionate number of non-compliant older recovery vehicles in use across Scotland. The latest data we have from our contractor partners working in and around Edinburgh as of September 2020 shows that only 25% of recovery vehicles are Euro VI compliant. While many of our contractor partners plan to increase the numbers of compliant vehicles, the costs required to replace large recovery vehicles will make this unachievable in a short period of time. We are asking you to consider carefully the implications this may have on road safety and air quality in Edinburgh: • If there are fewer recovery vehicles operating, this may leave broken-down vehicles stranded on roads in Edinburgh in dangerous situations, increasing the likelihood of road traffic collisions. If operators choose not to operate given the prohibitive nature of the Zone and the resulting PCNs, we may be no longer able to guarantee drivers roadside rescue and recovery in a timely manner. This will cause high levels of distress among drivers and we are hugely concerned by the road safety implications. • Stranded vehicles impact upon traffic flow, causing congestion. Congested roads and stop-start traffic, with idling vehicles will	

	increase emissions. We support the Scottish Government and Edinburgh's intention to reduce emissions in its urban areas but we are concerned that restricting older recovery vehicles will be counter-productive and have the opposite effect on overall emissions to that intended.	
Living Streets	Living Streets Edinburgh Group (LSEG) welcomes the Council's plans to move forward with introducing a Low Emissions Zone (LEZ) in Edinburgh but we are concerned that the current proposals are not sufficiently ambitious and will have a seriousdetrimental impact for some residents, particularly those that live outside the boundaries of the currently proposed City Centre LEZ. **We strongly believe that the boundaries of the LEZ should be increased in order to benefit a larger proportion of the residents of Edinburgh.** The area of the proposed LEZ currently covers only 2.5% of the City and excludes many areas of the City with the greatest density of residents. It will also not include the designated Town Centres, which form such an important element in the development of 20-minute neighbourhoods outlined in the recently approved City Mobility Plan. In setting the boundaries ofthe LEZ, more consideration has been given to providing convenient diversionary routes for non-compliant vehicles than maximising the health benefits for people living in Edinburgh. Pollution levels have been considered on an absolute basis without any consideration of the number of people that will be exposed to that pollution. LSEG is particularly concerned that there is no recognition of the risks to pedestrians from vehicular emissions in areas outside of the proposed LEZ; some of which have very high levels of walking including children walking to school. The Council report that was considered by the Transport and Environment Committee at their June 2021 meeting states non-compliant vehicles will increasingly use the roads immediately outside the LEZ resulting in increased pollution on these routes. The SEPA forecast attached to the report shows an increase in atmospheric pollution on Queen Street, London Street and Abbeyhill; all areas on the edge of the currently proposed LEZ. We note that the Council has included an objective to "minimise the impact from traffic displacement across network, related to LEZ scheme". No detail is provided on the	• Boundary Size – The city centre LEZ boundary was selected as preferred option, based on its efficacy to tackle air quality where negative impacts are greatest. An extended urban LEZ boundary was excluded during the appraisal of options (see June 2021 report). Air quality modelling undertaken by SEPA on the potential effects of the LEZ indicate that air quality will improve across the whole city • Displacement/Network Management Strategy - the Council is developing to address potential impacts. It will identify specific mitigation measures around the boundary, monitor impacts and include a complementary signage and communications strategy. • Enforcement – the Council is progressing a enforcement regime which covers the main entry/exit points with fixed ANPR cameras with support of mobile unit(s) as outlined in the enforcement strategy (see June 2021 report). The strategy provides an effective deterrent, reduces revenue costs, street clutter and is flexible to future changes.

	mitigating actions that will be taken or how achievement of this objective will be measured. Before any final decision is takenon introducing a LEZ it is critical that there are clear plans in place to limit the negative impact of displaced traffic to reassureresidents living near the LEZ. The current plans are focussed on reducing levels NOx pollution from vehicles within a small part of the City to meet currentlegislative limits. In our view, this goal does not go far enough. Other forms and sources of pollution need to be both more closely monitored and reduced, in particular the levels of particulate pollution and continued use of temporary diesel generators within the LEZ. We would like to see the Council setting more ambitious and wide ranging targets for reducing pollution given the accepted health benefits of such a reduction. **This is the time for bold action that supports the Council's plans to encourage walking, wheeling and cycling across the City.** Despite the title of a 'low emission zone', the proposals do not address the need to reduce carbon dioxide emissions. Plansthat only address pollution are essentially backward looking, whereas we should be looking forward to a future where fossil-fuel vehicles are completely eliminated and levels of all motor traffic are reduced. Finally, while we recognise that the plan includes proposals to encourage compliance with the new restrictions for vehiclesentering the LEZ, it is critical that enforcement is rigorously applied. There have been too many Council transport-related initiatives (e.g. 20mph speed limits, parking and loading restrictions, prohibition of idling stationary vehicles) that have foundered due to lack of effective enforcement. In the case of idling vehicles, it would be clearly wrong to turn a blind eye to such behaviour while at the same time introducing the significant controls required by the LEZ. Finally, we note that the enforcement regime will be based on the use of automatic number plate recognition (ANPR) cameras. From our review of Appendix 7 of the report presented to the 17 June 2021 Transport and Environment Committee meeting, we note that the recommended approach isto install these cameras on only 16 routes of the identified 48 entry points to the City centre LEZ. **One mobile unit will coverthe other 32 entry routes.** Given that the LEZ is intended to operate 24/7, we are concerned that this approach will affect the levels of compliance required for the LEZ to achieve the intended reduction in	

	atmospheric pollution and health benefits for those living and working within the City centre. We are further concerned that this approach will encourage the drivers of non-compliant vehicles to use the non-arterial routes to avoid detection thus increasing traffic further in the many residential streets bounding the proposed LEZ. We believe that to achieve the required compliance for the success of the LEZ, it is critical that enforcement is rigorously applied. There have been too many Council transport-related initiatives (e.g. 20mph speed limits, parking and loading restrictions, prohibition of idling stationary vehicles) that have foundered due to lack of effective enforcement. We do not believe that the currently proposed arrangements are adequate.	

City of Edinburgh Council

Low Emissions Zone (LEZ) Consultation 2021

Summary of findings

Prepared for:
City of Edinburgh Council
Waverley Court
4 East Market Street
Edinburgh
EH8 8BG

September 2021

Table of contents

Executive summary

- The City of Edinburgh Council ran a consultation from 28th June to 20th September 2021 regarding the proposed Edinburgh Low Emission Zone (LEZ).
- Self-completion survey: responses = 4,976 online from individuals, 75 online, 22 email from organisations. Findings summarised by Scott Porter Research.

Respondent demographics and modes of travel

- Demographics of main online survey show a tendency towards an older, and a more male audience with 60% over 45 years old, and 60% male.
- The car was the most used mode of transport overall and second most frequently used after walking.

Support for the LEZ overall

- Mixed views overall, but whilst 48% were strongly/somewhat in favour and 48% strongly/somewhat opposed, largest response was 'strongly oppose' at 34%.
- Strong opposition especially notable for businesses within the LEZ (56%) and who access it (57%).
- Reasons for opposition led by implications for those affected: financial for individuals, especially low income households and workers; detrimental impact for businesses and perceived reduction in people using city centre; insufficient public transport and electric vehicle infrastructure.

Support for the boundary

- More opposed than in favour: 52% strongly/somewhat opposed versus 40% strongly/somewhat in favour.
- Most opposition related to concerns for increased congestion, longer journeys and more pollution at the boundary/in other areas; as well as impact on North/ South, East/West routes (alternative routes, increase congestion/pollution).

Support for the approach to a single grace period of 2 years

- 54% strongly/somewhat in favour and 35% strongly/somewhat opposed. However only 24% felt 2 years was right, 43% too short, 23% too long.

Awareness of support grants

- Awareness low: 28% aware of support grants for small businesses and low-income households; 23% aware of other sustainable travel grants/loans.

Support for the exemptions approach

- 58% strongly/somewhat in favour, 23% strongly/somewhat opposed, but should be noted only 44% of businesses in favour.

Adapting to the LEZ – action taken

- 24% said vehicle would comply, so no action needed.
- Multiple actions noted, none more than 20%. Most frequently mentioned: 19% change route; 18% use more public transport; 15% walk more; 13% upgrade vehicle; 13% cycle more.

Views of Organisations

- Organisations views generally reflect mixed nature of findings, with more specific comment about the effects on businesses, mostly detrimental; and also imperative need to affect change to reduce pollution/help the environment.

1. Background to this report

1.1 The consultation and Scott Porter's role

The City of Edinburgh Council (the Council) has completed a consultation exercise to understand views on its proposal for the city's Low Emission Zone (LEZ). There was a need to analyse the consultation findings and Scott Porter Research & Marketing Ltd were asked to conduct this work as a fully independent market research agency.

1.2 Data included within analysis

The data analysed was taken from an online survey which generated 4,976 responses and also from responses from representatives of organisations, 75 online and 20 by email. The survey was designed by the Council with assistance from Scott Porter. The Council then scripted and hosted the online survey, which was live from 28th June until 20th September 2021.

1.3 Analysis process and data protection

The data processing and analysis for the online survey was as follows:

- the analysis requirements were discussed at a briefing meeting between the Council and Scott Porter, and the anonymised raw data was compiled into 4 datasets across the period of the consultation and sent by secure means to Scott Porter
- data processing included quality and sense checks to review where possible if there were duplicate responses and assess how many surveys were complete
- the data was cleaned and checked and final sample size determined, data tables run and an initial set reviewed prior to full analysis, with further data mining and cross tabulation completed as determined by the results
- the online data from the 75 organisation representatives was analysed separately and the qualitative responses from 22 emails were also reviewed for their content, summarised and both were then added to the analysis in a separate section of the report.

The analysis for all included a review of respondents' levels of support for, views of and knowledge of: the LEZ proposal overall; the boundary as described; the grace period; support grants; exemptions; and actions that might be taken as a result of the LEZ.

In terms of data protection, Scott Porter abides by the Market Research Society Code of Conduct and Data Protection/GDPR rules. All data was screened and passed on to Scott Porter by the Council in a format that complies with GDPR and Council policies. The online survey included personal data, but this was anonymised by the Council prior to analysis, with name, organisation and email being removed. This ensured the dataset for analysis had no identifiable personal data (i.e. responses such as age, gender, physical/mental health could not be traced back to an individual).

2. Authors' thoughts

2.1 Thoughts on the findings

Reviewing the data it can be seen that, not surprisingly, responses reflect the respondent's own situation and their views on environmental issues. Aligned to this is the fact that self-completion formats, such as an online survey, used for public consultation tend to be completed by those with an interest, or those who want to get their views across. This is likely to mean that those who have reviewed the LEZ and are happy with it will not have felt the need to comment and therefore not completed the survey. This can, of course, colour the tone of comments and must be taken into account when interpreting findings.

In terms of the respondents for the consultation there was a wide mix of audiences: the general public, to businesses and other organisations who took time to make submissions. They included those living in Edinburgh and also the surrounding areas; and a good mix of demographics, although the online sample has a more male and an older age group (40 years plus) bias. Across the sample there were also multiple modes of private and public transport used.

All of the above suggests that the data from the consultation can be taken as a robust view of different sample groups in and around Edinburgh (with the associated caveats about self-completion methods already mentioned).

Support for the LEZ and its details is very mixed, but this appears to have less to do with the principle of being able to breathe better air, and more to do with the practical implications for people within and also travelling to the zone, as well as the specific practical details of the proposal.

It would be remiss not to note that the covid-19 pandemic has, of course, had an impact on views, especially with regards to the financial situation of both individuals and businesses and the potential ability now, or in the near future to upgrade vehicles and also the need to preserve cash flow and jobs. Interestingly there is also mention of some reluctance to use public transport due to the perceived risk. All of this could perhaps explain a concentration of views on the financial implications for individuals and businesses and suggest people may be 'protective' of their situation and reluctant to have more change 'forced' on them whilst only now coming out of the massive upheaval of the past 18 months. Perhaps also for some the pandemic has left them feeling even more reliant on their vehicles, to feel safer or to be sure they can earn their living.

All in all, the main thoughts that need to be considered and reviewed in moving forward with the LEZ proposal relate to the following:

Support for the LEZ overall

- Overall there are two main areas of concern – the financial implications and the implications for the edge of the zone (see Boundary).
- The financial implications are a major worry for many who do not support the LEZ, and it is primarily seen as discriminatory to low income households, but also to those who cannot afford to upgrade at this point in time. This is likewise the case for businesses, but also for city centre businesses is the danger people do not visit the city and trade is lost as a result.
- Of note are the comments regarding the infrastructure for electric vehicle charging and the cost of the vehicles themselves (more than in 2019), with

questions raised about how charging points will be provided within a city of many flat dwellers and what purchase incentives there may be.
- Further to this are numerous mentions of addressing other issues across the city which it is felt would bring down congestion and therefore pollution levels. These specifically include Spaces for People and to a lesser extent the 20mph programme. Perhaps linked to this are a similar number of mentions of distrust and disillusionment with the Council.

Support for the boundary
- Issues pertaining to the 'edges' of the boundary were another paramount area of concern for people, with many of the view that the LEZ will simply displace both vehicles and pollution to other, mostly residential areas of the city, therefore causing congestion there, as well as parking issues and so on.
- Comments on the boundary itself concentrate on these more overall thoughts, with specifics more likely to relate to an individual's local area. However of note are the questions raised relating to other much polluted areas/roads (such as St John's Road), asking how they specifically can be addressed, especially as many lie outwith the confines of the proposed boundary.

Grace period approach
- Given the comments about financial implications it is perhaps not surprising that the grace period of 2 years is too short for many, especially businesses.
- Interestingly here when reviewing comments it can be seen that a proportion relate this back to the process starting in 2019 or earlier, whilst some see this consultation as the first time they have heard about the LEZ. This perception, of course will also have an impact on how this period is viewed.

Exemptions approach
- Exemptions cause less comment, most accepting, or not stating others. Of those who do state an additional exemption it can be seen that most thoughts go to broad brush groups – either all (those who simply do not want a LEZ), or city centre residents, or all trades and delivery vans.

Awareness of support grants
- Awareness of support grants and loans is generally low (23%-28%) and this would need to be addressed within any future LEZ communication campaign.

Adapting to the LEZ
- The interesting aspect of the responses to this question is the number of different options given (the largest of which was mentioned by 20%) and the feeling within the comments that many are simply unsure what they can do to enable them to use their vehicles within the LEZ. There is a definite feeling of resignation for some, but also worry for others, especially residents, as to how they can 'solve the problem' of complying given their current situation.
- This perhaps reflects that, unlike 2019 where 'use more public transport' received most mention (30%), in 2021 the most mention is for 'change my route' (19%), suggesting perhaps they wish to keep using their vehicles more than they wish to keep travelling through the zone.

Organisations
- The thoughts from the businesses within the organisations sample were generally in line with the main sample, suggesting consistent concerns are apparent. However, of course, when reviewing the thoughts of the other organisations with vested interests in the environment or other modes of transport their specific views become clear with more comment about widening the LEZ and implementing the full scheme faster. Of interest are the thoughts from the neighbouring councils who ask that the implication of the LEZ for all sides be reviewed and considered.

2.2 Thoughts on the consultation process

In terms of the consultation process, and looking to future consultations the authors would suggest that the experience for the respondent and the quality of the data could be enhanced by:

- setting specific objectives for what the consultation needs to achieve, both for the Council and for the respondent to allow them to understand what they are being asked, why the consultation is being done and what their views may affect
- within this to review the terminology used for such an exercise – what does 'consultation' mean – and ensuring the introduction to the exercise states this clearly so those who take part understand and are sure what their comments may, or may not affect
- allowing sufficient time prior to the start of the consultation to fully explore the design of the questionnaire in terms of the content in the light of the desired objectives and also building in time to check any online scripts for their flow and accuracy
- considering also within this how each respondent group is best approached for comment, looking at the more appropriate format – either via online survey or another means (and also whether different online surveys are needed for different audiences)
- planning the dissemination of the consultation to allow all audiences a similar time frame for response – and to build in responses to show these audiences and allow for their analysis
- building in sufficient time for analysis to allow review of all aspects of the findings.

3. Main findings

This section of the report details the main findings from the consultation. It starts with the background of those who took part and then reviews the main areas as detailed in the online survey:

- the LEZ proposal overall
- the boundary as described in the survey
- the grace period
- support grants
- exemptions
- adapting to the LEZ – action taken as a result.

The tables for the main open-ended responses for the online survey can be found in a separate PDF document. A more inclusive table for Q6 can also be found in Appendix 1, including responses that only achieved between 0% and 3% each.

The following definitions should be noted when reviewing findings:

- '0%' shows something is mentioned, but by insufficient numbers to reach 1% of the pertinent sample
- '-' indicates that no one gave this response
- 'other' refers to responses not of specific note – often individual mentions
- figures are rounded up to the next percentage, i.e. when x.5% and above
- 'dk' indicates a 'don't know' response
- 'nfs' is a generic response that has been 'not further specified'.

3.1 Respondent background

The first section of the report highlights those who took part in the consultation.

3.1.1 Resident status

A total of 4,976 respondents completed the online survey. Of these the vast majority, 86%, live in Edinburgh (38% city centre residents, 48% live in another part of Edinburgh). 45% said that they worked in the city centre and 64% visited for leisure, 8% (408) said they own a business within the city centre and 4% study in the city centre (Table 1).

Table 1: Resident / Work / Leisure

	Total n=4,976
Live in Edinburgh city centre	38%
Live in another part of Edinburgh	48%
Live outside of Edinburgh	14%
Work in city centre	45%
Operate business/organisation located in city centre	8%
Study in city centre	4%
Visit city centre for leisure/shopping/etc	64%
None of the above	10%
Not answered	0%

Source: Q1. & Q2. Which of the following best describes you?

3.1.2 Demographics

The demographics of the online survey respondents show:

- an older audience (Q19 Age):
  - 36% under 45 years old (under 25: 3%, 25-34: 14%, 35-44: 19%)
  - 60% and over 45 years (45-54: 22%, 55-64: 21%, 65+: 17%)
  - 3% prefer not to say / 0% not stated.

- more male than female respondents (Q20 Gender):
  - 60% male
  - 33% female
  - 0% other gender identity
  - 6% prefer not to say / 0% not stated.

- 12% said they had a physical or mental health condition or illness lasting or expected to last 12 months or more that limits their daily activities (Q21), 79% did not, 8% prefer not to say, 0% not stated
  - of those who stated yes (604) 17% were Blue Badge holders (Q22) and 3% own a vehicle with adaptions for disabled users (Q23).

3.1.3 Use of transport and when travel in the city centre

Respondents were asked about their usual forms of transport to travel to, from or around the city centre. Firstly, looking overall at what is used it can be seen that the car, walking and buses lead the way, for all sample groups (Table 2).

Table 2: Modes of transport used to travel to, from or around the city centre

	Total n=4,976	LEZ resident n=561	Work in LEZ n=1,774	Visit LEZ for leisure n=3,703	Business in LEZ n=304	Business access LEZ n=470
Car	86%	84%	86%	86%	88%	90%
Walk	85%	93%	84%	87%	84%	78%
Bus or coach	71%	64%	68%	75%	60%	60%
Train	42%	49%	43%	44%	41%	38%
Taxi/private hire car	53%	56%	55%	55%	63%	56%
Tram	38%	40%	35%	41%	32%	31%
Bicycle or scooter	37%	36%	41%	39%	37%	33%
Light goods vehicle	6%	6%	7%	5%	12%	25%
Motorcycle or moped	4%	4%	5%	4%	5%	7%
Wheelchair (wheeling)	1%	1%	1%	1%	1%	1%
Heavy goods vehicle	1%	1%	1%	1%	2%	3%
Not stated	0%	0%	0%	0%	-	-

Source: Q3. Currently, how often do you use each of these forms of transport to travel to, from or around Edinburgh city centre – either for personal or business reasons?

Looking at this by the frequency the mode of transport is used (Table 3) shows some modes used more regularly than others. Not surprisingly LEZ residents say they walk every day most frequently at 72% followed by LEZ students 64%. This is compared to 44% of those who Work in the LEZ, 51% of those with a Business in the LEZ and 37% Businesses accessing the LEZ and also Visiting the LEZ for leisure. Use of cars every day is most frequent for LEZ Businesses 40% and Businesses who access it 35%, followed by those who live in the LEZ 30%, compared to 26% for those who work in the LEZ and 22% for those who Study there. Interestingly for the trams, the frequency is much lower, with only 11 people (0%) saying they use them every day, all of whom live outside the LEZ.

Table 3: Frequency of using modes of transport for city centre travel

Total n=4,976	*Never no access*	*Never by choice*	Less than once a month	At least once a month	At least once a week	Every day	Not stated
Car	*6%*	*4%*	12%	16%	38%	20%	4%
Walk	*6%*	*3%*	9%	12%	25%	39%	6%
Bus or coach	*5%*	*14%*	25%	22%	20%	3%	10%
Train	*25%*	*15%*	31%	8%	2%	0%	18%
Taxi/private hire car	*10%*	*22%*	34%	15%	4%	1%	15%
Tram	*23%*	*21%*	28%	7%	3%	0%	17%
Bicycle or scooter	*32%*	*13%*	8%	8%	15%	6%	18%
Light goods vehicle	*70%*	*3%*	2%	1%	2%	2%	20%
Motorcycle or moped	*68%*	*4%*	1%	1%	1%	1%	24%
Wheelchair (wheeling)	*64%*	*1%*	0%	0%	0%	0%	34%
Heavy goods vehicle	*76%*	*2%*	0%	0%	0%	0%	21%

Source: Q3. Currently, how often do you use each of these forms of transport to travel to, from or around Edinburgh city centre – either for personal or business reasons?

Respondents were asked when they usually travel to, from or around the city centre. Overall 41% said they travelled to, from or around the city centre 'Every day (Monday to Sunday)', 13% 'Weekdays only (Monday to Friday)', 6% 'Weekend only (Saturday and Sunday)' and 39% 'Other mix of days'.

Table 4: When normally travel to, from or around the city centre

	Total n=4,976	LEZ resident n=561	Work in LEZ n=1,774	Visit LEZ for leisure n=3,703	Business in LEZ n=304	Business access LEZ n=470
Every day (Mon-Sun)	41%	71%	54%	38%	66%	56%
Weekdays (Mon-Fri)	13%	6%	17%	10%	12%	16%
Weekends (Sat-Sun)	6%	3%	2%	8%	1%	1%
Other mix of days (nfs)	39%	19%	26%	44%	20%	26%
Not stated	0%	0%	0%	0%	0%	0%

Source: Q4. When do you normally travel to, from or around the city centre for personal and/or business reasons?

3.2 The Edinburgh Low Emission Zone (LEZ)

The online survey contained a link to the document '*Edinburgh's Proposal to make a Low Emission Zone*' which provided information on the LEZ (the full print version of the online survey can be seen in Appendix 2).

3.2.1 Levels of support for the Edinburgh LEZ

Based on the information given in the online survey respondents were asked to state the extent to which they were in favour of the proposal for the LEZ. Overall, 48% said they were in favour (strongly or somewhat) and 48% said they were opposed (strongly or somewhat). (Table 5)

Looking at the strength of opinion it can be seen however that the largest response was for 'strongly opposed' at 34%. This is especially notable for businesses, both located in the LEZ (56% 'strongly oppose') and those who access the LEZ (57% 'strongly oppose'). Likewise 42% of LEZ residents stated 'strongly oppose', as did 40% of those who Work in the LEZ. Overall it is the large numbers of Visitors to the LEZ that lower the overall figure as 31% of this groups were strongly opposed.

Demographically it can be seen that those over 35 are more likely to 'strongly oppose' than those under 35 years old, with 37% of the 45-54 age group stating 'strongly oppose'. Males are also more likely to 'strongly oppose' the LEZ, at 35% compared to Females at 27%.

Table 5: Levels of support for the Edinburgh LEZ

	Total n=4,976	LEZ resident n=561	Work in LEZ n=1,774	Visit LEZ for leisure n=3,703	Business in LEZ n=304	Business access LEZ n=470
Strongly in favour	27%	26%	25%	29%	15%	13%
Somewhat in favour	21%	18%	19%	23%	18%	13%
Neither/don't know	3%	2%	2%	3%	0%	2%
Somewhat opposed	14%	12%	14%	14%	10%	15%
Strongly opposed	34%	42%	40%	31%	56%	57%
Not stated	0%	0%	0%	0%	0%	-

Source: Q5. To what extent are you in favour of the Edinburgh LEZ as proposed?

3.2.2 Reasons why oppose the Edinburgh LEZ

Respondents who opposed the Edinburgh LEZ or who were unsure (neither/don't know) were asked to give reasons for their views and space to write in their responses. These have been distilled and the themes drawn together for analysis.

Of the 2,570 (52%) who did not support or were unsure of the LEZ, it can be seen that there are a myriad of reasons for not supporting the LEZ, many of which are very specific to the individual (Table 6 page 12 and Appendix 1).

However when reviewing the 19 reasons which receive most mentions, by 4% or more respondents (i.e. around 100+ mentions each) it is clear that the main concerns are the broader issues for those affected within the zone.

Following this are perceived issues for the areas on the boundary and further afield in Edinburgh, as well as views that congestion has other causes and that these need addressing, as well as questioning the Council's intentions with the scheme and whether a LEZ has sufficient proven benefits.

- *Implications/issues for those affected (61% of mentions)* – highlighting cost implications for all concerned and the viability of alternatives to use instead of cars:
  - discriminatory to low income households/workers (14%)
  - can't afford to upgrade vehicle/object to being put to the expense (13%)
  - detrimental to businesses based in LEZ (7%)
  - will stop people visiting/using the city/go elsewhere to shop (7%)
  - detrimental/discriminatory to residents (4%)
  - public transport insufficient/limited (8%)
  - electric vehicle charging point infrastructure not sufficient – build it up (5%)
  - need car, no alternative – work, leisure, appointments, help people (4%)

- *Implications as a result of the LEZ area (20%)* – concerns here about the congestion and pollution that will result in the areas around the boundary:
  - will move/cause congestion in surrounding streets/areas (9%)
  - will move/cause pollution in surrounding streets/areas (7%)
  - will cause longer journeys to avoid LEZ/more pollution (4%)

- *Other causes of congestion, and pollution (20%)* – views concern other issues within Edinburgh that are perceived to be a bigger cause of congestion and therefore pollution, mainly those to do with the flow of traffic through the city:
  - Spaces for People has caused issues/remove it (9%)
  - spend money on road maintenance/keeping traffic flowing (6%)
  - congestion is due to other issues (5%)

- *Perceptions of the Council (17%)* – views here lead to people being distrustful of the intentions behind the LEZ and the ability to implement it well:
  - money making scheme/stealth tax (8%)
  - dislike/distrust/issue with the Council (6%)
  - simply an anti-car policy (4%)

- *Views of the need for a LEZ (9%)* – some feel the benefits of a LEZ are not sufficiently proven, or have questions about this:
  - not needed – pollution levels not justified/proven/have no impact (5%)
  - scrapping usable cars is a waste/worse for environment (4%)

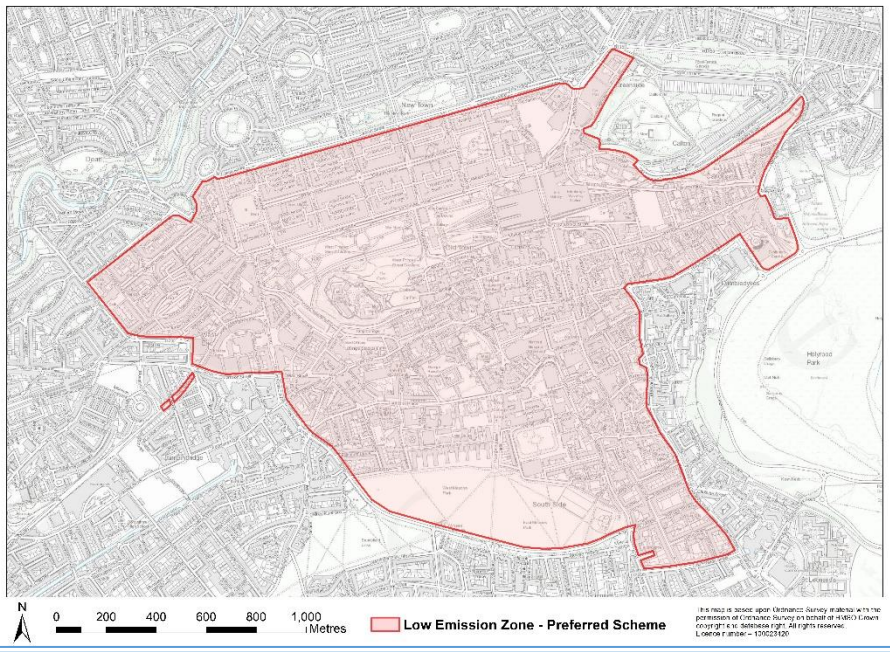
Table 6: Reasons for opposing the proposed Edinburgh LEZ

	Oppose & Neither/don't know n=2,570
Discriminatory to low income households/workers	14%
Can't afford to upgrade vehicle/object to being put to the expense	13%
Spaces for People has caused issues/remove it	9%
Will move/cause congestion in surrounding streets/areas	9%
Public transport insufficient/limited	8%
Money making scheme/stealth tax	8%
Will stop people visiting/using the city/go elsewhere to shop	7%
Will move/cause pollution in surrounding streets/areas	7%
Detrimental to businesses based in LEZ	7%
Dislike/distrust/issue with the Council	6%
Spend money on road maintenance/keeping traffic flowing	6%
Not needed – pollution levels not justified/proven/have no impact	5%
EV charging point infrastructure not sufficient – build it up	5%
Congestion is due to other issues	5%
Simply an anti-car policy	4%
Will cause longer journeys to avoid LEZ/more pollution	4%
Detrimental/discriminatory to residents	4%
Need car, no alternative, work, leisure, appointments, help people	4%
Scrapping usable cars is a waste/worse for environment	4%

Source: Q6. Why are you not in favour/unsure of the Edinburgh LEZ as proposed?
Full table of all responses in Appendix

3.3 LEZ Boundary

The online survey contained the information and visual shown below about the LEZ boundary as well as the information in the previously mentioned LEZ proposal link (see Appendix 2 for the full print version of the online survey).



The Scottish Environmental Protection Agency (SEPA) helped the Council model the air quality and traffic impacts of different boundary options. The primary aim in choosing the most suitable option, was to target air pollution in the worst areas. Another key consideration was to provide a logical and clearly sign-posted diversion for traffic wishing to avoid the Zone.

A road network management strategy will be developed alongside the LEZ to ensure traffic is managed around the boundary.

3.3.1 Levels of support for the Edinburgh LEZ boundary shown

Based on the information given in the online survey respondents were asked to state whether they were in favour of the boundary for the Edinburgh LEZ. Overall, 40% said they were in favour (strongly or somewhat) and 52% said they were opposed (strongly or somewhat). (Table 7 overleaf)

Looking again at the strength of opinion it can be seen that the largest response was for 'strongly opposed' at 37% and again this is especially notable for businesses at 61% 'strongly oppose' for both those located in the LEZ and who access the LEZ. Likewise 45% of LEZ residents stated 'strongly oppose', as did 44% of those who Work in the LEZ.

Demographically the same groups are more likely to oppose the boundary, with those over 35 more likely to 'strongly oppose' than those under 35 years old, with 40% of the 45-54 and 55-64 age groups stating 'strongly oppose'. Males are also more likely to 'strongly oppose' the LEZ, at 38% compared to Females at 31%.

Table 7: Levels of support for the Edinburgh LEZ boundary

	Total n=4,976	LEZ resident n=561	Work in LEZ n=1,774	Visit LEZ for leisure n=3,703	Business in LEZ n=304	Business access LEZ n=470
Strongly in favour	17%	18%	16%	19%	11%	9%
Somewhat in favour	23%	17%	21%	25%	16%	12%
Neither/don't know	7%	5%	5%	7%	3%	5%
Somewhat opposed	15%	14%	14%	15%	9%	13%
Strongly opposed	37%	45%	44%	33%	61%	61%
Not stated	0%	-	0%	0%	-	-

Source: Q7. To what extent are you in favour of the boundary for the LEZ in Edinburgh as proposed?

3.3.2 Reasons why do not agree with Edinburgh LEZ boundary

Respondents who opposed the Edinburgh LEZ boundary or who were unsure (neither/don't know) were asked to give their reasons and space to write in responses. These have been distilled and the themes drawn together for analysis.

Of the 2,936 who did not support the boundary, it can be seen in Table 8 overleaf that only 44% of the comments given were about the boundary specifically.

In terms of the boundary comments, there were many responses regarding different inclusions or exclusions near respondent's own specific locations.

However, by far the most frequent comments were those made relating to the concern of increased congestion and pollution in the streets around the boundary and across other roads as people find alternative routes to travel to avoid the LEZ. Linked to this were comments about routes North/South and East/West being affected by the LEZ and again the potential alternatives that would be used, causing longer journeys and more pollution:

- cause congestion elsewhere/other routes (12%)
- create longer journeys and more pollution (6%)
- East/West & North/South routes affected too much (4%)

Interestingly in terms of the LEZ's size around the same number overall felt it was either too big (7%) or too small (6%).

Table 8: Reasons for opposing the proposed Edinburgh LEZ boundary

	Oppose or Neither/don't know n=2,936
Mentions not specific to boundary	***56%***
Not in favour of LEZ/reasons why	*39%*
Not answered	*10%*
Comments about other things/other	*6%*
Don't know/not sure/no comment	*1%*
Mentions specific to boundary	**44%**
Cause congestion elsewhere/other routes	12%
Too big/should be smaller	7%
Create longer journeys and more pollution	6%
Too small/should be bigger	6%
East/West & North/South routes affected too much	4%
Should be the whole city/to the bypass/all or nothing	3%
Cause issues/parking problems on boundary	2%
Insufficient data/work done to know/justify	2%
More polluted streets elsewhere need it more	2%
Arbitrary/odd areas/random/don't see why	1%
Will just creep out once it starts!	1%
Car parks within area a bad idea (e.g. St James)	0%
Some areas not covered/covered well by public transport	0%
Why exclude AQMA zones?	0%
Focus on exit/entry points, Drumbrae/Queensferry/Maybury Rds	0%
Not residential areas (proposal includes these)	0%
Boundaries are mainly by residential areas	0%
Suggested additions/inclusions	
Include: Holyrood Park; all New Town/Stockbridge/to Ferry Rd; out to Leith/North; further south, e.g. Morningside/Grange/ Blackford; St John's Rd/Corstorphine	1% each
Include: Gorgie/Dalry; out to Haymarket; Queensferry Rd; Queen St; Randolph Crescent to Moray Place; Clerk St/East of Melville Drive; Scottish Parliament building; Dumbiedykes; Tollcross; Regent Terrace/London Rd/Easter Rd	0% each
Suggested reductions/exclusions	
Not Western Approach/Lothian Rd/Charlotte Sq/West End; Too much in the South/reduce this area; Only Princes St/George St/Queen St; Don't make boundary Preston St Primary School	1% each
Only include Old and New Town; Should be no access to St Andrew's House/Parliament/Council offices; Not around Holyrood Park; Not where NHS facilities are (e.g. Eye Pavilion); Not Melville Drive; Not Atholl Crescent/Canning St Lane; Not Newington; Need access to Waverley Station	0% each

Source: Q8. Why are you not in favour/unsure of the boundary as proposed?

3.3.3 Respondent status within the LEZ boundary as shown

Of the 4,976 respondents who completed the online survey 11% stated they lived within the LEZ boundary the vast majority (88%) therefore travel into the area. Indeed 74% said they visit the LEZ for leisure/shopping etc, whilst 36% work in the area and 15% said they operate a business located within the area or that requires access to it (Table 9).

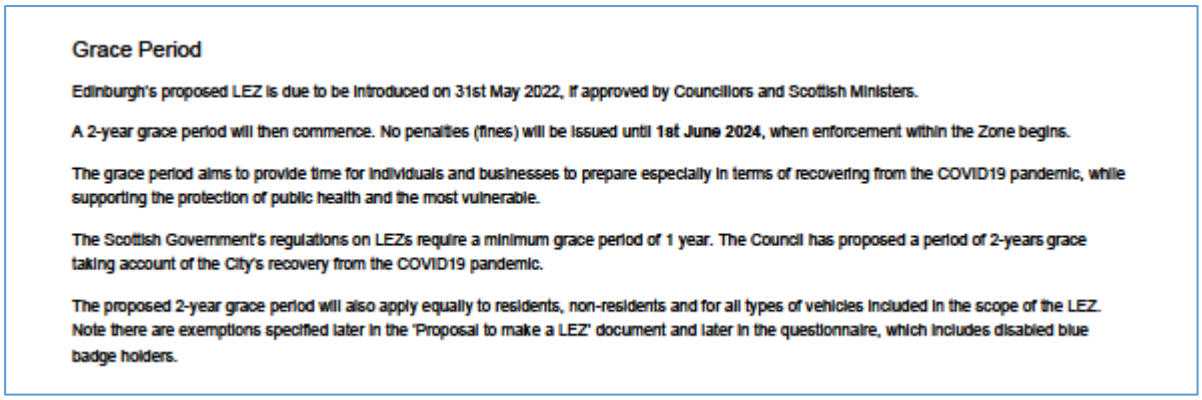
Table 9: Resident / Work / Leisure – status within proposed Edinburgh LEZ

	Total n=4,976
Live within proposed LEZ	11%
Live outside in proposed LEZ	88%
Not answered	1%
Operate business/org. located within proposed LEZ	6%
Operate business/org. that requires access to proposed LEZ	9%
Work within the proposed LEZ	36%
Study within the proposed LEZ	4%
Visit proposed LEZ for leisure/shopping/etc	74%
None of the above	7%
Not answered	0%

Source: Q9. & Q10. When you look at the boundary map as shown here, which of the following best describes you?

3.4 Grace Period

The online survey gave the following information regarding grace periods:



Grace Period

Edinburgh's proposed LEZ is due to be introduced on 31st May 2022, if approved by Councillors and Scottish Ministers.

A 2-year grace period will then commence. No penalties (fines) will be issued until **1st June 2024**, when enforcement within the Zone begins.

The grace period aims to provide time for individuals and businesses to prepare especially in terms of recovering from the COVID19 pandemic, while supporting the protection of public health and the most vulnerable.

The Scottish Government's regulations on LEZs require a minimum grace period of 1 year. The Council has proposed a period of 2-years grace taking account of the City's recovery from the COVID19 pandemic.

The proposed 2-year grace period will also apply equally to residents, non-residents and for all types of vehicles included in the scope of the LEZ. Note there are exemptions specified later in the 'Proposal to make a LEZ' document and later in the questionnaire, which includes disabled blue badge holders.

The survey asked to what extent respondents were in favour of the approach which applies the grace period equally to residents, non-residents and all vehicle types and findings show overall 54% were in favour to some extent and 35% opposed (Table 10).

Table 10: Levels of support for the grace period approach

	Total n=4,976	LEZ resident n=561	Work in LEZ n=1,774	Visit LEZ for leisure n=3,703	Business in LEZ n=304	Business access LEZ n=470
Strongly in favour	31%	26%	31%	31%	30%	30%
Somewhat in favour	23%	20%	21%	24%	18%	16%
Neither/don't know	12%	8%	11%	12%	15%	13%
Somewhat opposed	13%	13%	12%	13%	7%	10%
Strongly opposed	22%	32%	24%	20%	30%	30%
Not stated	1%	1%	0%	0%	1%	0%

Source: Q11. To what extent are you in favour of this approach which applies the grace period equally to residents, non-residents and all vehicle types?

The survey also asked respondents if they considered the grace period to be 'too short', 'about right', 'too long', or that they 'don't know'. Findings show only 24% feel the 2-year period is the right length, with 43% considering it too short and 23% too long. This is highlighted for businesses with 55% of those located in the LEZ saying 2 years is too short and 64% of those who need access to the LEZ. (Table 11)

Table 11: Views on the grace period length

	Total n=4,976	LEZ resident n=561	Work in LEZ n=1,774	Visit LEZ for leisure n=3,703	Business in LEZ n=304	Business access LEZ n=470
2 years is too short	43%	49%	48%	39%	55%	64%
2 years is about right	24%	19%	21%	25%	16%	14%
2 years is too long	23%	22%	22%	25%	16%	11%
Don't know enough to say	10%	9%	9%	9%	11%	9%
Not answered	1%	1%	1%	1%	2%	1%

Source: Q12. Which of the following best fits your views on the length of the grace period?

3.4.1 Reasons why do not agree with grace period approach

All respondents were asked to give comments if they disagreed with or were not sure about (neither/don't know) the grace period approach and given space to write in their responses. These have been distilled and the main themes drawn together for analysis. Of the 46% (2,282) who did not support or were not sure of the approach, it can be seen in Table 12 that 48% of mentions were about the grace period approach.

The most frequently mentioned view of the approach were the 18% of mentions that surrounded the thought that the grace period is too short and should be longer, whilst 13% overall felt that it is too long in some way. Otherwise 11% stated that there should be no grace period and 3% said that residents should be exempt.

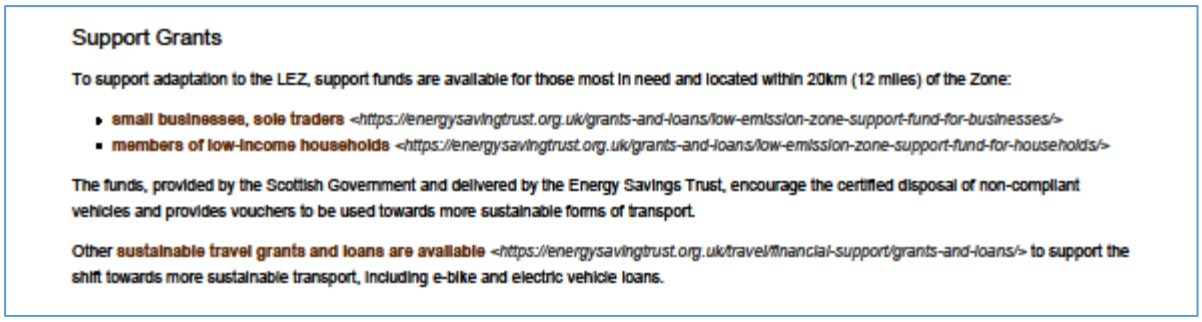
Table 12: Reasons for opposing the grace period approach

	Oppose or Neither/don't know n=2,282
Not in favour of LEZ	*29%*
Not answered /	*13%*
Comment not applicable to question	*8%*
Don't know enough to say / No comment	*2%*
Mentions specific to grace period	**48%**
No grace period/why wait?/do it now	11%
2 years ***too short*** - to save funds/replace vehicle	9%
2 years too short - covid impact/recovery	3%
Longer period for residents	3%
Too short (nfs)	1%
Should be 5 years	1%
Businesses need longer	1%
Up to 2030 (when new cars must be electric)	0%
Should be 3 years	0%
2 years ***too long***	7%
Should be 1 year	4%
Shorter/no period for non-residents	2%
6 months at most	1%
Too long for commercial/business	1%
2 years residents, 1 year all others	0%
Residents should be exempt	3%
Stop most polluting vehicles first, then others	1%
Alongside roll out of EV charge points	1%
No grace period for cars; No grace period for diesel; Lothian Buses no grace period; Businesses should be exempt; Existing vehicles in LEZ should be exempt; Should be by vehicle type/ emissions	0% each

Source: Q13. Why are you not in favour/unsure of a grace period that applies equally to residents, non-residents and all vehicle types, as proposed?

3.5 Support grants

The online survey gave the following information regarding support grants:



Support Grants

To support adaptation to the LEZ, support funds are available for those most in need and located within 20km (12 miles) of the Zone:

- small businesses, sole traders <https://energysavingtrust.org.uk/grants-and-loans/low-emission-zone-support-fund-for-businesses/>
- members of low-income households <https://energysavingtrust.org.uk/grants-and-loans/low-emission-zone-support-fund-for-households/>

The funds, provided by the Scottish Government and delivered by the Energy Savings Trust, encourage the certified disposal of non-compliant vehicles and provides vouchers to be used towards more sustainable forms of transport.

Other sustainable travel grants and loans are available <https://energysavingtrust.org.uk/travel/financial-support/grants-and-loans/> to support the shift towards more sustainable transport, including e-bike and electric vehicle loans.

3.5.1 Awareness of support grants for small businesses, low-income households

The survey asked if respondents were aware of the LEZ support funds for small businesses and low income households that were available. 28% were aware and knew of them and 63% were not aware. (Table 13). Awareness was highest for Businesses in the LEZ (35%) and those accessing the LEZ (33%).

Table 13: Awareness of support grants

	Total n=4,976	LEZ resident n=561	Work in LEZ n=1,774	Visit LEZ for leisure n=3,703	Business in LEZ n=304	Business access LEZ n=470
Yes, aware	28%	32%	31%	27%	35%	33%
No, not aware	63%	58%	60%	65%	57%	59%
Don't know/unsure	8%	9%	8%	8%	8%	8%
Not stated	0%	0%	0%	0%	0%	0%

Source: Q14. Were you aware of the LEZ support funds for small businesses and low-income households that are available?

3.5.2 Awareness of other sustainable travel grants and loans

The survey also asked about awareness of other sustainable travel grants and loans and here 23% were aware and knew of them and 66% were not aware. (Table 14). Again awareness was highest for Businesses in the LEZ (30%) and those accessing the LEZ (29%), although awareness for those who Work in the LEZ was not far behind at 28% and 27% for LEZ residents.

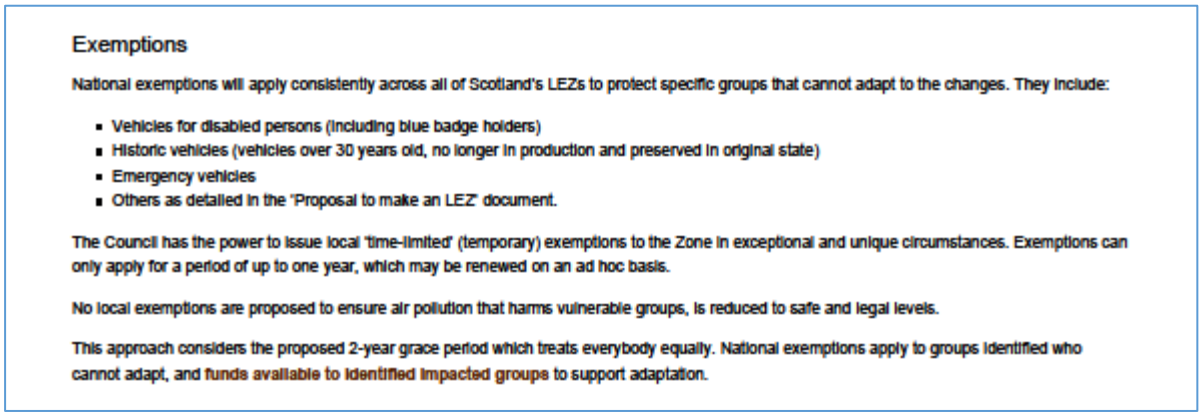
Table 14: Awareness of other sustainable travel grants and loans

	Total n=4,976	LEZ resident n=561	Work in LEZ n=1,774	Visit LEZ for leisure n=3,703	Business in LEZ n=304	Business access LEZ n=470
Yes, aware	23%	27%	28%	23%	30%	29%
No, not aware	66%	62%	61%	68%	60%	61%
Don't know/unsure	10%	11%	10%	9%	9%	9%
Not stated	0%	0%	0%	0%	1%	0%

Source: Q15. Were you aware of other sustainable travel grants and loans that are available?

3.6 Exemptions

The online survey then looked at exemptions from the LEZ, the survey showing respondents the following information:



Exemptions

National exemptions will apply consistently across all of Scotland's LEZs to protect specific groups that cannot adapt to the changes. They include:

- Vehicles for disabled persons (including blue badge holders)
- Historic vehicles (vehicles over 30 years old, no longer in production and preserved in original state)
- Emergency vehicles
- Others as detailed in the 'Proposal to make an LEZ' document.

The Council has the power to issue local 'time-limited' (temporary) exemptions to the Zone in exceptional and unique circumstances. Exemptions can only apply for a period of up to one year, which may be renewed on an ad hoc basis.

No local exemptions are proposed to ensure air pollution that harms vulnerable groups, is reduced to safe and legal levels.

This approach considers the proposed 2-year grace period which treats everybody equally. National exemptions apply to groups identified who cannot adapt, and funds available to identified impacted groups to support adaptation.

3.6.1 Support for the local exemption approach

The survey asked to what extent respondents were in favour of the approach for exemptions and the findings show overall 58% in favour and 23% opposing the approach for exemptions. (Table 15).

Whilst the overall figures show a positive view it should be noted that again Businesses are less positive, with only 44% in favour for both those in the LEZ and those who access it. This compares to 54% for those who Work in LEZ, 56% for LEZ residents, and 60% Visit LEZ for leisure.

Table 15: Levels of support for the exemptions approach

	Total n=4,976	LEZ resident n=561	Work in LEZ n=1,774	Visit LEZ for leisure n=3,703	Business in LEZ n=304	Business access LEZ n=470
Strongly in favour	29%	29%	27%	30%	22%	25%
Somewhat in favour	29%	27%	27%	30%	24%	19%
Neither/don't know	19%	15%	20%	18%	23%	25%
Somewhat opposed	8%	6%	8%	8%	5%	7%
Strongly opposed	15%	22%	17%	13%	24%	22%
Not stated	1%	1%	1%	1%	2%	1%

Source: Q16. Overall, to what extent are you in favour of this local exemption approach?

3.6.2 Other groups of people or types of vehicle that should be exempt

The next question was open and asked if there were any other groups of people or types of vehicle than those listed that should be exempt. These responses were collated (Table 16 overleaf). Overall 30% gave further thoughts on exemptions, the most frequently mentioned being more all-encompassing groups, rather than smaller and more specific groups of people or vehicle types.

The most mentioned groups were all vehicles/everyone exempt (5%); city centre residents (4%); and trades/delivery vans (4%). These were followed by low income/those who can't afford it (2%); NO exemptions at all (2%); NOT historic/classic (2%); disabled/DLA families/those who support/drive etc. (2%); work in LEZ (2%); and Edinburgh residents (the broader city) (2%).

Table 16: Other groups of people/types of vehicle types that should be exempt

	Total n=4,976
No further exemptions given	**70% (3,471)**
Nothing stated	60%
None / no more (stated)	1%
Answer more pertinent to previous questions	8%
Further exemptions given (multiple responses)	**30% (1,505)**
All vehicles/everyone exempt	5%
City centre residents	4%
Trades/delivery vans	4%
Low income/those who can't afford it	2%
There should be NO exemptions at all	2%
NOT historic/classic	2%
Disabled/DLA families/those who support/drive. Etc.	2%
Work in LEZ	2%
Edinburgh residents	2%
People: Care workers and unpaid carers; NHS staff; Pensioners; Businesses in LEZ; Taxis/chauffeurs; Infrequent/occasional use *Vehicles:* Motorcycles/mopeds; Proven low emissions (MOT compliant); Old cars/upgraded, less than 30 years; Diesel - so not penalised for doing as asked!; Electric vehicles; Public transport/buses; All cars; Specific models (mix – mostly their own!)	1% each
People: Charities/volunteer workers; Families with children; Medical appointments; Student drop off; Vulnerable/ shielding from covid; Live 12 miles+ out of city; Musicians/ people putting on gigs etc.; War injured veterans; Armed forces; Driving instructors; Live where there is poor public transport; Attending religious services; Under 25s; NOT Blue Badge/ disabled *Vehicles:* Camper vans; Small engines; Vehicles if live where no EV charging; School vehicles (i.e. trips); Wedding and funeral vehicles; Tour buses/drop off; Old petrol cars; LPG vehicles; Newish cars/still under lease/good life left; Euro 4 and over; Low volume manufacturers (e.g. TVR); Wheelchair accessible vehicles (WAV); Old tourist buses; Breakdown/recovery; Euro 6 standard (regardless of year); Specialist vehicles (e.g. cranes, chilled/freezer trucks); non-emergency patient transport; ONLY emergency exempt; NOT emergency; NOT tour buses/old buses; NOT showman vehicles	0% each

Source: Q17. Are there any other groups of people of types of vehicle you think should be exempt from the LEZ? Which and why?

3.7 Adapting to the LEZ

Assuming the Edinburgh LEZ was implemented as proposed, respondents were asked what, if anything, they would do differently as a result of it coming into force. Just under a quarter of respondents said their vehicle would comply, so they would do nothing. However, this drops to 15% for Businesses who access the LEZ and 17% for LEZ residents. Perhaps not surprisingly, Businesses' most frequently mentioned action would be to upgrade their vehicle, with 17% of those who access the LEZ and 16% for those located in the LEZ stating this. Otherwise the most frequently mentioned actions were to change route, use more public transport, walk or bike more, alongside upgrade the vehicle.

The main point to note here however is the myriad of responses. The fact that none are mentioned by more than 20% of respondents would indicate that there is not an 'obvious' solution to the implementation of the LEZ for those whose vehicles would not comply. Indeed 10% simply said they did not know what they would do as there would appear to be no apparent solution to their worries over the implementation of the LEZ.

Table 17: Action if implemented

	Total n=4,976	LEZ resident n=561	Work in LEZ n=1,774	Visit LEZ for leisure n=3,703	Business in LEZ n=304	Business access LEZ n=470
Nothing	*18%*	*26%*	*20%*	*18%*	*19%*	*15%*
Nothing, my vehicle complies	*24%*	*17%*	*20%*	*26%*	*18%*	*15%*
Nothing, don't travel through city centre	*3%*	*1%*	*1%*	*3%*	*1%*	*1%*
Don't know/no apparent solution	*10%*	*13%*	*11%*	*8%*	*13%*	*16%*
Not answered	*1%*	*0%*	*1%*	*1%*	*1%*	*1%*
Change my route	19%	6%	18%	21%	12%	21%
Use public transport more	18%	10%	14%	20%	9%	7%
Walk more	15%	13%	13%	16%	9%	7%
Upgrade my vehicle	13%	16%	14%	12%	16%	17%
Cycle more	13%	10%	13%	14%	9%	5%
Choose alternative destination	12%	4%	10%	15%	10%	15%
Use taxi/private hire more	5%	4%	5%	6%	6%	5%
Apply for other sustainable travel grants	4%	6%	4%	3%	7%	10%
Give up my vehicle	3%	6%	4%	3%	5%	4%
Apply for LEZ support funds for small businesses/sole traders	3%	5%	3%	2%	13%	15%
Apply for LEZ support funds for low income households	3%	6%	4%	2%	8%	8%
Join a car club	2%	2%	2%	2%	3%	1%
Use more park and ride	2%	0%	2%	2%	1%	0%
Car share in compliant vehicle	1%	1%	1%	1%	0%	1%

Source: Q18. If the LEZ is implemented as proposed, what if anything, would you do differently? Tick all that apply

Looking at the further actions that respondents included themselves in addition to the list pf potential actions given it can be seen that the most frequently mentioned of these include quite fundamental life changes, such as moving house, work or their business:

- move and live somewhere else (5%)
- avoid Edinburgh city centre (4%)
- work elsewhere, move job/business (3%)
- shop elsewhere/out of town (3%)

The remaining suggestions as to what they would do include the following and at this point is should be noted that of all the potential actions only very few mention positive outcomes of the LEZ such as enjoying better air and better travel conditions within the LEZ:

- carry on regardless (1%)
- protest, complain, petition (1%)
- drive around LEZ (longer and more polluting!) (1%)
- vote for someone else (1%)
- consider/go electric – BUT charging points? (1%)
- already have no car/use public transport/cycle (1%)
- accept paying fines (0%)
- not visit people in city centre (0%)
- breathe better air (0%)
- cycle more/more safely/pleasantly (0%)
- visit more, enjoy less cars (0%)
- lobby to extend the zone (0%)
- park just outside, walk/bus in (0%)
- give up charity/volunteer work (0%)
- buy/use and older classic car (exempt) (0%)
- need to check if car complies (0%)
- use car less (0%)
- work/earn less due to increased public transport time (0%)
- cry/worry/be upset (0%)

3.8 Responses from Organisation representatives

The following section highlights views of representatives of organisations who gave their comment to the consultation. These were in the form of 75 responses via the online survey and 22 email responses (whose comments gave some but may not have answered all of the online responses specifically).

The organisation data is shown at total level due to the small base size and concentrates on questions pertaining to the LEZ specifically, taking them as the organisation's response (whereas the personal demographic questions represent the individual completing the survey). Organisations were shown the same LEZ information, therefore, for the sake of brevity, this detail is not repeated.

3.8.1 Type of organisation

The types of organisation that took part were as follows:

- Private sector 39% (29)
- Transport/logistics 23% (17)
- Lobby/policy/charity 17% (13)
- Community group 12% (9)
- Education 7% (5)
- Public sector 3% (2)

3.8.2 Support for the LEZ

Overall, 50% said they were in favour and 43% said they were opposed:

- strongly in favour 21% (16)
- somewhat in favour 29% (22)
- neither/don't know 4% (3)
- somewhat oppose 15% (11)
- strongly oppose 28% (21)
- not answered 3% (2)

Looking at the strength of opinion it can be seen however that organisations also have the largest response for 'strongly opposed' at 28%. This is especially notable for Private sector at 45% and for Transport/logistics at 29%.

Organisations who opposed the Edinburgh LEZ or who were unsure (neither/don't know) were asked to give reasons for their views. Of the 35 who did not support or were unsure of the LEZ, it can be seen that there are various reasons given for not supporting the LEZ, but that the largest concern is clearly the implications and issues for businesses/organisations affected.

- *Implications/issues for businesses/organisations affected*:
  - can't afford to upgrade business vehicles (16 mentions) (46%)
  - detrimental to businesses working in/through LEZ (7)
  - will stop businesses working in LEZ (6)
  - can't afford more costs post covid (6)
  - covid – timing not appropriate post covid (4)
  - will force businesses out of Edinburgh (3)
  - delivery issues (3)
  - detrimental to businesses based in LEZ (2)
  - electric vehicles still too expensive, needs to be encouraged (2)
  - EV charging point infrastructure not sufficient – build it up (2)
  - timescale to introduction too short (1)

- *Other causes of congestion, and pollution*:
  - Spaces for People has caused issues/remove it (5)
  - congestion due to other issues (4)
- *Views of specifics of the boundary of the LEZ*:
  - zone too small, should cover more (3)
  - should be all of Edinburgh/out to the bypass (2)
  - boundary – don't include Preston Street Primary School (2)
  - excludes most polluted roads/routes (1)
- *Implications as a result of the LEZ area*:
  - will move/cause congestion in surrounding streets/areas (4)
  - will more/cause pollution in surrounding streets (3)
- *Views of the need for a LEZ*:
  - not needed – pollution levels not justified/proven/have no impact (2)
  - not well thought through/designed/not practical (1)
  - scrapping usable cars is a waste/worse for the environment (1)
  - insufficient information to comment (1)
- *Implications/issues for others affected*:
  - detrimental/discriminatory to residents (1)
  - exclusive/elitist/the 'rich part of town'/only for rich people (1)

These views were reiterated in the 22 email responses, which were generally in favour of the idea of LEZs and better air quality. However the majority of these responses also raised issues of the likely increases in congestion, parking issues and pollution around the boundary; as well as the desire for the grace period to be shorter (and a query why they are different to Glasgow); questions regarding the exemption of historic vehicles; and the need for more financial support than proposed. They also raised further questions and issues that included:

- the LEZ does not go far enough, it should cover more/all of Edinburgh, some noting that it must include areas of high pollution such as Corstorphine (8)
  - also here the thought was raised that the LEZ may be more likely to simply encourage a swap to a compliant car, rather than encouraging the use of other forms of transport (i.e. using cars less)

- thought needs to be given to issues pertaining to surrounding areas and the need for individuals and businesses from these areas to access Edinburgh (3)
  - potential loss of business/inability to compete for small businesses
  - public transport links into Edinburgh (such as from Borders, Fife, East Lothian) must be optimised and encouraged to allow easy and affordable travel; and consideration given that people may not wish to travel this way after dark and that this limits participation in evening activities
  - thought must be given to private buses/minibuses who travel into the city to allow and facilitate this (or risk routes becoming unviable and dropped)
  - consideration of the possible displacement of non-compliant vehicles to areas out of Edinburgh within the second-hand car market (and the consequent view that pollution is simply being shifted out of the city)
  - consideration of extending the area where financial support can be obtained

- boundary issues for businesses who need to deliver to the city, including the availability of areas to stop and swap goods from HGVs to compliant/smaller vehicles for the last stage of their delivery journey (final mile delivery) (2)

- consideration for taxis/private hire vehicles and how the LEZ will work bearing in mind the usual longer periods taken in this industry to pay for vehicles (and therefore the longer turnaround time for replacing vehicles) (1)

- consideration for the areas around the boundary in terms of signage and cameras, ensuring that they do not impinge on the city's aesthetics (1).

3.8.3 Support for the boundary

In terms of the boundary for the Edinburgh LEZ, overall, 36% said they were in favour and 48% said they were opposed:

- strongly in favour 16% (12)
- somewhat in favour 20% (15)
- neither/don't know 16% (12)
- somewhat oppose 11% (8)
- strongly oppose 37% (28)

Strength of opinion here also shows that the largest response was for 'strongly opposed' at 37% and again this is especially notable for Private sector at 55%.

Organisations who opposed to/unsure of the boundary were asked for their reasons. Of the 48, 22 gave a specific comment on the boundary and most responses pertain to the impact of the boundary on journey time, the creation of congestion in other areas and the increase in pollution with both of these:

- create longer journeys and more pollution (8 mentions)
- cause congestion elsewhere/other routes (7)
- cause issues/parking problems on the boundary (7)
- too small/should be bigger (5)
- should be the whole city/to the bypass/all or nothing (3)
- too big/should be smaller (3)
- don't make the boundary Preston St Primary School (2)
- 1 each: arbitrary/odd areas/random/don't see why; more polluted streets elsewhere need it more; not around Holyrood Park.

3.8.4 Support for the grace period approach

The approach to the grace period applying equally to residents, non-residents and all vehicle types shows overall 56% were in favour to some extent and 28% opposed:

- strongly in favour 36% (27)
- somewhat in favour 20% (15)
- neither/don't know 13% (10)
- somewhat oppose 11% (8)
- strongly oppose 17% (13)
- not answered 3% (2)

In terms of the 2-year length of the grace period the largest response was for this being too short a time period for these organisations:

- 2 years is too short 43% (32) (59%: Private sector & Transport/logistics)
- 2 years is about right 29% (22)
- 2 years is too long 20% (15)
- don't know enough 4% (3)
- not answered 4% (3)

Twenty of the 31 organisations who opposed/were not sure about the grace period approach gave a reason for this, most noting the period was too short:

- too short:
  - 2 years too short – to save funds/replace vehicle (8 mentions)
  - 2 years too short – covid impact/recovery (1)
  - businesses need longer (1)
  - longer period for residents (1)
- too long:
  - no grace period/why wait?/do it now (3)
  - 6 months at most (3)
  - should be 1 year (1)
  - 2 years too long (1)
  - shorter/none for non-residents (1)
- other:
  - alongside roll out of EV points (1)
  - don't know about it enough to say (1)

3.8.5 Awareness of grants and loans

Organisations were asked if they were aware of the available LEZ support funds for small businesses and low income households and 52% (39) were aware and 41% (31) not aware (don't know/not sure 4% (3) / not answered 3% (2)).

Organisations were also asked if they were aware of other sustainable travel grants and loans and again 52% (39) were aware, with 37% (28) not aware (don't know/not sure 8% (6) / not answered 3% (2)).

3.8.6 Support for the local exemption approach

Thoughts on exemptions show overall 61% of organisations in favour and 20% opposing the approach:

- strongly in favour 40% (30)
- somewhat in favour 21% (16)
- neither/don't know 15% (11)
- somewhat oppose 7% (5)
- strongly oppose 13% (10)
- not answered 4% (3)

41 of the 75 organisations then mentioned other groups of people or types of vehicle than those listed that should be exempt. This included a wide list, with most mentions being for trades and delivery vans and businesses in the LEZ:

- trades/delivery vans (12 mentions)
- businesses in the LEZ (7)
- NOT buses/tour buses (4)
- specialist vehicles (e.g. cranes, chilled/freezer trucks) (3)
- NOT historic/classic (3)
- all vehicles/everyone exempt (3)
- NOT emergency (2)
- NOT Blue Badge/disabled (2)
- Disabled/DLA families/ those who support/drive etc. (2)
- 1 each: autistic people; public transport workers; LCVs; public transport/ buses; taxis/chauffeurs; motorcycles/mopeds; charities/volunteer workers; low income/those who can't afford it; ONLY emergency exempt.

3.8.7 Adapting to the LEZ

In terms of what would be done if the LEZ was implemented as proposed, 17 of the 75 organisations (23%) said they would do something, the two most frequently mentioned actions being to work elsewhere, move job/business or to apply for LEZ support funds for small businesses/sole traders.

- Do something – 17 of 75 (23%)
  - work elsewhere, move job/business (13 mentions) (17%)
  - apply for LEZ support funds for small businesses/sole traders (13) (17%)
  - upgrade vehicle (8)
  - use public transport more (8)
  - walk more (7)
  - change route (4)
  - apply for other sustainable travel grants (4)
  - downsize/lay people off (3)
  - choose alternative destination (3)
  - cycle more (3)
  - move and live somewhere else (2)
  - reduce service/work in LEZ (2)
  - apply for LEZ support funds for low income households (2)
  - give up vehicle (1)
  - use taxis/private hire cars more (1)
  - use more park and ride (1)
  - protest, complain, petition (1)
  - charge customers more (1)

- Do nothing/no (specific) response – 58 of 75 (77%)
  - nothing 13% (10)
  - nothing – vehicle complies 20% (15)
  - nothing – don't travel through city centre 7% (5)
  - don't know/no apparent solution 13% (10)
  - not answered 5% (4)
  - answer not applicable to 'do differently' 19% (14)

APPENDIX

1. Table 6 – including minor responses (2%, 1%, 0%)
   Note: full tables can be found in a separate PDF document

2. Online survey (print version)

Appendix 1 – table 6 including minor responses (2%, 1%, 0%)

Table 6: Reasons for opposing the proposed Edinburgh LEZ

	Oppose & Neither/don't know n=2,570
Discriminatory to low income households/workers	14%
Can't afford to upgrade vehicle/object to being put to the expense	13%
Spaces for People has caused issues/remove it	9%
Will move/cause congestion in surrounding streets/areas	9%
Public transport insufficient/limited	8%
Money making scheme/stealth tax	8%
Will stop people visiting/using the city/go elsewhere to shop	7%
Will move/cause pollution in surrounding streets/areas	7%
Detrimental to businesses based in LEZ	7%
Dislike/distrust/issue with the Council	6%
Spend money on road maintenance/keeping traffic flowing	6%
Not needed – pollution levels not justified/proven/have no impact	5%
EV charging point infrastructure not sufficient – build it up	5%
Congestion is due to other issues	5%
Simply an anti-car policy	4%
Will cause longer journeys to avoid LEZ/more pollution	4%
Detrimental/discriminatory to residents	4%
Need car, no alternative, work, leisure, appointments, help people	4%
Scrapping usable cars is a waste/worse for environment	4%
Diesel, told to get it, then told not to! Too stringent/not fair	3%
Not needed – time will reduce polluting vehicles on roads	3%
Not well thought through/designed/not practical	3%
Discriminatory to disabled/don't qualify for Blue Badge	3%
Should be an exemption for residents	2%
Financial support offered insufficient/biased/not fair	2%
Need car, can't use public transport	2%
Will affect travel to/through the LEZ	2%
Discriminatory to care/health workers/unpaid carers	2%
Exclusive/elitist/the 'rich part of town'/only for rich people	2%
Timescale to introduction too short	2%
Discriminatory to those with older vehicles	2%
Not in favour of LEZ (nfs)	2%
Covid – timing not appropriate post covid	2%
Spend money on other things	2%
Not needed/no benefit	2%
Buses are the biggest polluters	2%
Pollution in city centre is due to other measures	2%
20mph has caused issues	2%
Need car for work purposes (delivery, carer, trades)	2%
Zone too small – should cover more	2%
Covid – fears/don't want to risk public transport	1%
Detrimental to Edinburgh generally (nfs)	1%

Will force people out of the city/have to move out	1%
Will just get bigger and bigger/expand over time	1%
Will cause rat runs through residential areas	1%
Cyclists and cycle ways cause congestion/danger	1%
Other areas in Edinburgh have much higher levels	1%
Need car, can't walk distance/cycle	1%
Need car, transport for children's activities/pick ups	1%
Public transport too expensive (e.g. trains)	1%
Discriminatory to shift workers	1%
Will cause workers to lose/have to move jobs	1%
Prohibits travel to NHS facilities (e.g. PAEP, WGI)	1%
Have classic car and live/drive in LEZ	1%
Need more/better parking (outside zone)	1%
Carrot, not stick best approach	1%
It's my right, should be free to drive where I want	1%
Detrimental to businesses working in/through LEZ	1%
Will force businesses out of Edinburgh	1%
Will stop businesses working in LEZ	1%
Can't afford to upgrade business vehicles	1%
Delivery issues	1%
Should be based on actual emissions, not age/Euro 6 status	1%
Electric vehicles still too expensive, needs to be encouraged	1%
All pass emissions test/MOT/pay road tax – enough!	1%
Should be stricter overall (all or nothing)	1%
Do it by number of journeys, not blanket ban	1%
Should be all of Edinburgh/out to the bypass	1%
Excludes most polluted roads/routes	1%
Zone too big – should be less	1%
North/South routes will be restricted	1%
West/East routes will be restricted	1%
Excludes Air Quality Management Areas	0%
Taxis cause pollution	0%
Will put prices up for trades in city centre	0%
Have campervan and live/drive in LEZ	0%
Shouldn't be 24/7/peak only	0%
More info needed/not sure which vehicle applies to	0%
Fines too high	0%
More/better cycle lanes needed	0%
Can't afford more costs post covid	0%
Discriminatory for private hire cars	0%
Hinders/stops voluntary work	0%
CO2 from making new cars worse than continued use of old	0%
Vehicle classed as fuel efficient, low road tax, why change?	0%
Taxis should be exempt	0%
Council's own vehicles shouldn't be exempt	0%
Cost of the scheme is a concern	0%
Will cause drivers lots of inconvenience/adversely affect	0%
You're forcing us onto buses/conflict of interest, you own them	0%
Congestion charge by the back door (voted against it)	0%

What are the alternatives?	0%
HGVs worst/commercial vehicles (not private cars)	0%
Live on the boundary – pollution will be worse	0%
Goes too far south	0%
Live/park on/over boundary	0%
Boundary – include New Town	0%
Boundary – include more West, St Johns Rd	0%
Boundary – include Queen St	0%
Boundary – include London Rd	0%
Boundary – include Holyrood Park	0%
Boundary – include York Place	0%
Boundary – include Calton Hill/Royal Terrace	0%
Boundary – don't include Western Approach Rd	0%
Boundary – don't include Preston St Primary School	0%
Boundary – don't include historic vehicles	0%
Boundary – don't include city workers, such as tourist guides	0%
Boundary – don't include West End outwards	0%
Boundary – don't include out to Abbeyhill/London Road	0%
Boundary – don't include Waverley Station/allow access	0%
Boundary – don't include car parks at Omni/St James' centre	0%
Don't have boundary as Melville Drive/Meadows	0%
Two wheelers should be exempt/motorcycles/scooters	0%
How will you enforce it?	0%
Other	2%
No comment/Don't know/Can't say	3%
Insufficient information to comment	1%

Source: Q6. Why are you not in favour/unsure of the Edinburgh LEZ as proposed?

Appendix 2 – the online survey (print version)

Edinburgh's Proposed Low Emission Zone

Overview

The City of Edinburgh Council aims to reduce air pollution, since it presents a significant threat to public health. It is especially harmful to young children, the elderly and those suffering from pre-existing conditions, including heart and lung diseases.

Low Emission Zones (LEZs) are being introduced across Scotland's four largest cities: Edinburgh, Glasgow, Aberdeen and Dundee in response to dangerous levels of air pollution, primarily nitrogen dioxide (NO_2), generated by road traffic.

Low Emission Zones (LEZs) aspire to improve public health, by discouraging the most polluting vehicles from entering an area. If a vehicle entering a LEZ does not meet the minimum exhaust emission standard, then a penalty fine is issued. The Zone is intended to only target the most polluting vehicles.

Why your views matter

We are seeking views on the following proposed aspects of the Edinburgh LEZ:

- city centre zone boundary
- 2 -year grace period
- local exemptions and considerations for impacted groups

We are also seeking to understand knowledge of LEZs, related support funds. Full scheme details are available in the 'Proposal to make a LEZ' or you can find a summary on our website.

The survey should take around 10 minutes to complete.

Responses, comments or feedback can also be emailed to: low.emission.zone@edinburgh.gov.uk , or posted to: *Low Emission Zone, Waverley Court G3, 4 East Market Street, Edinburgh, EH8 8BG*

Your Data

This online survey is being run by the City of Edinburgh Council and the findings will be analysed by an independent market research agency.

Responses you give in the survey will be treated confidentially and no comments you make can or will be linked directly to you, unless responding on behalf of an organisation. You can view our Privacy Notice for Transport and Infrastructure here.

Once you have completed the survey and clicked submit, the survey will be sent to a secure City of Edinburgh Council server where your personal data will be held. The data will be sent by secure means to the market researcher team for analysis. No personal data will be included in this data set and personal data will be deleted.

If you have any question about how we gather and manage personal data, please get in touch, or contact the council's information Governance team, information.compliance@edinburgh.gov.uk

About You

The Council uses this information to ensure responses to consultations are genuine and that each person is submitting only one response. No names or email addresses will be shared with any 3rd party, and will be deleted.

First Name
(Required)

Surname
(Required)

Email
(Required)

Postcode (first half is sufficient)
(Required)

Are you responding to this survey as a private individual or on behalf of an organisation?
(Required)

Please select only one item

◯ Individual ◯ Organisation

Tell us about your organisation

The Council uses this information to ensure responses to consultations are genuine and that each person is submitting only one response. Organisation name will not be shared with any 3rd party, but may be analysed and published by the Council.

What is the name of the organisation?
(Required)

About You

Which of the following best describes you? Choose one of the following

Please select only one item

◯ I live in Edinburgh city centre ◯ I live in another part of Edinburgh ◯ I live outside of Edinburgh

Which of the following best describes you? Choose any that apply.

Please select all that apply

☐ I work in the city centre ☐ I operate a business/organisation that is located within the city centre ☐ I study in the city centre
☐ I visit the city centre for leisure/shopping/etc ☐ None of the above

How you travel around Edinburgh

Currently, how often do you use each of the following to travel to, from or around Edinburgh city centre – either for personal or business reasons? Choose any that apply.

	Everyday	At least once a week	At least once a month	Less than once a month	Never - could use, but choose not to	Never - do not have access to this
Walk *Please select only one item*	○	○	○	○	○	○
Wheelchair (wheeling) *Please select only one item*	○	○	○	○	○	○
Bicycle or scooter *Please select only one item*	○	○	○	○	○	○
Bus or coach *Please select only one item*	○	○	○	○	○	○
Motorcycle or moped *Please select only one item*	○	○	○	○	○	○
Car *Please select only one item*	○	○	○	○	○	○
Tram *Please select only one item*	○	○	○	○	○	○
Train *Please select only one item*	○	○	○	○	○	○
Taxi or private hire car *Please select only one item*	○	○	○	○	○	○
Light goods vehicle *Please select only one item*	○	○	○	○	○	○
Heavy good vehicle *Please select only one item*	○	○	○	○	○	○

When do you normally tend to travel to, from or around the city centre, for personal and/or business reasons?

Please select only one item

○ Every day (Monday to Sunday) ○ Weekdays only (Mondayto Friday) ○ Weekends only (Saturday to Sunday)
○ Other mix of days

Edinburgh's Proposed Low Emission Zone (LEZ)

Low Emission Zones (LEZ) improve public health, by discouraging the most polluting vehicles from entering an area. If a vehicle entering a LEZ does not meet the minimum exhaust emission standard, then a penalty fine is issued. LEZs are designed to only target the most polluting vehicles.

Edinburgh has made good progress in reducing levels of harmful air pollution, but measures could go further. The Council proposes targeted action in the form of a City Centre Low Emission Zone, which aims to tackle air pollution in areas where levels remain above legal standards.

Benefits of this proposed Zone will extend beyond the city centre: improving air quality, encouraging more sustainable travel and supporting the reduction of greenhouse gases across the city.

Full scheme details are available in the **'Proposal to make a LEZ' document.**

To what extent are you in favour of the Edinburgh LEZ as proposed?

Please select only one item

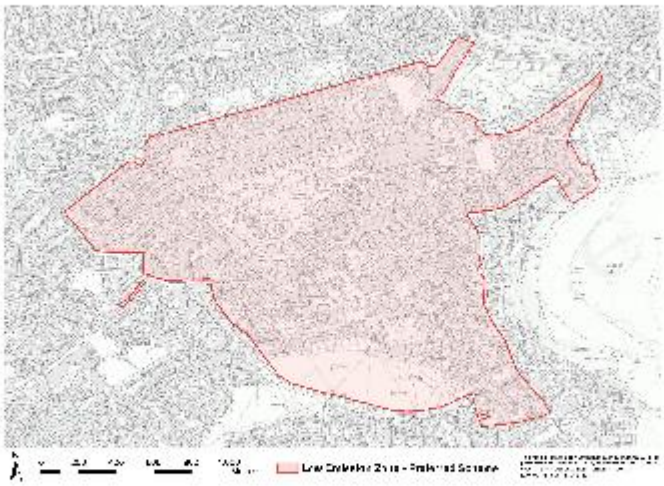
◯ Strongly in favour ◯ Somewhat in favour ◯ Neither/don't know ◯ Somewhat oppose ◯ Strongly oppose

Edinburgh's Proposed Low Emission Zone (LEZ)

Why are you not in favour/unsure of Edinburgh LEZ as proposed?

Write in your thoughts here:

Proposed LEZ Boundary



The Scottish Environmental Protection Agency (SEPA) helped the Council model the air quality and traffic impacts of different boundary options. The primary aim in choosing the most suitable option, was to target air pollution in the worst areas. Another key consideration was to provide a logical and clearly sign-posted diversion for traffic wishing to avoid the Zone.

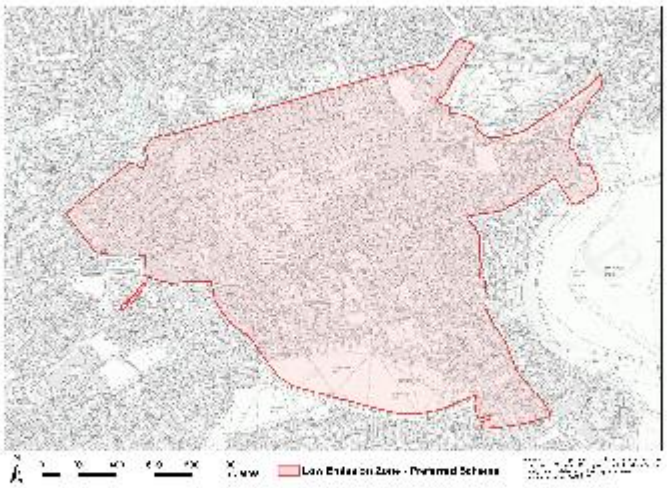
A road network management strategy will be developed alongside the LEZ to ensure traffic is managed around the boundary.

To what extent are you in favour of the boundary for the LEZ in Edinburgh as proposed?

Please select only one item

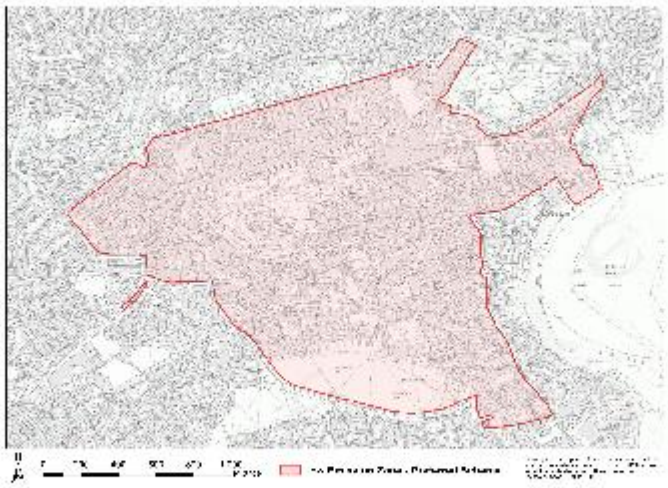
◯ Strongly in favour ◯ Somewhat in favour ◯ Neither/don't know ◯ Somewhat oppose ◯ Strongly oppose

Proposed LEZ Boundary



Why are you not in favour / unsure the boundary as proposed?

Proposed LEZ Boundary



When you look at the boundary map as shown here, which of the following best describes you? Choose one that applies to you.

Please select only one item

◯ I live within the proposed Edinburgh City Centre LEZ ◯ I live outside the proposed Edinburgh City Centre LEZ

When you look at the boundary map as shown here, which of the following best describes you? Choose any that apply to you.

Please select all that apply

☐ I operate a business/organisation that is located within the proposed Edinburgh City Centre LEZ
☐ I operate a business/organisation that requires access to the proposed Edinburgh City Centre LEZ
☐ I work within the proposed Edinburgh City Centre LEZ ☐ I study within the proposed Edinburgh City Centre LEZ
☐ I visit the proposed Edinburgh City Centre LEZ for leisure/shopping/etc ☐ None of the above

Grace Period

Edinburgh's proposed LEZ is due to be introduced on 31st May 2022, if approved by Councillors and Scottish Ministers.

A 2-year grace period will then commence. No penalties (fines) will be issued until **1st June 2024**, when enforcement within the Zone begins.

The grace period aims to provide time for individuals and businesses to prepare especially in terms of recovering from the COVID19 pandemic, while supporting the protection of public health and the most vulnerable.

The Scottish Government's regulations on LEZs require a minimum grace period of 1 year. The Council has proposed a period of 2-years grace taking account of the City's recovery from the COVID19 pandemic.

The proposed 2-year grace period will also apply equally to residents, non-residents and for all types of vehicles included in the scope of the LEZ. Note there are exemptions specified later in the 'Proposal to make a LEZ' document and later in the questionnaire, which includes disabled blue badge holders.

To what extent are you in favour of this approach which applies the grace period equally to residents, non-residents and all vehicle types?

Please select only one item

◯ Strongly in favour ◯ Somewhat in favour ◯ Neither/don't know ◯ Somewhat oppose ◯ Strongly oppose

Which of the following best fits your views on the length of the grace period? Choose one response.

Please select only one item

◯ 2 years is too short a time period ◯ 2 years is about right and should be sufficient time ◯ 2 years is too long atime period
◯ Don't know enough to say

Grace Period

Why are you not in favour/unsure of a grace period that applies equally to residents, non-residents and all vehicle types, as proposed?

Support Grants

To support adaptation to the LEZ, support funds are available for those most in need and located within 20km (12 miles) of the Zone:

- **small businesses, sole traders** <*https://energysavingtrust.org.uk/grants-and-loans/low-emission-zone-support-fund-for-businesses/*>
- **members of low-income households** <*https://energysavingtrust.org.uk/grants-and-loans/low-emission-zone-support-fund-for-households/*>

The funds, provided by the Scottish Government and delivered by the Energy Savings Trust, encourage the certified disposal of non-compliant vehicles and provides vouchers to be used towards more sustainable forms of transport.

Other **sustainable travel grants and loans are available** <*https://energysavingtrust.org.uk/travel/financial-support/grants-and-loans/*> **to support the** shift towards more sustainable transport, including e-bike and electric vehicle loans.

Were you aware of the LEZ support funds for small businesses and low-income households that are available?

Please select only one item

◯ Yes ◯ No ◯ Don't know/unsure

Were you aware of other sustainable travel grants and loans that are available?

Please select only one item

◯ Yes ◯ No ◯ Don't know/unsure

Exemptions

National exemptions will apply consistently across all of Scotland's LEZs to protect specific groups that cannot adapt to the changes. They include:

- Vehicles for disabled persons (including blue badge holders)
- Historic vehicles (vehicles over 30 years old, no longer in production and preserved in original state)
- Emergency vehicles
- Others as detailed in the 'Proposal to make an LEZ' document.

The Council has the power to issue local 'time-limited' (temporary) exemptions to the Zone in exceptional and unique circumstances. Exemptions can only apply for a period of up to one year, which may be renewed on an ad hoc basis.

No local exemptions are proposed to ensure air pollution that harms vulnerable groups, is reduced to safe and legal levels.

This approach considers the proposed 2-year grace period which treats everybody equally. National exemptions apply to groups identified who cannot adapt, and funds available to identified impacted groups to support adaptation.

Overall, to what extent are you in favour of this local exemption approach?

Please select only one item

◯ Strongly in favour ◯ Somewhat in favour ◯ Neither/nor/don't know ◯ Somewhat oppose ◯ Strongly oppose

Are there any other groups of people or type of vehicle you think should be exempt from the LEZ? Which and why?

Write in the group/vehicle type and your reason why here:

Write in the group/vehicle type and your reason why here:

Write in the group/vehicle type and your reason why here:

Adapting to the LEZ

If the LEZ implemented as proposed, what, if anything, would you do differently? Choose any that apply.

Please select all that apply

☐ Nothing ☐ Nothing – my vehicle complies ☐ Nothing – I don't travel through the city centre ☐ Upgrade my vehicle
☐ Give up my vehicle ☐ Join a car club ☐ Car share in a compliant vehicle ☐ Change my route
☐ Choose an alternative destination ☐ Walk more ☐ Cycle more ☐ Use public transport more (buses, tram, train)
☐ Use taxis / Private Hire cars more ☐ Use more park and ride (drive + public transport)
☐ Apply for LEZ support funds for small businesses/sole traders ☐ Apply for LEZ support funds for low income households businesses
☐ Apply for other sustainable travel grants ☐ Don't know
Do something else (write in)

About You

Lastly, we would like to ask a few questions about you to gain a picture of who has responded to the survey and help with the interpretation of the findings.

What age group are you in?

Please select only one item

◯ Under 16 ◯ 16-24 ◯ 25-34 ◯ 35-44 ◯ 45-54 ◯ 55-64 ◯ 65-74 ◯ 75+ ◯ Prefer not to say

What is your gender?

Please select only one item

◯ Female ◯ Male ◯ Non-binary ◯ Transgender ◯ Intersex ◯ Another identity description ◯ Prefer not to say

Do you have a physical or mental health condition or illness lasting or expected to last 12 months or more that limits your daily activities?

Please select only one item

◯ Yes ◯ No ◯ Prefer not to say

About You

Are you a blue badge holder?

Please select only one item

◯ Yes ◯ No ◯ Prefer not to say

If you own a vehicle, does it have any adaptations for disabled users?

Please select only one item

◯ Yes ◯ No ◯ Prefer not to say

CLEANER AIR FOR SCOTLAND – NATIONAL MODELLING FRAMEWORK

Low Emission Zone Evidence Report – Edinburgh

September 2021

Scope of Report

The Scottish Government's Cleaner Air for Scotland strategy (CAFS) introduced both the National Modelling Framework (NMF) and the National Low Emissions Framework (NLEF). The aim of the NMF is to provide evidence for Local Authorities to inform their decision-making process for implementing a Low Emission Zone (LEZ).

Throughout the development of the LEZ, SEPA have supported the City of Edinburgh Council (CEC) with the provision of detailed air quality modelling ('Air Quality Evidence Report' – Edinburgh), presentations and on-line visualisation tools to inform the selection of the LEZ options.

This report follows on from the previous SEPA report 'Emissions Analysis for Low Emission Zones' which focused on calculating tail-pipe emissions of Nitrogen Oxides (NO_X). This work represents the final stages of the NMF, providing modelled NO_2 concentrations to support the final phase of evidence to support the implementation of CEC's LEZ option. Traffic modelling was carried out by Jacobs, predicting changes in vehicle flows and fleet compositions. Traffic model outputs have been used to calculate pollutant emissions and air quality concentrations associated with the implementation of the LEZ options. Calculated changes in Particulate Matter (PM10) emissions are also presented.

Summary of Findings

This report presents the results of the air quality modelling work examining the potential changes in emissions and air quality concentrations for several LEZ options in Edinburgh. The report provides a detailed insight into the options that were tested and the potential outcomes in relation to changes in air quality concentrations associated with the LEZ implementation.

The introduction of an LEZ in Edinburgh city centre will significantly reduce NO_x and PM_{10} emissions from vehicles, which will result in lower pollutant concentrations within the LEZ. Although concentrations will be reduced, it does not necessarily mean that air quality compliance will be met at all locations, especially on busy roads and junctions.

Non-compliant traffic being re-routed around the LEZ boundary will result in increased emissions on these routes and subsequent increases in NO_2 and PM_{10} concentrations. In some cases, this *may* lead to new exceedances of the Air Quality Standards/Objectives.

Modelled LEZ scenarios were based on the 2019 vehicle fleet and, to represent a 'future scenario', the predicted 2023 vehicle fleet. The future scenario assume more vehicles are compliant, and as a

result, fewer vehicles are required to avoid the LEZ and re-route. This allows future air quality concentrations to be predicted.

Both LEZ options are the same, apart from the West side of the city centre. On the East side (e.g. Abbeyhill), small concentration increases are predicted, and these are unlikely to generate new exceedances. On the West side of the city centre, there are 2 options, the Large and the Small LEZ

Large City Centre LEZ

Based on the 2019 Edinburgh traffic fleet, it was found that if the Large LEZ is selected, significant traffic displacement was predicted at the West End. Air quality modelling predicted new exceedances (at kerbsides) on Palmerston Place and Chester Street, however it is shown that at building facades, the main area of concern was on Palmerston Place. On Lothian Road, air quality was predicted to be much improved (though not fully compliant).

Whilst the Large LEZ option may result in new model exceedances on Palmerston Place and Chester Street, these are likely to be short-term exceedances and may not actually occur as the fleet improves closer towards the predicted 2023 scenario when LEZ enforcement starts. The future modelling scenario predicts that the Large LEZ will resolve most model exceedances on Lothian Road.

Small City Centre LEZ

An alternative, Small LEZ option was investigated which curtails the LEZ boundary at Lothian Road. Although the Small LEZ option removes the risk of new exceedances on Palmerston Place and Chester Street, predicted exceedances on Lothian Road are likely to remain for much longer in the future. The Small LEZ will have a very limited impact on the West Side of the city.

City-wide Extended Urban LEZ

A City Wide, or Extended Urban Area LEZ was also investigated, which will not include private vehicles outside of the city centre and thus will only affect a very small proportion of traffic. In this case, air quality improvements will be small and, in these areas, air quality is mostly compliant. Also, the city centre LEZ approach will positively impact on the wider suburban areas. For example, buses which will be required to be compliant to travel through the city centre LEZ, will also emit less pollutants when they travel in suburban areas.

Key Points

- The Large LEZ may result in new exceedances on Palmerston Place and Chester Street, however modelling with the future fleet scenario predicts that these exceedances would not be present (predicted concentrations will actually lower than predicted concentrations in the 2019 ‘do nothing’ scenario). At the time of LEZ implementation and enforcement, it is expected that the risk of new exceedances on Palmerston Place will be low
- The Small LEZ option predicts model exceedances will remain on Lothian Road in the future scenario. At the time of LEZ implementation and enforcement, it is expected that exceedances would remain on Lothian Road

List of Abbreviations

AADT	Annual Average Daily Traffic
ADMS	Atmospheric Dispersion Modelling System
ADMS	Urban Atmospheric Dispersion Modelling System for Urban Environments
ANPR	Automatic Number Plate Recognition
AQMA	Air Quality Management Area
CAFS	Cleaner Air for Scotland
CERC	Cambridge Environmental Research Consultants
CEC	The City of Edinburgh Council
DEFRA	Department for Environment Food & Rural Affairs
DVLA	Driver and Vehicle Licensing Agency
EFTv8	Emissions Factors Toolkit v8.0
EFTv10	Emissions Factors Toolkit v10.1
EMIT	CERC Emissions Tool
HGV	Heavy Goods Vehicle
JTC	Junction Turn Counts
LAQM	Local Air Quality Management
LEZ	Low Emission Zone
LGV	Light Goods Vehicle
NLEF	National Low Emission Framework
NMF	National Modelling Framework
SEPA	Scottish Environment Protection Agency
SG	Scottish Government
TS	Transport Scotland

List of Chemical Abbreviations

NO_2	Nitrogen Dioxide
NO_x	Nitrogen Oxides
PM_{10}	Particulate Matter (less than 10µm in diameter)

List of Figures

List of Tables

Introduction

Background

As part of the National Modelling Framework (NMF) process within the Cleaner Air for Scotland (CAFS) strategy, the initial aim was to build an air quality model which was built using good quality data and which performed well against air quality monitoring data. This is outlined in more detail in the 'Air Quality Evidence Report – Edinburgh' report (SEPA, 2018).

Following on from this, the next step is to use the model to predict the impact of introducing a Low Emission Zone (LEZ). As part of this, further traffic surveys were carried out to identify if there were any significant changes in traffic flows and the fleet composition. CEC commissioned Jacobs consultants to carry out traffic modelling using the CEC traffic model to predict changes to traffic flows and fleet compliance rates in response to the introduction of an LEZ; this traffic model data was then used to run the Air Quality models to asses changes in pollutant concentrations.

This process is being carried out for the four Scottish cities implementing LEZs, though it should be noted that there are traffic model methodology differences being used for Edinburgh, when compared to the other cities.

SEPA Cyberattack

On Christmas Eve 2020, SEPA was subject to a serious and complex criminal cyber-attack that significantly impacted our internal systems and our Air Quality modelling capabilities.

As part of our recovery plan, SEPA implemented a phased rollout programme to restore critical services, re-establish critical communication systems to continue providing our priority regulatory, monitoring, flood forecasting and warning services. Our priority regulatory work programme included the delivery of our NMF obligations to assist in the final assessments of the LEZ options for each city.

Due to SEPAs inability to carry out Air Quality modelling, an alternative approach to allow for local authorities to report to committee in Spring 2021 was discussed at the LEZ Leadership Group meeting held on the 3rd of February 2021. The following steps were recommended by Scottish Government and SEPA on a way forward:

- Continuation of traffic modelling to define a small number of potential LEZ options or a preferred LEZ option for each city.

- SEPA to carry out emissions analysis on the traffic model outputs using the established NMF methodology. This will assess the impact of the LEZ by comparing traffic and emissions between a/base case and LEZ options.
- SEPA to continue detailed AQ modelling during the consultation phase over the summer of 2021 to support the local authorities in finalising the preferred LEZ scheme for Ministerial approval.

Since July 2021, SEPA's air modelling capacity has been restored and the modelling data for Edinburgh has been recovered successfully, though this has still resulted in a significant delay to work plans.

National Modelling Framework

Modelling work presented continues to follow the approach and methods outlined in previous reports (SEPA, 2018) to ensure a consistent approach in the air quality modelling. These include:

- Collect high quality and detailed traffic data at a similar resolution in each city. Process these in the same way.
- Build air quality models of each city using the same modelling software with identical methods and model settings, where appropriate.
- Use the same sources of data for input into the model, such as road layout, road width and building heights.
- Use appropriate meteorological and background emission data obtained from a common source.
- Combine traffic data with published emission information to derive consistent emission estimates.
- More accurate emission information, if available, will be applied in a consistent way.
- Ensure that observations and lessons learned from one city are applied in other cities.
- Process, visualise and report on modelling output in a consistent and informative way.

The model continues to be assessed against measurement data to ensure the model is performing well, which includes updating emission calculations based on Automatic Number Plate Recognition (ANPR) data to account for fleet turnover.

However, some differences in methodology between cities have arisen due to different approaches in traffic modelling for each city. CEC commissioned Jacobs to carry out traffic modelling (Jacobs, 2021) for Edinburgh using the CEC traffic model which is built in VISUM software (a strategic traffic model), whilst SYSTRA have been commissioned by Aberdeen, Dundee and Glasgow city councils to build and run traffic models using Paramics (a microsimulation traffic model). Strategic and microsimulation traffic models work in different ways. The VISUM Edinburgh model is run for three 2-hour periods (6 hours total), whereas Paramics is run for a 12-hour period. Due to this, there are some differences in how the traffic model data is processed into Annual Average Daily Traffic (AADT), which the air quality modelling software requires.

ADMS-Urban and EMIT continue to be the primary software packages used in the NMF work, although there has been an ADMS-version update (to version 5). The main difference is an update to the way ADMS deals with canyons. This may lead to some differences in predicted concentrations between ADMS model versions.

Scope of Air Quality Modelling

Based on the SEPA Evidence report (SEPA, 2018), 3 LEZ options were considered by CEC: (Jacobs, September 2021):

- Large City Centre zone (Figure 1).
- Small City Centre zone (Figure 2).
- Extended Urban Area zone (Figure 3). For this case, a city centre zone would apply to all vehicles, the Extended Urban Area zone would apply to all vehicles (except cars).

The existing air quality model domain was considered adequate for this piece of work as it covers the city centre in detail, where local displacement of traffic will need to be understood as part of the city centre LEZ, and all AQMA's. Jacobs have advised that traffic modelling for the Extended Urban Area option is technically challenging, so this has not been carried out (Jacobs, September 2021).

The LEZ rules were also considered when planning this stage of the modelling work. As LEZ regulations for petrol cars are different from all other vehicles (Table 1), because NO_x emissions from petrol vehicles are much lower than diesel vehicles, cars were split into petrol/diesel for the traffic modelling.

Table 1: LEZ rules for Vehicle Categories

Vehicle category	Compliant	Non-Compliant
Cars (Petrol)	Euro 4, 5, 6	Euro 3 or earlier
All Vehicles (except Petrol Cars)	Euro 6, Electric	Euro 5 or earlier

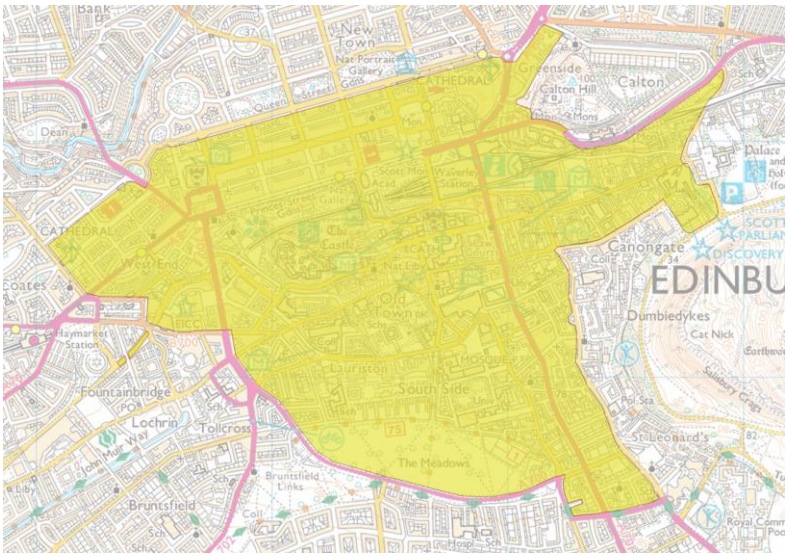


Figure 1: Large City Centre Low Emission Zone option

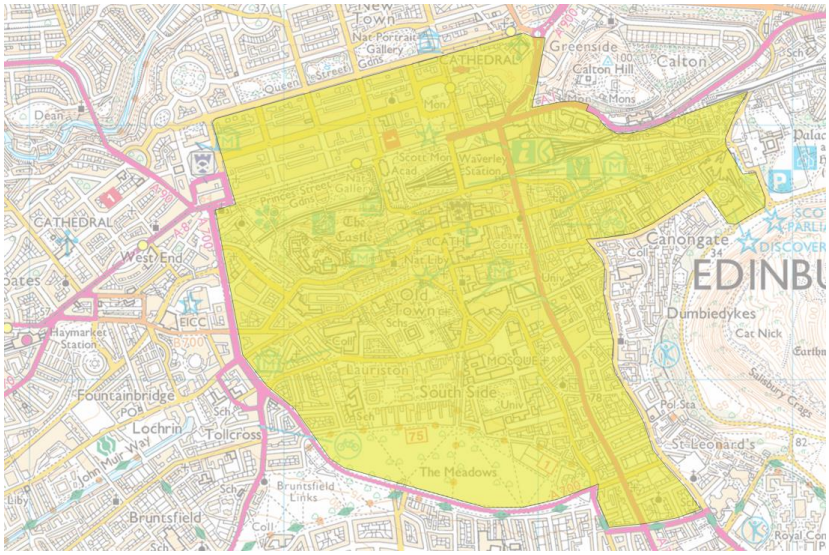


Figure 2: Small City Centre Low Emission Zone option

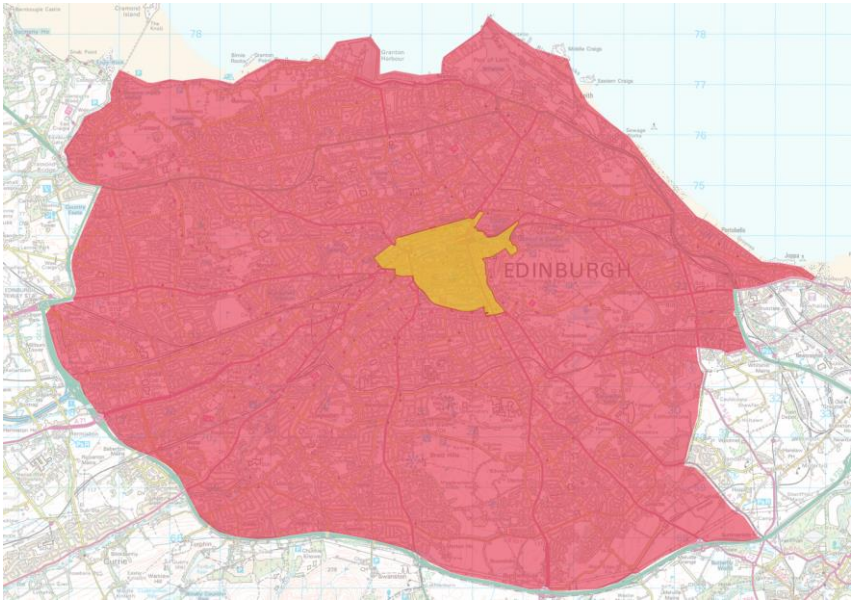


Figure 3: Extended Urban (Red) and Large City Centre (Yellow) Low Emission Zone option

Modelling Methodology

Air Quality Modelling

The Aberdeen Pilot Project Technical report (SEPA, 2017) and Edinburgh Air Quality Evidence Report (SEPA, 2018) outlines the air quality modelling methodology. This remains the same unless outlined in more detail below. Most methodological changes are due to the use of modelled traffic data to examine the effect on introducing an LEZ.

Traffic Data – 2019 Survey

Accurate traffic data is important for the traffic and air modelling to be robust, as discussed in previous reports (SEPA, 2017; SEPA, 2018). A further detailed traffic survey was carried out in June 2019 for a comparison to made with the November 2016 survey. This included 4 additional Junction Turn Counts (JTC's) and 2 new ANPR locations. This survey is a snapshot on a particular day and roadworks and road closures on a particular day can affect traffic flows. It should be noted that this survey was carried out before tram works started. Without continuous traffic monitoring it is difficult to detect daily and seasonal trends, but it has been considered that this data is high quality and robust as discussed previously (SEPA, 2018).

Traffic Flows

This survey found that across all roads, total traffic volumes had slightly decreased (~1.5%), though there was variability across individual roads. Roads where total traffic flows had increased in the 2019 survey by more than 10% are shown in Figure 4, though some of these roads had been closed during the 2016 survey (e.g. Viewforth, George Street (West)).
However, there are also roads where traffic flows were found to be lower in the 2019 survey; Figure *5* shows roads where total traffic flow was more than 10% lower.

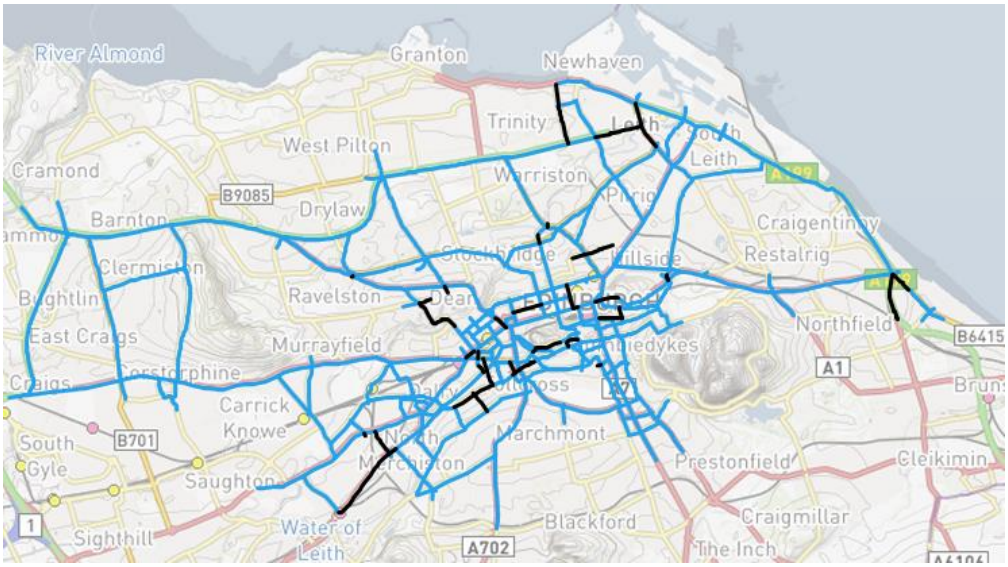


Figure 4: Roads highlighted in black where 2019 traffic flows were more than 10% higher than 2016 survey

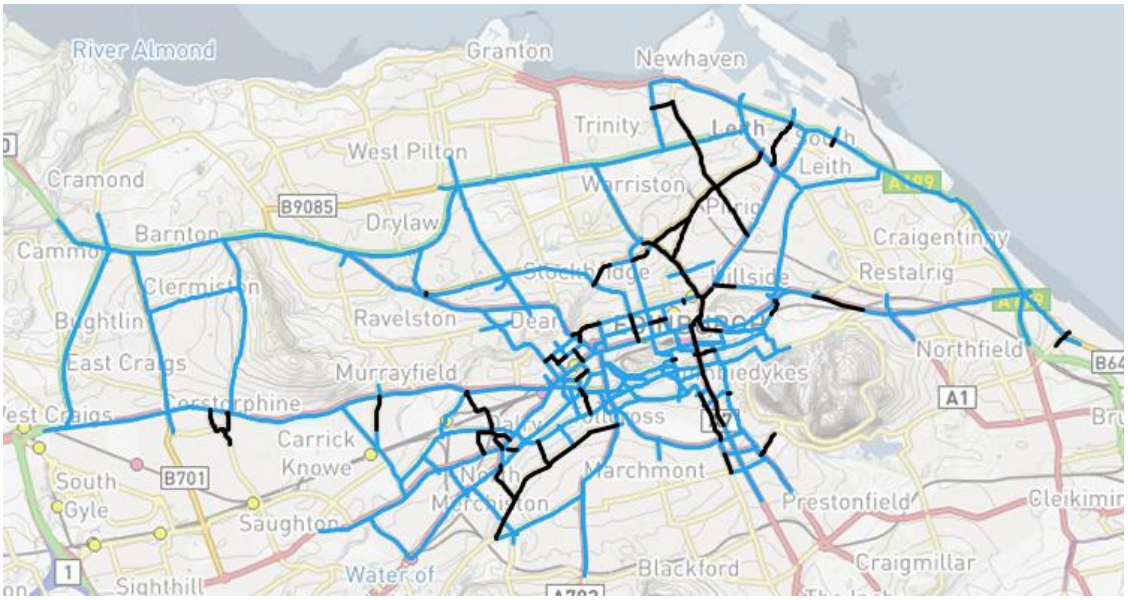


Figure 5: Roads highlighted in black where 2019 traffic flows were more than 10% lower than 2016 survey

Overall, car traffic was ~5% lower, Rigid HGV's were ~29% lower and Artic HGV's were ~7% lower. In contrast, LGV traffic was found to be ~1% higher.

Taxi traffic was found to be 58% higher (particularly on the route between the city centre and the airport where there was a 134% increase). Bus/Coach traffic was 13% higher (particularly in the city centre). This is likely to be due to seasonal factors due to an increase in summer tourist traffic.

In the 2019 survey, it was decided to categorise public service buses and coaches separately. There is a good understanding of public service bus routes and the vehicles deployed on each route, but less so on tourist and other coaches. The survey shows that most coaches are in the city

centre and west side of the city (Figure 6), whereas large bus flows (Figure 7) are found on most key routes into the city (except Queensferry Road).

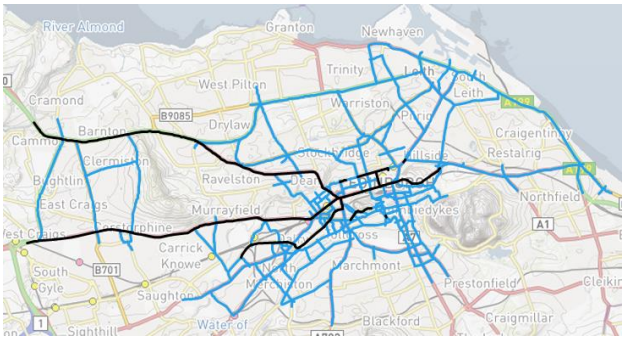


Figure 6: Routes where number of Coaches exceeds 200

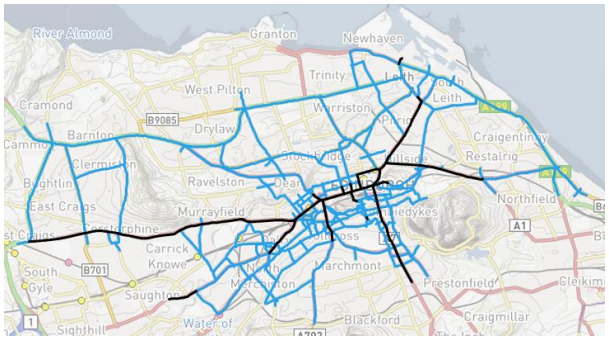


Figure 7: Routes where number of Buses exceeds 1000

It was decided that, as the LEZ traffic modelling will focus primarily on Cars, LGVs and HGVs, and that traffic flows for these vehicles are generally higher in the 2016 survey, the 2016 traffic data would continue to be used for the LEZ modelling scenarios. This was also preferred as the Edinburgh traffic model was populated with 2016 traffic data and updating with 2019 traffic data would be time consuming and have little benefit.

ANPR and Fleet Composition

ANPR survey data provides details on individual vehicles from the DVLA database such as vehicle type, weight, engine size, fuel type for each vehicle observed. The DVLA also provide an estimate of the vehicle Euro class, based on the vehicle age. This information can be processed to derive a fleet composition table (i.e. the percentage of vehicles with a specific Euro class), which is required to calculate the pollutant emission rates for each road link in EMIT (the CERC emission database tool). The data from the ANPR survey is used in preference to the National fleet composition data which is published by the Department for Transport, and does not accurately represent the local fleet.

The 2019 ANPR survey provided updated data on the Edinburgh specific vehicle fleet composition and can be compared to the 2016 ANPR survey.

It is expected that over time, the fleet will become less polluting as older vehicles are scrapped and new vehicles enter the fleet. This can be seen in Table 2 where the percentage of cars which are Euro 5 and earlier is declining throughout whilst the percentage of Euro 6/6c/6d vehicles are gradually increasing in each survey.

Car fuel type is also an important factor, especially as diesel cars emit about 10 times more NO_x than petrol cars. This shows the percentage of diesel cars in the fleet is declining whilst other fuel types are increasing in share (Table 3).

Table 2: Percentage of Car Euro Class in 3 ANPR surveys (2016 and 2019)

Car Class	% of Car Fleet in 2016 ANPR	% of Car Fleet in 2019 ANPR
Pre-Euro 1	0.07%	0.00%
Euro 1	0.08%	0.13%
Euro 2	0.77%	0.55%
Euro 3	7.5%	6.6%
Euro 4	26.7%	19.1%
Euro 5	42.6%	32.2%
Euro 6	22.1%	32.1%
Euro 6c	0%	9.0%
Euro 6d	0%	0%
Electric*	0%	0.42%
*Note: These are electric only cars and do not include Hybrid Electric Cars		

Table 3: Percentage of Car Fuel Types in 3 ANPR surveys (2016 and 2019)

Car Fuel Type	% of Car Fleet in 2016 ANPR	% of Car Fleet in 2019 ANPR
Diesel	45.0%	44.6%
Petrol	53.4%	52.1%
Hybrid Electric	1.4%	2.8%
Electric	0.17%	0.42%
Other fuel types	0.10%	0.06%

Bus fleets need to be accurately represented in the model and it has been shown (SEPA, 2018) that there are large differences between the Euro Class estimated by the DVLA (provided in the ANPR data) and the actual Euro Class for each bus (which has kindly been provided by the main local bus operators). Therefore, in this analysis we have used the local bus operator Euro Class data in the analysis to represent the bus fleet as accurately as possible (this accounts for over 90% of buses in detected in the ANPR survey; where buses belong to a company other than the main local operators, the DVLA estimated Euro class has been used). The percentage of Euro VI buses has been increasing since the first survey in 2016 from 24% to 51% (Table 4).

Table 4: Percentage of Bus Euro Class in 3 ANPR surveys (2016 and 2019)

Bus Class	% of Bus Fleet in 2016 ANPR	% of Bus Fleet in 2019 ANPR
Euro I	0.02%	0%
Euro II	0.09%	0.16%
Euro III	20.7%	9.3%
Euro IV	5.4%	0.7%
Euro V	49.8%	37.8%
Euro VI	24.1%	51.4%
Electric*	0.00%	0.7%
***Note: These are electric only Buses and Coaches and do not include Hybrid Electrics Buses**		

The average fleet composition from ANPR survey sites has been used to represent the entire city, however, it should be noted that there is some fleet variation across the city which will introduce some uncertainties into the modelling on specific roads.

The Emission Factor Toolkit version 8 (EfTv8) emission factors within the EMIT tool have been used to calculate NO_x emission rates in this analysis. This was the most up to date version of NO_x emission factors in EMIT that was available at the time of modelling; EfT version 10 (EfTv10) has been used to calculate Particulate emissions.

LEZ Traffic Modelling Methodology

The traffic modelling was carried out by Jacobs and is described in more detail in the report 'Edinburgh Low Emissions Zone, Revised Fleet Composition, Transport Modelling Report' (Jacobs, 2021).

In summary, the CEC Edinburgh traffic model was used which uses the VISUM software package. It is important to note that this is a different approach to the other Scottish cities and has resulted in a divergence in methodologies (prior to SEPA receiving the data). The traffic model assumes that all traffic entering, leaving, or travelling within the LEZ is 'Compliant'. Traffic which is 'Non-Compliant' is forced to divert around the LEZ. The traffic may then assume that 'Compliant' traffic may re-route through the LEZ (taking advantage of capacity on roads that would have previously been taken by 'Non-Compliant' traffic.

The traffic model includes all vehicle sectors; however it is only considering the displacement of Cars, LGV's and HGV's. It is assumed bus routes will remain unchanged. Regulations affecting taxi compliance is being carried out separately through the CEC taxi licencing scheme.

The traffic model was run for 2 fleet scenarios:

- **2019:** Using 2019 ANPR data and 2016 traffic flows.
- **2023 'future':** Using 2023 forecast National Fleet predictions and 2016 traffic flows.

Note that whilst the 2023 National fleet prediction is used, predicting future fleet compositions is very uncertain. These predictions are known to be optimistic and in reality is likely to occur later than 2023. COVID has added another level of uncertainty, and fleet prediction data does not account for this. Therefore, this scenario should be considered as a 'future scenario'.

Car fuel split

Due to different LEZ rules for petrol and diesel cars, they are treated separately within the traffic model and subsequent data analysis.

To enable the traffic model to be run with cars split into petrol/diesel, the car flows were split accordingly. It was assumed that, for traffic modelling purposes, all cars were either petrol or diesel.

The EfTv8 National Fleet predicts that the diesel/petrol fuel ratio in 2019 and 2023 are similar, however the 2019 ANPR data shows that for Edinburgh, the proportion of diesel cars is lower than the National Fleet (Table 5). In the absence of other data, the assumption was made to use the 2019 ANPR petrol/diesel split for 2023 'future' scenario traffic modelling.

Table 5: Percentage of Cars which are Petrol or Diesel

	ANPR	2019 National Fleet (EfTv8)	2023 National Fleet (EfTv8)
Diesel	44%	47.7%	47.8%
Petrol	56%	52.3%	52.2%

Within the traffic model, Cars, LGV's and HGV's were split into 2 categories (compliant and non-compliant) using the values in Table 6. The 2019 values are derived from the 2019 ANPR survey, the 2023 'future scenario' values are derived from the National Fleet predictions. Note that predicting future fleet compositions is uncertain, these predictions are likely to be optimistic and are likely to occur later than 2023.

Table 6: Compliant and Non-compliant percentages used in traffic modelling

	2019		2023 'future' scenario	
	Compliant	Non-Compliant	Compliant	Non-Compliant
Cars (Diesel)	42.6%	57.4%	78.1%	21.9%
Cars (Petrol)	88.4%	11.6%	99.6%	0.4%
LGV's	41.2%	58.8%	81.6%	18.4%
HGV's	64.4%	25.6%	91.6%	8.4%
Note: 2019 values derived from ANPR. 2023 values derived from EfTv8 National Fleet predictions				

Traffic Model Scenarios

The Edinburgh traffic model was run by Jacobs for 4 scenarios for each of the 2 fleet scenarios (2019 and 2023 'future') described above:

1. Base
2. Large City Centre LEZ
3. Large City Centre LEZ (including City Centre Transformation changes)
4. Small City Centre LEZ (including City Centre Transformation changes)

City Centre Transformation (CCT) changes include measures such as closure of Bank Street and parts of George Street to general traffic.

The traffic model was run for these 4 scenarios for each of the fleet scenarios, over 3 time periods:

- AM: 07:00 – 09:00
- Interpeak: 10:00 -12:00
- PM: 16:00-18:00

The road links in the traffic model are mostly smaller than those in the air quality model. To maintain consistency and to keep road links in the air quality model the same as in previous modelling, the maximum traffic flow from any of the traffic model road links which represents an air quality model road link was used for the air quality modelling. For example, if 4 traffic model road links represented 1 air quality model road link, the maximum flow from any of the 4 traffic model road links was used.

Traffic flows for each of the 4 vehicle classes in Table 6, split into compliant/non-compliant, for each LEZ and fleet scenario and for each time-period was provided by Jacobs to SEPA for the air quality modelling.

Calculating Emission Inputs for Air Quality Modelling

The CERC database tool EMIT has been used to calculate the emission rates for each toolkit as discussed in the SEPA 2018 Evidence report (SEPA, 2018). However, based on advice from CERC, a slightly different approach is required to calculate emissions from the traffic model output Emissions are generated in EMIT for each of the 4 compliant/fuel categories (using same method as before) and then summed to obtain total emissions for input into ADMS.

Traffic Flow

To calculate emission rates, 24-hour traffic flows (known as Annual Average Daily Traffic, or AADT) are required, which is not provided by the traffic model. Previously, AADT traffic flows were calculated from the Junction Turn Counts (JTC) data, by deriving 12 to 24 hour conversion factors based on data from 24-hour JTC sites (SEPA, 2018).

In this case, new conversion factors were derived to convert traffic model output from 6-hours (07:00-09:00; 10:00-12:00; 16:00-18:00) to 24 hours (AADT) for all road links in the air quality model.

For technical reasons in the traffic model set up, absolute traffic flows from the traffic model could not be used in the air quality modelling. Based on advice from Jacobs, ratios of traffic flows between each of the LEZ traffic model scenarios and the Base traffic model scenario were calculated for each vehicle sector. These ratios were then applied to the 2016 traffic survey data to generate traffic flows for each of the 8 compliant/fuel categories (4 traffic categories in Table 6 split into compliant/non-compliant).
For example, if the traffic model predicts that the LGV flow increases by 5% on a road when an LEZ is introduced, in the air quality model, the LGV flow from the 2016 traffic survey increased by 5% is used.

There are some minor roads not in the traffic model that are in the air quality model, and for completeness in these cases, the 2016 traffic survey flow data was used.

Bus and Taxi traffic flows from the 2016 Survey were used in the air quality model (as this is the bus and taxi data which is included in the traffic model), as 2 options:

1. Buses and Taxis fully compliant within the relevant LEZ only; outside the LEZ, Buses and Taxis were split into compliant/non-compliant flows at the same ratio as the 2019 ANPR survey, or 2023 National Fleet composition data

2. Buses and Taxis were fully compliant across the whole city.

It was assumed that all non-car traffic is 100% diesel (ANPR data shows that only a very small proportion of LGV's are electric or petrol).

This results in having 4 traffic flow tables: Diesel Compliant, Diesel Non-compliant, Petrol Compliant, Petrol Non-Compliant.

Fleet Composition

Fleet composition tables were generated to represent each of the 4 traffic flow tables above. These tables represent the percentage of each of vehicle category in a specific Euro class.

Diesel Compliant:

- All Vehicles (excluding cars): All Non-Compliant categories were set to 0% and compliant categories (including electric) were weighted accordingly to sum to 100%.
- Cars: All Petrol and Diesel Non-compliant set to 0%. Compliant diesel car categories weighted to sum to 100%.

Diesel Non-Compliant:

- All Vehicles (excluding cars): All Compliant categories were set to 0% and Non-Compliant categories were weighted accordingly to sum to 100%.
- Cars: All Petrol and Diesel Compliant set to 0%. Non-Compliant diesel car categories weighted to sum to 100%.

Petrol Compliant:

- All Vehicles (excluding cars): All categories set to a zero emissions category.
- Cars: All Petrol Non-Compliant and Diesel set to 0%. Petrol compliant categories weighted to sum to 100%.

Petrol Non-Compliant:

- All Vehicles (excluding cars): All categories set to a zero emissions category.
- Cars: All Petrol Compliant and Diesel set to 0%. Petrol Non-compliant categories weighted to sum to 100%.

This process was carried out for the 2019 ANPR fleet and the 2023 National Fleet predictions to match the compliance percentages used in the traffic modelling.

Emissions Calculations

Finally, the fleet composition and traffic flow data generated using the above methodology was used in the EMIT database tool to generate NO_x, NO_2 and PM_{10} emission rates for each road link. These emission rates were analysed to provide information on emission rate changes for each road and were also used in ADMS-Urban to predict NO_x and NO_2 concentrations.

Air Quality Modelling Methodology

To maintain consistency with previous modelling, the methodology and key inputs outlined were unchanged and the justifications are described in the Air Quality Evidence Report **(SEPA, 2018)**. Some key points are outlined below:

- Meteorology: 2016 data from the Edinburgh Gogarbank Met Office weather station was used as described in the Air Quality Evidence Report to maintain consistency. Additional model runs were also carried out using 2019 data as a sensitivity test, which was selected as it is the same year as the ANPR survey data used in the traffic modelling.
- Background data: Urban Background data from the St Leonards monitoring station was used for 2016 and 2019 to match with the relevant meteorology scenario.
- Street Geometry (road widths and canyons): It is noted that since the modelling was carried out for the Air Quality Evidence report **(SEPA, 2018)**, there have been several changes in the street geometry.
    - Road Widths: Some road widths have changed due to the CEC Spaces for People programme, in response to the COVID-19 pandemic. These are still classed as temporary (though some may become permanent). Road layouts in other locations have been modified (e.g. Picardy Place roundabout).
    - Street Canyon characteristics: Over time in every city, new buildings appear, and others are removed. Most of the time, this will not result in significant changes to the street canyon characteristics, however, some changes are significant (e.g. St James centre replacement and new development at Haymarket). These changes, if large, may affect the dispersion characteristics in the nearby vicinity, and this may change the predicted pollutant concentrations.
    - To maintain consistency with previous modelling and remove a variable when analysing model predictions, it was decided not to update the road widths or canyon characteristics in the model at this stage, but to review this and update the model at a later date. It should be noted that the modifications to the air quality model (e.g. model upgrades) can change the way the model interprets current street geometry data, which suggests that modelling uncertainties may have a larger impact on model predictions than changes to street geometry data files.

Traffic Model Output

Detailed results of the traffic modelling can be found in the Edinburgh Low Emission Zone modelling transport report (Jacobs, February 2021), however, a summary is useful here. The aim of the traffic model is to predict traffic flow changes in response to the introduction of an LEZ. This is likely to displace non-compliant traffic around the LEZ boundary.

Within the LEZ's, traffic flows are expected to be lower and all vehicles are expected to be compliant.

On the West side of the city centre, the Large LEZ is predicted to lead to displacement of non-compliant traffic onto Palmerston Place and Chester Street. In the 2019 fleet scenario, traffic flows are expected to increase significantly, and compliance rates will fall to very low levels which is important for calculating emissions. In the 2023 'future' fleet scenario, traffic displacement is not as significant and compliance rates are higher. This is an indication that as more compliant vehicles enter the fleet, traffic displacement of non-compliant vehicles around the LEZ is reduced.

If the Small LEZ is selected, no significant displacement of traffic is predicted onto Palmerston Place and Chester Street. However, as there is little difference in predicted flows between the 2019 and 2023 'future' fleet scenarios in the West End, it seems that traffic flow changes are due to CCT changes (e.g. Bank Street closure) and not the LEZ. Therefore, the Small LEZ may only have a very small impact on improving air quality in the West End of the city centre and improvements will be due to fleet turnover.

On the East side of the LEZ (e.g Abbeyhill), the LEZ boundary is the same for both options. Increased traffic flows are predicted, and compliance rates will fall slightly due to non-compliant traffic being diverted, but it is not as significant as on the west side of the city centre.

More information can be found in Appendix 2.

Emissions

Emissions were calculated using the EMIT tool and were analysed and reported in detail in the Edinburgh Emissions Analysis for Low Emissions Zone report (SEPA, 2021), where the changes in emission rates for each road link were detailed. In this report, more detail is presented on source attribution of NO_x emissions.

NO_x Emissions Source Attribution

Within Large LEZ

Within the Large LEZ for the 2019 and 2023 'future' scenario, the introduction of the LEZ is predicted to reduce emissions from the bus sector significantly (in 2019 this would fall from 42.4% to 12.5% of all emissions). As a result, the percentage contribution from other sectors (especially diesel cars, LGV's and Taxis) will increase (Figure 8), with diesel car emissions becoming the main contributor to NO_x emissions.

Total emissions from all vehicle sectors within the Large LEZ will fall significantly, (~30 tonnes per year), based on 2019 values (Figure 9). The most significant emissions reduction is expected from the bus sector (accounting for 20 tonnes of NO_x removed within the LEZ). Although it appears that there is a large percentage reduction for HGV's, total emissions from this sector are low (Figure 10, Figure 11).

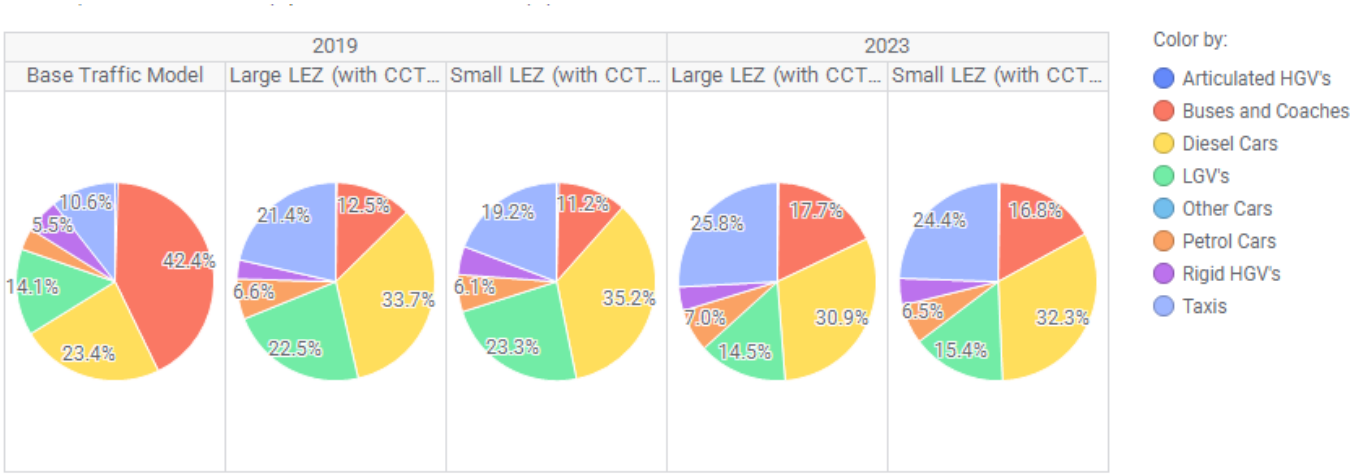


Figure 8: Percentage NO_x emissions from each vehicle sector for different LEZ scenarios (for the Large LEZ zone area)

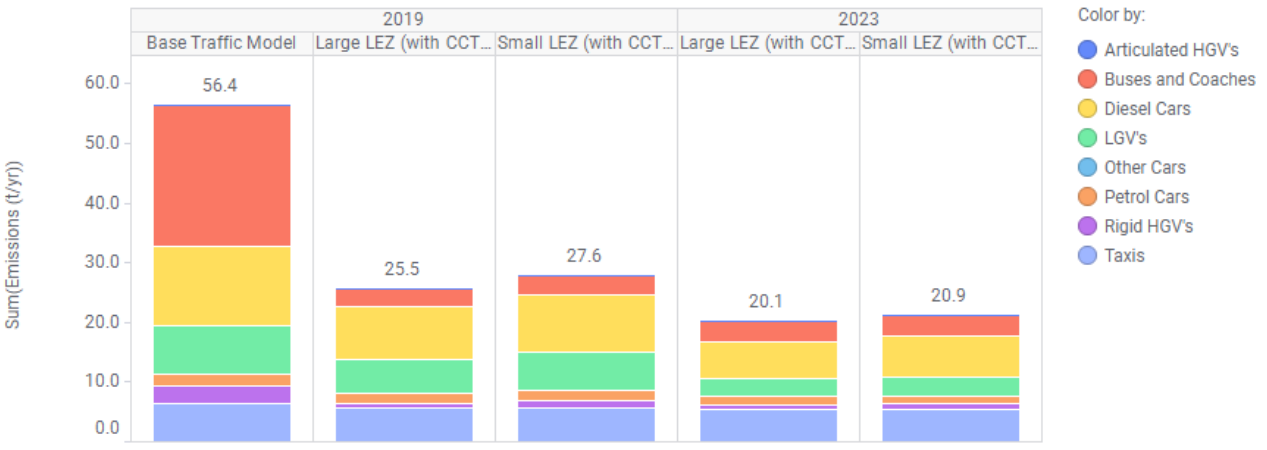


Figure 9: NO_x emissions (tonnes/yr) source attribution for different LEZ scenarios (for the Large LEZ zone)

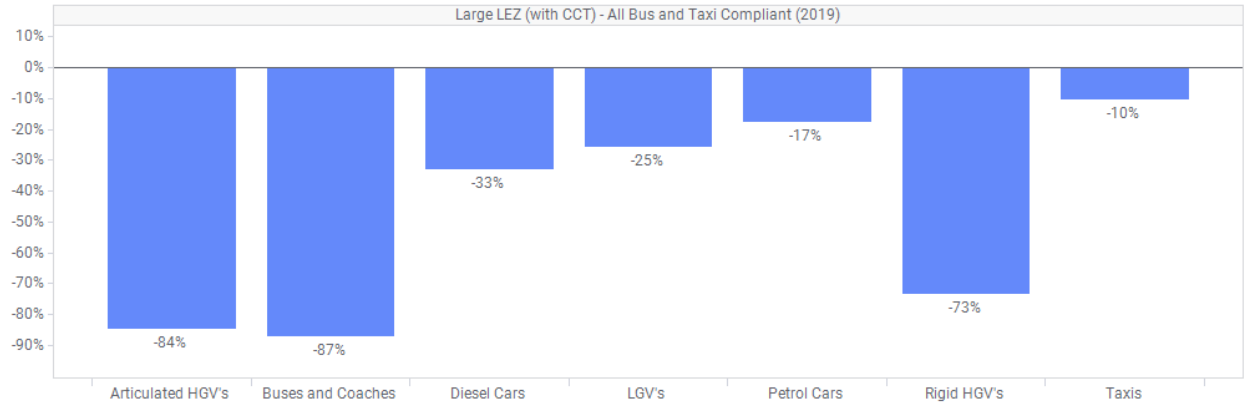


Figure 10: Percentage Change in Emissions from each vehicle sector for the Large LEZ compared to Base 2019 scenario

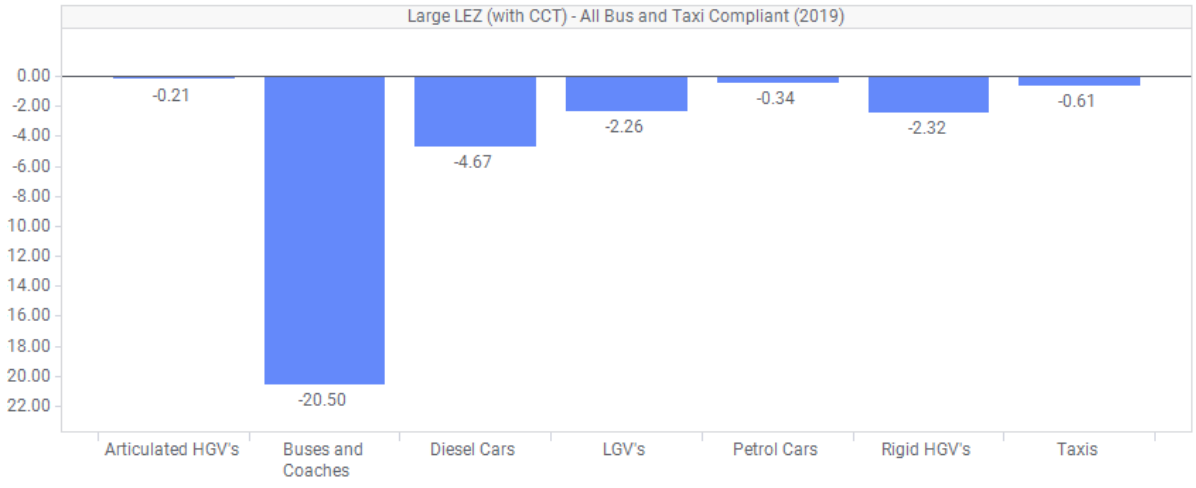


Figure 11: Emissions (tonnes/yr) change from each vehicle sector for Large LEZ compared to Base 2019 scenario

Within the LEZ – North Bridge/South Bridge/Clerk Street corridor

Within the LEZ, there will be differences on a street-by-street basis and the North Bridge/South Bridge/ Clerk Street corridor is a good example (Figure 12). In this case the LEZ will apply in both Large or Small LEZ options, so only the Large LEZ results have been shown.

In the 2019 Base scenario, over 50% NO_x emissions were attributed to the bus sector, but this would fall to 16% if an LEZ was in place. In the future, as emissions from other vehicle sectors decline, the relative contribution from buses will steadily increase, however total emissions will continue to fall (Figure 13, Figure 14).

Significant reductions are predicted from all vehicle sectors, except for petrol cars, which are predicted to increase emissions by 4% or 0.01 tonnes on this route (Figure 15, Figure 16). This is very small compared to reductions in other vehicle sectors and is due to an increase of petrol cars (which are mostly compliant) travelling through the LEZ, whilst most other sectors are forced to re-route around the LEZ.

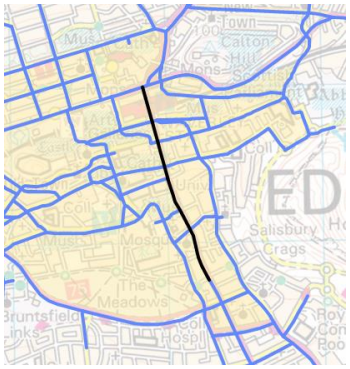


Figure 12: North Bridge/South Bridge/Clerk Street corridor

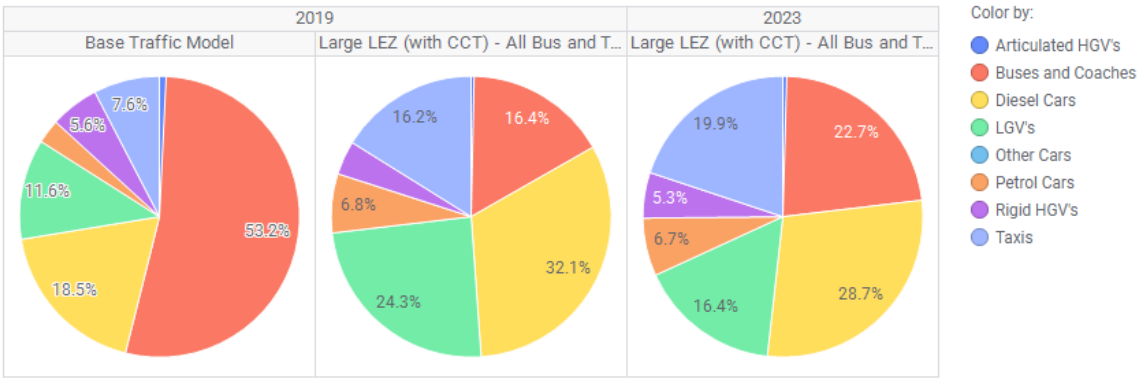


Figure 13: Percentage NO_x emissions from each vehicle sector for North Bridge/South Bridge/Clerk Street

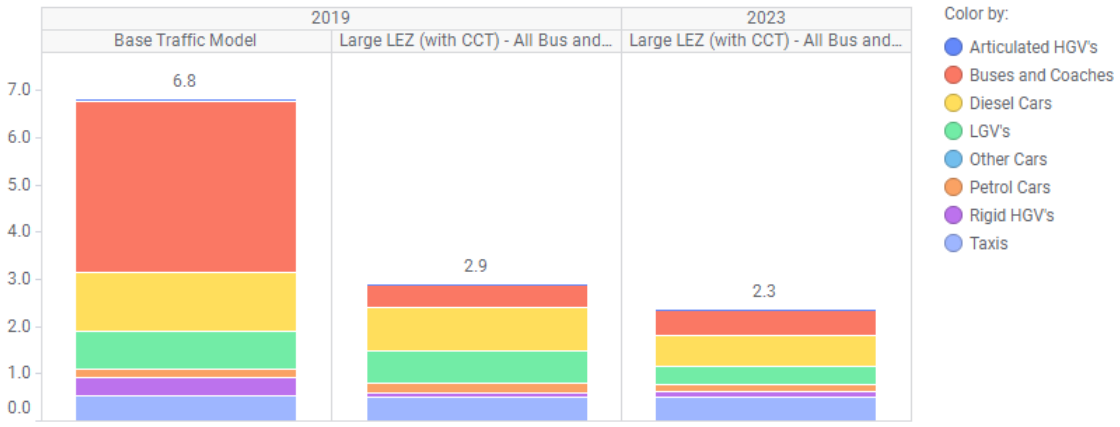


Figure 14: NO_x emissions (tonnes/yr) source attribution for each LEZ scenario for North Bridge/South Bridge/Clerk Street

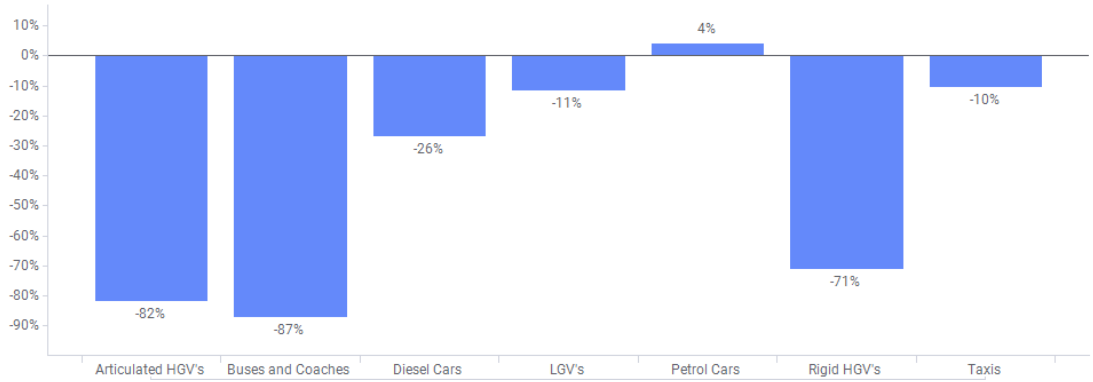


Figure 15: Percentage Change in Emissions from each vehicle sector for North Bridge/South Bridge/Clerk Street (LEZ 2019) compared to Base 2019 scenario

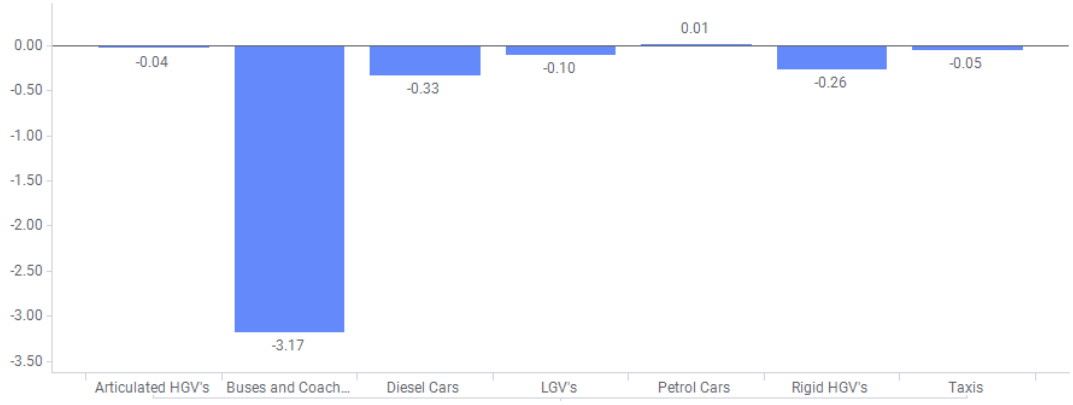


Figure 16: Emissions (tonnes/yr) change from each vehicle sector for North Bridge/South Bridge/Clerk Street (LEZ 2019) compared to Base 2019 scenario

LEZ Boundary - Palmerston Place/Chester Street

On the Palmerston Place and Chester Street corridor (highlighted in Figure 17), increases in traffic flow is predicted if the Large LEZ is implemented. The source attribution of NO_x emissions from each vehicle sector does not change significantly for each of the 2019 or 2023 'future' LEZ scenarios. Diesel cars (45-51%) and LGV's (26-29%) are the biggest contributors, with Petrol cars contributing around 5-7% (Figure 18).

However, as discussed in the Emissions Report (SEPA, 2021), the Large LEZ will result in actual emissions almost doubling (based on the 2019 fleet), though this is expected to decline as the fleet progresses toward the 2023 predicted scenario (Figure 19).

When looking at each vehicle sector, the largest emissions increases are from the Diesel Car, LGV and Rigid HGV sector (Figure 20, Figure 21). It is important to note that if the Small LEZ option was selected, total emissions will also increase by a small amount due to increased emissions from cars and LGVs (Figure 19, Figure 20, Figure 21).

Figure 17: Palmerston Place/Chester Street

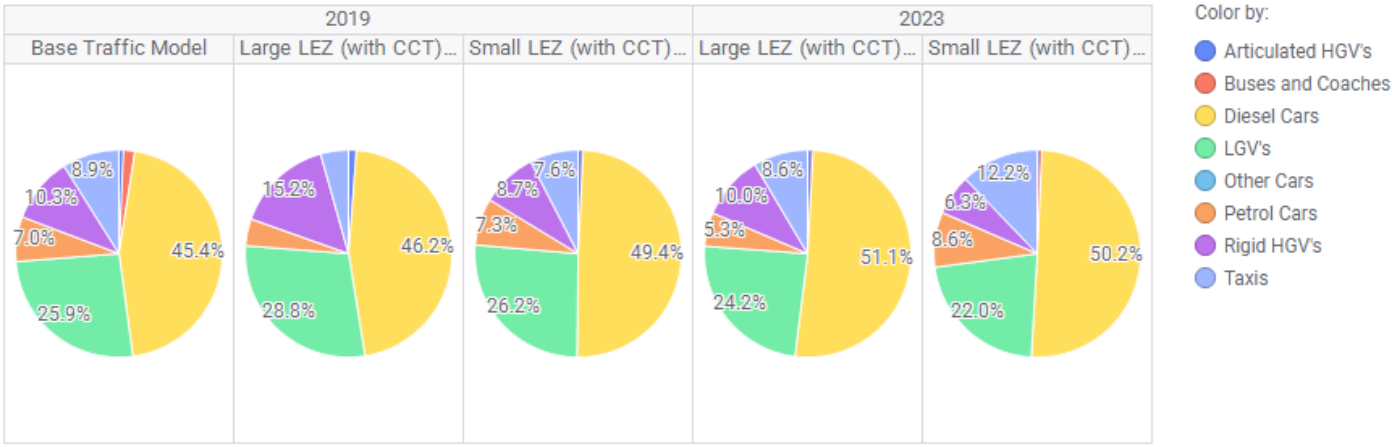


Figure 18: Percentage of Total NO_x emissions for each vehicle sector for Palmerston Place/Chester Street

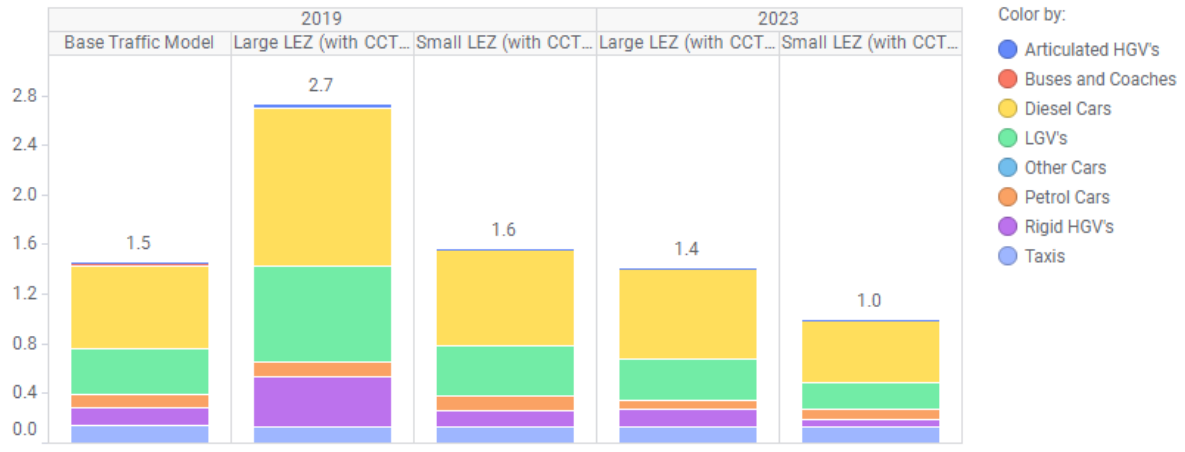


Figure 19: NO_x emissions (tonnes/yr) source attribution for each LEZ scenario for Palmerston Place/Chester Street

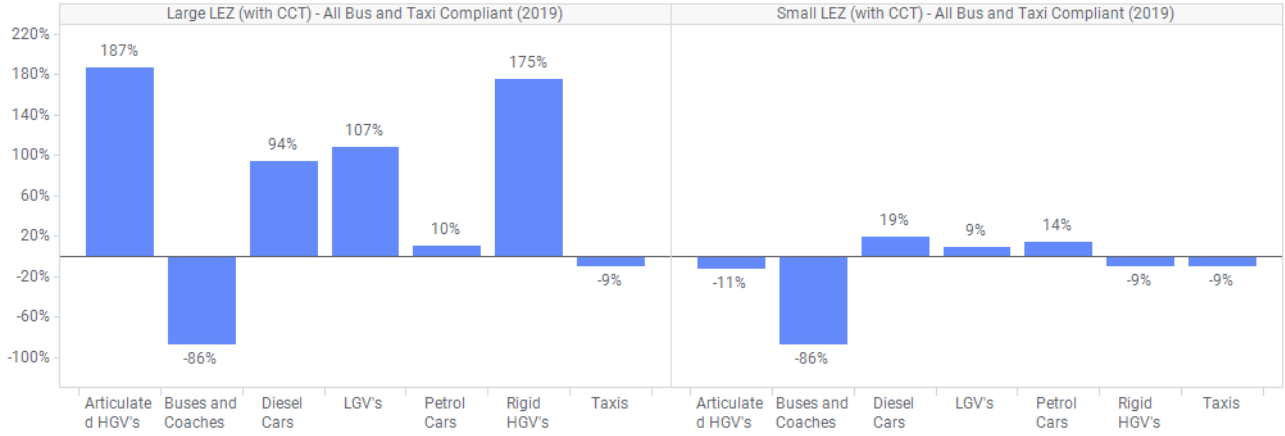


Figure 20: Percentage Change in Emissions (Large and Small LEZ 2019 options) from each vehicle sector for Palmerston Place/Chester Street compared to Base 2019 scenario

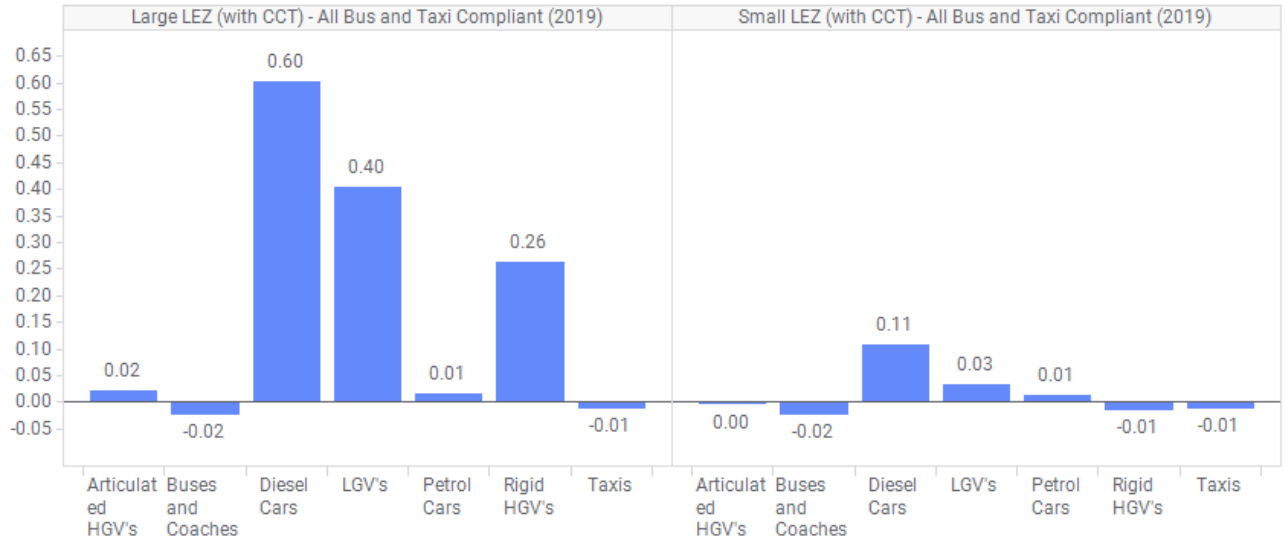


Figure 21: Emissions (tonnes/yr) change (Large and Small LEZ options 2019) from each vehicle sector for Palmerston Place/Chester Street compared to Base 2019 scenario

Lothian Road

Lothian Road is one of the most polluted streets in Edinburgh, and depending on the choice of City Centre LEZ, will either sit inside the Large LEZ, or on the boundary of the Small LEZ. The section of Lothian Road being considered is highlighted in Figure 22.
Bus emissions will decline, regardless of the choice of Small or Large LEZ, as the bus sector will be fully compliant. In both Large and Small LEZ options, Diesel Cars and LGV's will be the biggest contributor of NO_x emissions (Figure 23).

Total NO_x emissions are predicted to decline in the 2019 fleet scenario by 27% if the Small LEZ is selected and by 50% if the Large LEZ is selected (Figure 24). This is expected to decline further in the 'future' 2023 scenario as cleaner vehicles join the fleet.

When looking at individual vehicle sectors (Figure 25, Figure 26), for the Large LEZ option, emissions are reduced from all vehicle sectors. However, if the Small LEZ is selected, although total emissions are lower than the Base scenario (due to large emission reductions from buses), emissions from Cars, HGV's and LGV's will increase, which will delay air quality improvements on this road.

Figure 22: Section of Lothian Road in Analysis

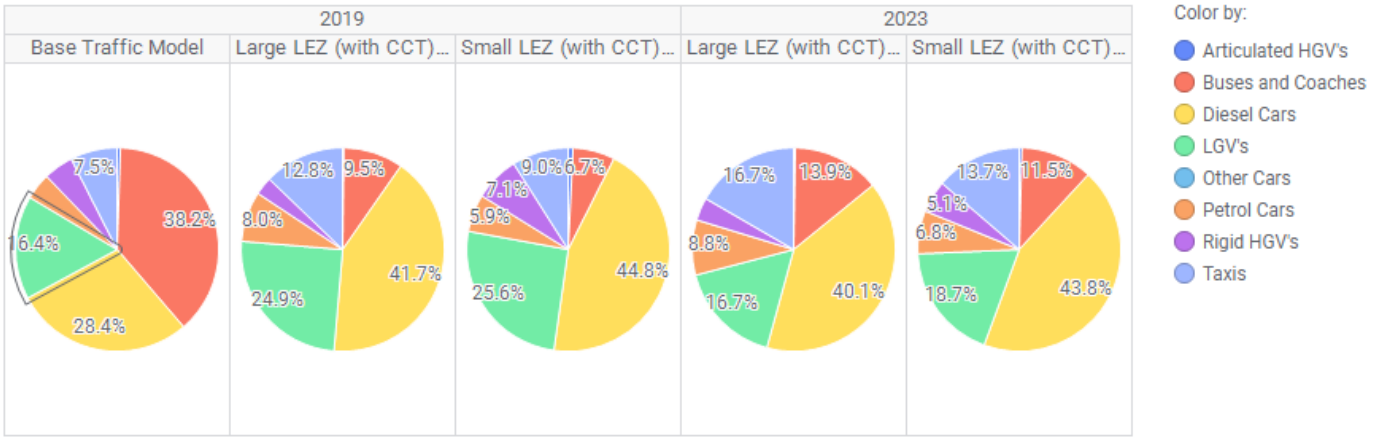


Figure 23: Percentage of Total NO_x emissions for each vehicle sector for Lothian Road

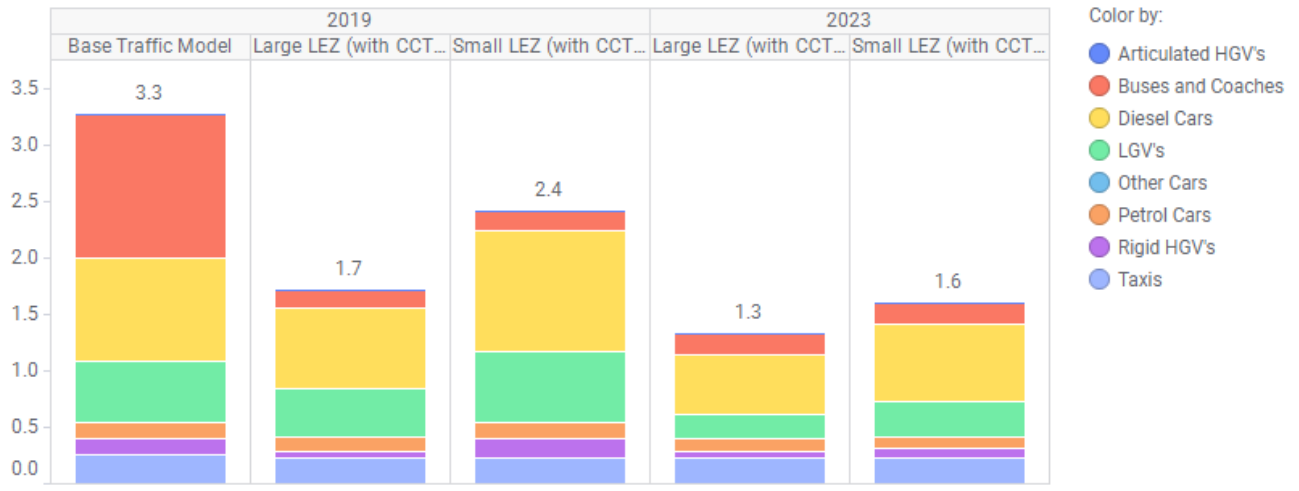


Figure 24: NO_x emissions (tonnes/yr) source attribution for each LEZ scenario for Lothian Road

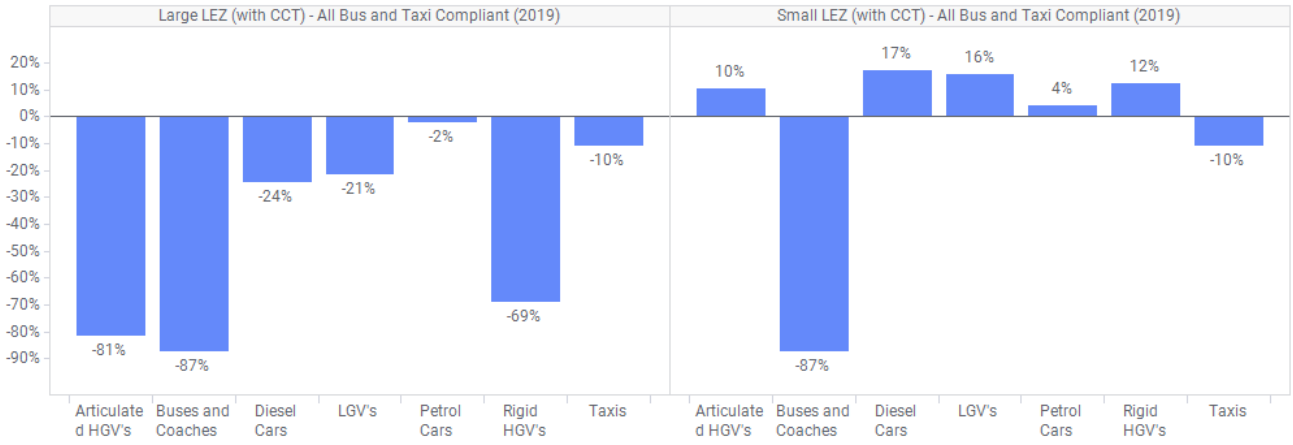


Figure 25: Percentage Change in Emissions (Large and Small LEZ options 2019) from each vehicle sector for Lothian Road compared to Base 2019 scenario

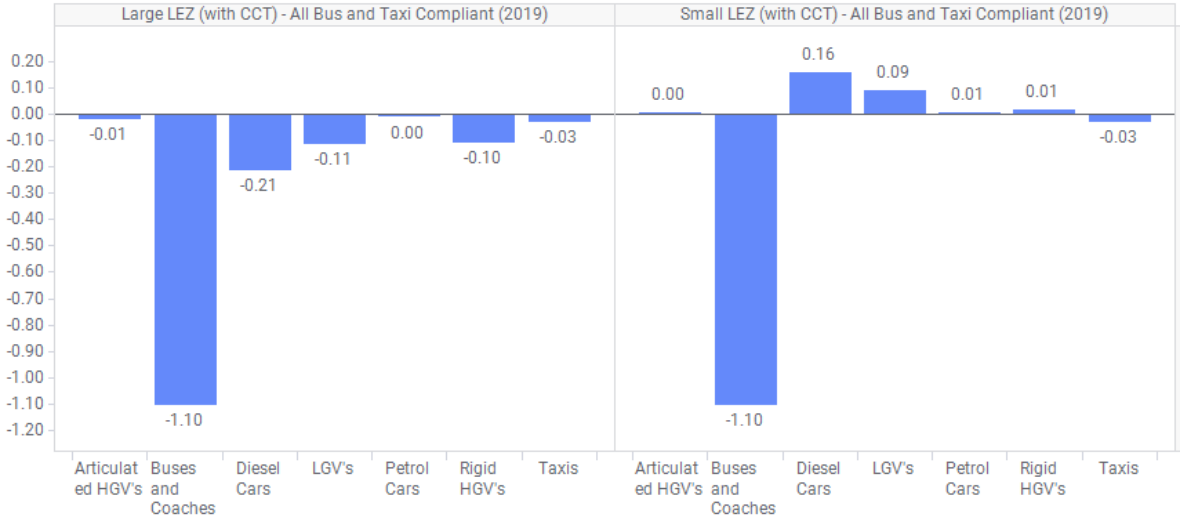


Figure 26: Emissions (tonnes/yr) change (Large and Small LEZ options 2019) from each vehicle sector for Lothian Road compared to Base 2019 scenario

Particulate Emissions

PM_{10} emissions have been calculated for the Large LEZ option only using the EMIT tool (EfTv10 emission factors); this is because at the time of analysis, the Large LEZ option had been selected as the preferred option. It should be noted that the PM_{10} emissions shown represent tailpipe emissions and do not include other particulate emission sources such as road wear, tyre wear, brake wear and resuspension of particulates. It is estimated that PM_{10} tailpipe emissions make up approximately 27% of total emissions (UK Air Quality Expert Group, 2019), though large uncertainties exist.

The introduction of the LEZ is predicted to significantly reduce particulate emissions within the Large LEZ and on surrounding streets. There are, however, some streets where PM_{10} emissions increase (Figure 27), based on the 2019 fleet. On Palmerston Place/Chester Street, it is predicted that in the 2019 scenario, tailpipe PM_{10} emissions would double, however it should be noted that despite these increases, emissions would still be relatively lower than on other roads and, like NO_2, emissions will decline over time as the fleet improves (Figure 28, Figure 29, Figure 30).

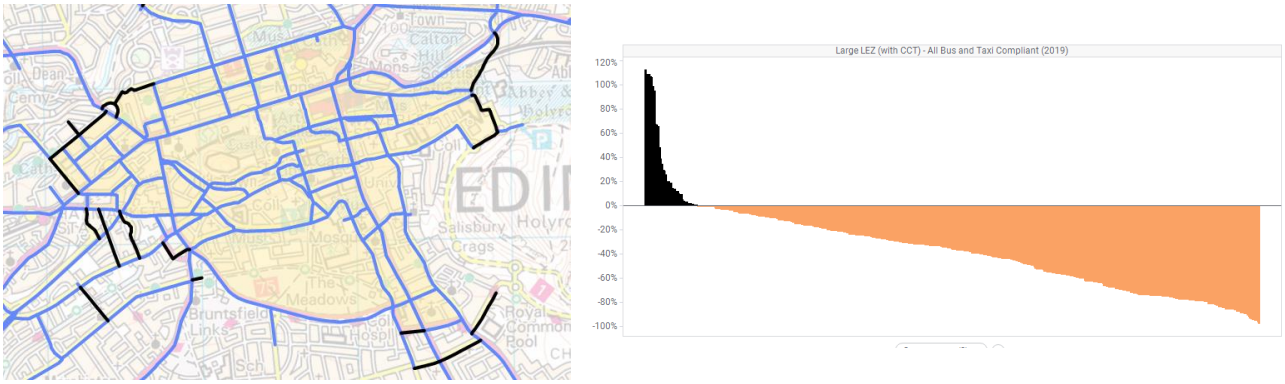


Figure 27: Relative changes to PM_{10} emissions when comparing the Base 2019 scenario and Large LEZ 2019 option. Street highlighted are those where an increase in emissions is predicted

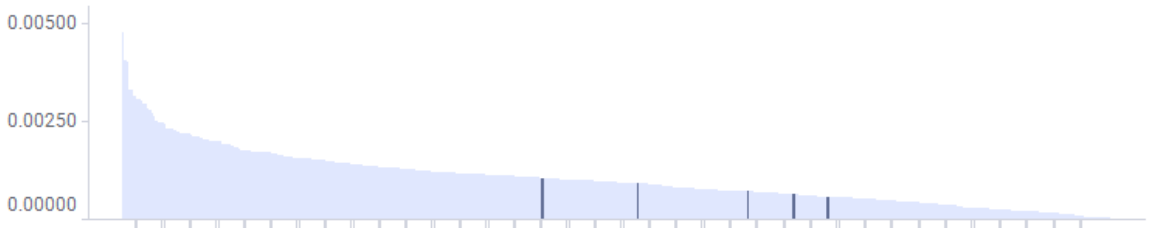


Figure 28: Base 2019 PM_{10} emission rates (g/km/s) for all roads, with Palmerston Place and Chester Street highlighted

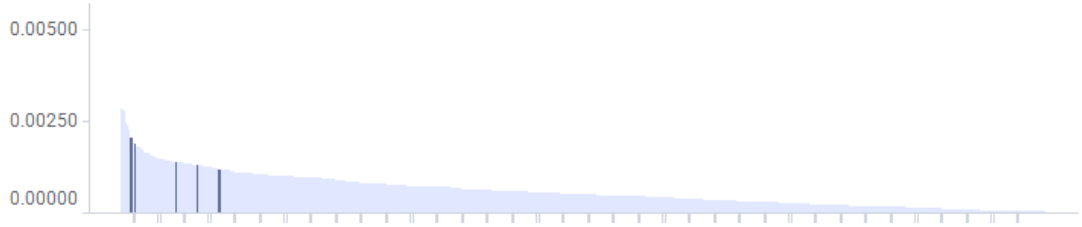


Figure 29: Large LEZ 2019 PM_{10} emission rates (g/km/s) for all roads, with Palmerston Place and Chester Street highlighted

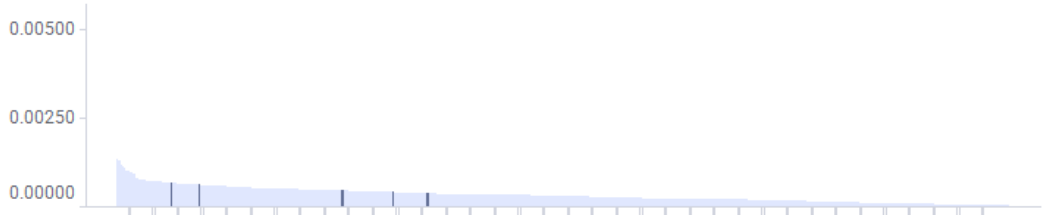


Figure 30: Large LEZ 'future' 2023 PM_{10} emission rates (g/km/s) for all roads, with Palmerston Place and Chester Street highlighted

In the 'future' 2023 scenario, it is predicted that tailpipe PM_{10} emissions rates on all roads will fall below Base 2019 (Figure 31) and Base 2023 (Figure 32) emissions. On Palmerston Place and Chester Street, emissions are expected decline by 33-36% compared to Base 2019 scenario and 15% lower when compared to Base 2023 levels, so despite an initial increase, this is expected to be short term.

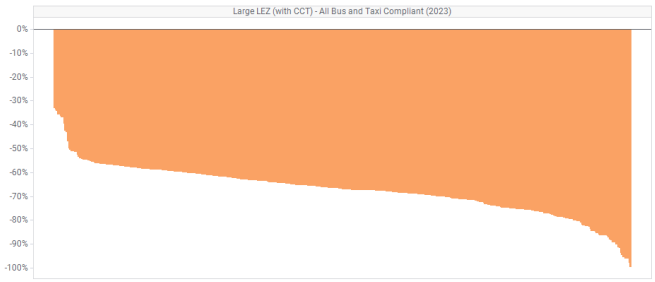


Figure 31: Relative changes to particulate emissions when comparing the Base 2019 scenario and Large LEZ 2023 'future' option for each street

Figure 32: Relative changes to particulate emissions when comparing the Base 2023 scenario and Large LEZ 2023 'future' option for each street

Particulate Emissions Source Attribution

All Model Roads

For the Base 2019 scenario, it is predicted that diesel cars (38%) and buses (26%) are the largest sources of PM_{10} from tailpipe emissions (Figure 33).

The introduction of the Large LEZ is predicted to reduce tailpipe PM_{10} emissions significantly. In the 2019 scenario, it is predicted that 1.5 tonnes (Figure 34) will be removed (mostly attributed to the bus sector), which is a reduction of 34%. In the 'future' 2023 scenario, emissions will be 2.9 tonnes lower (Figure 34), which is a reduction of 66%, as emissions from the non-bus sector fall.

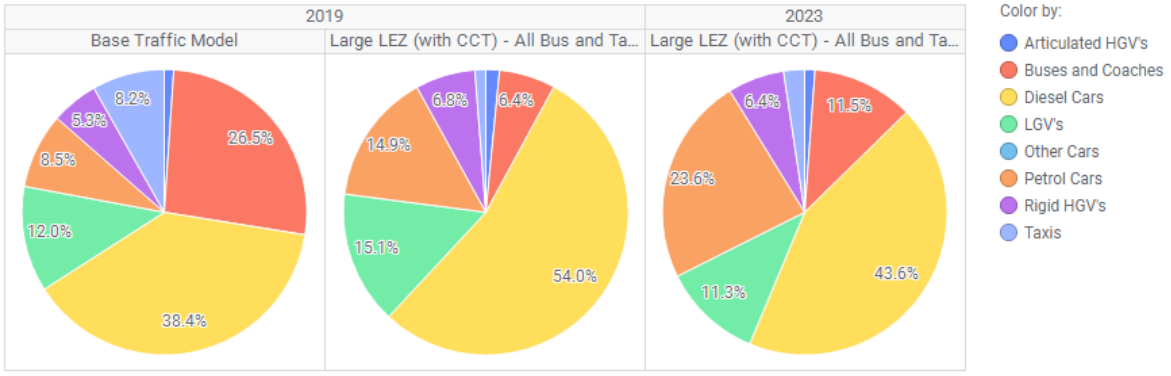


Figure 33: PM_{10} relative source attribution for Base 2019 and Large LEZ (2019 and 2023) for all model roads

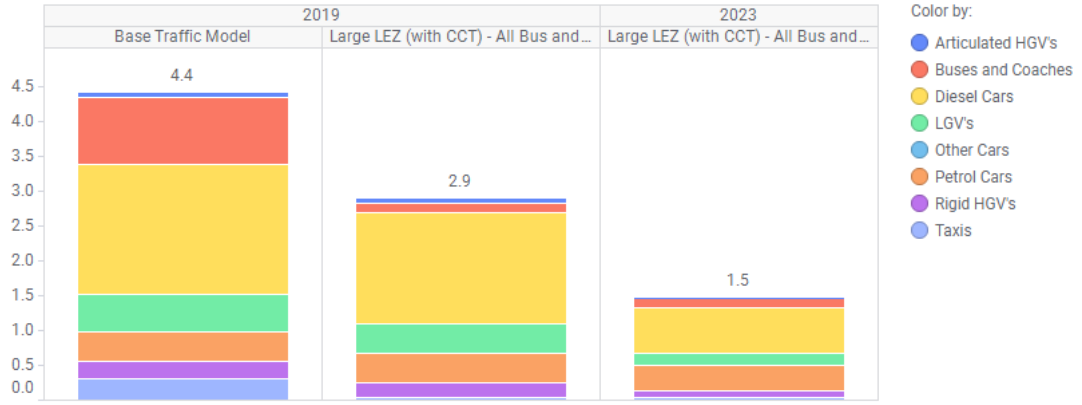


Figure 34: PM_{10} source attribution (tonnes/yr) for Base 2019 and Large LEZ (2019 and 2023) for all model roads

Within the LEZ

The source attribution analysis for PM_{10} emissions (tailpipe only) shows that in the Base scenario 41% of emissions are from the bus sector, but this would fall to 28% with the introduction of either LEZ. The relative contribution from Diesel cars increases slightly (25 to 30%), and there is a large relative increase from petrol cars, from 5% to 25% (Figure 35). Total PM_{10} emissions (from tailpipe) will fall by 85% from 0.7 tonnes to 0.1 tonnes per year (Figure 36).

Within each vehicle sector, significant reductions in emissions are predicted for all vehicle sectors, with the exception of petrol cars, which will stay the same (Figure 37, Figure 38), which is why petrol cars become a relatively larger emission sector with an LEZ.

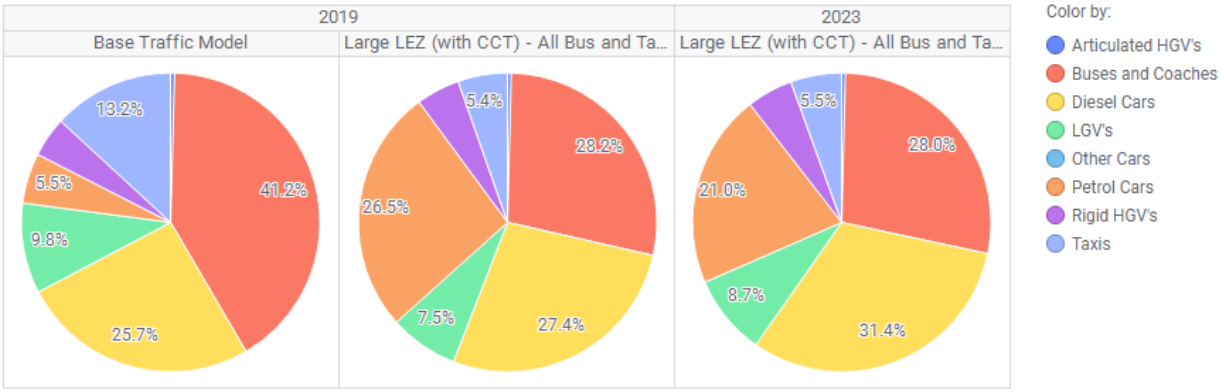


Figure 35: PM_{10} relative source attribution for Base 2019 and Large LEZ (2019 and 2023) within the Large LEZ area

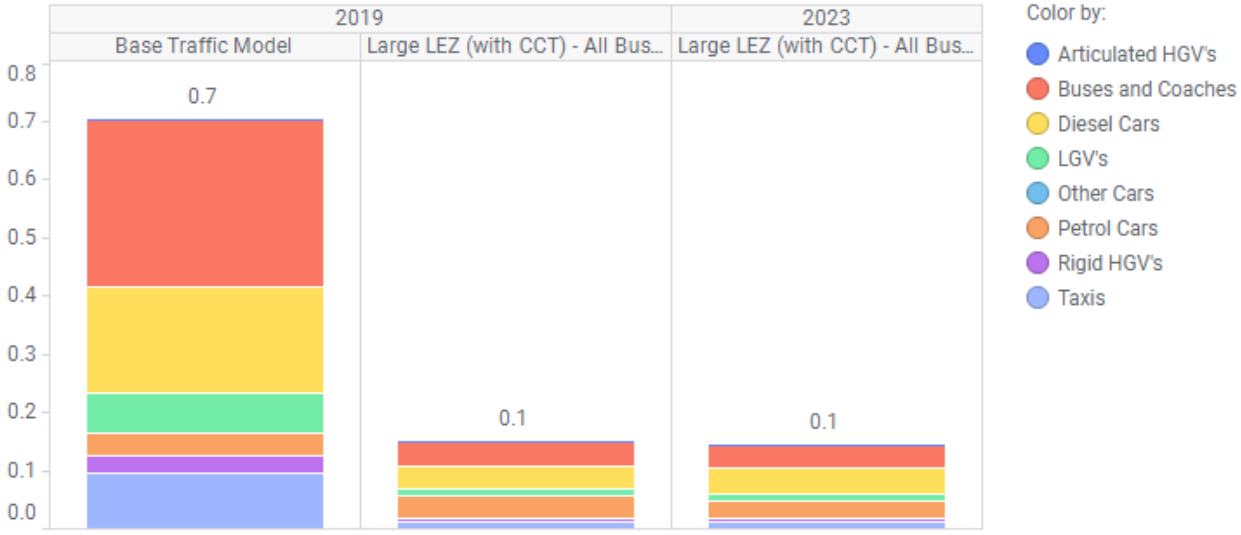


Figure 36: PM_{10} source attribution (tonnes/yr) for Base 2019 and Large LEZ (2019 and 2023) for within the Large LEZ area

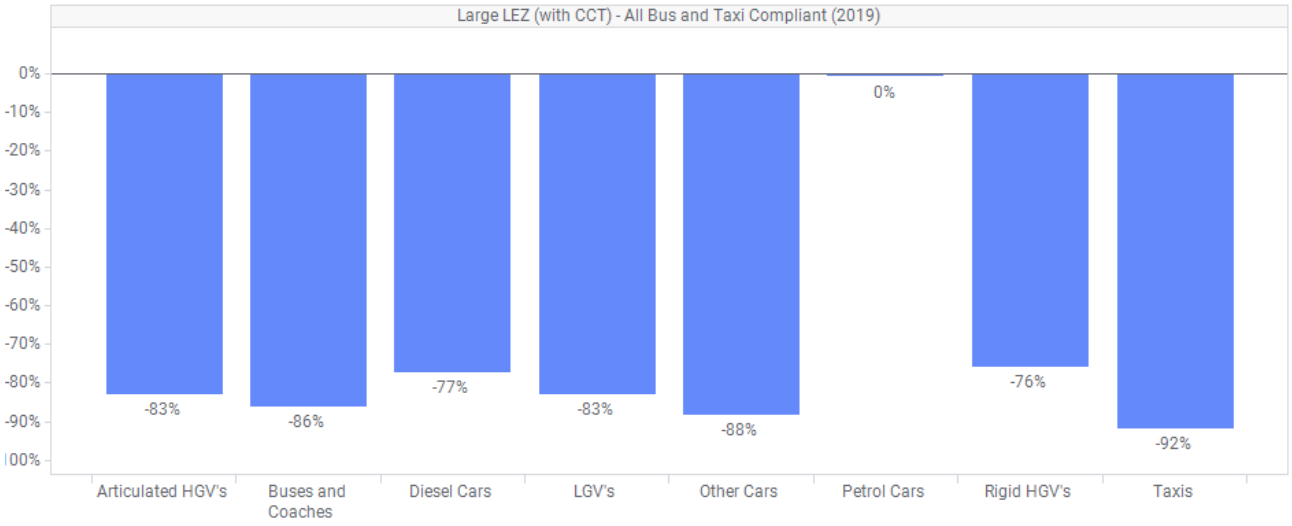


Figure 37: Percentage Change in PM_{10} Emissions (Large LEZ option) from each vehicle sector for within the LEZ when compared to Base 2019 scenario

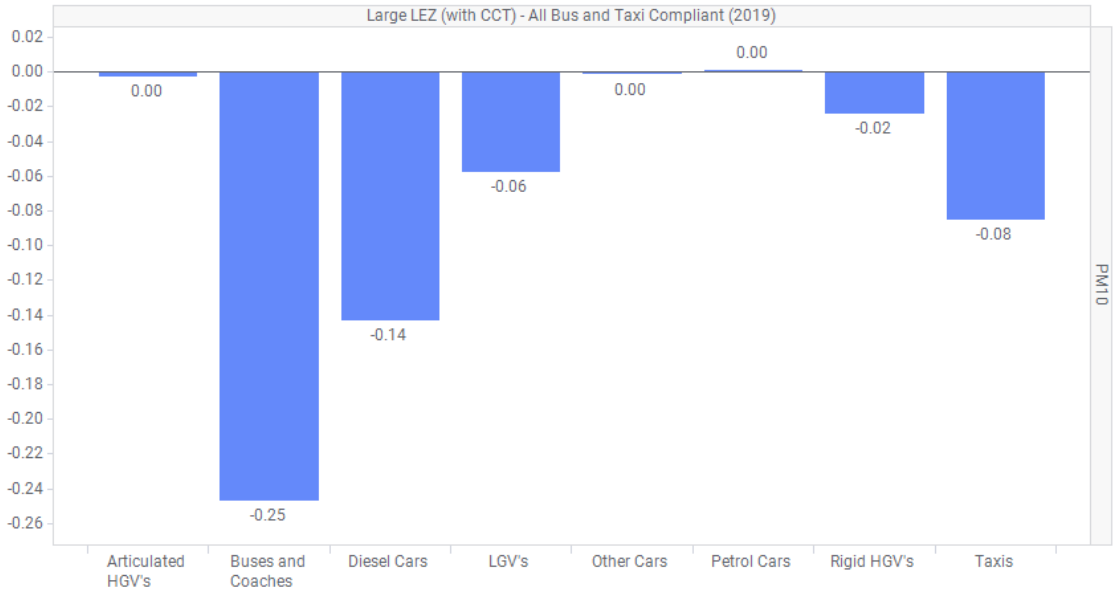


Figure 38: Changes in PM_{10} Emissions (Large LEZ option) from each vehicle sector for within the LEZ when compared to Base 2019 scenario (tonnes/yr)

Palmerston Place/Chester Street

Like NO_x emissions, in the Large LEZ 2019 fleet scenario there is a predicted to be an increase in tailpipe PM_{10} emissions which is predominantly attributed to increases in LGV and Diesel Car traffic, which has been displaced by the LEZ (Figure 39). However, this increase is likely to be short term as total emissions are predicted fall below Base 2019 levels in the 'future' 2023 scenario, though Diesel cars will still be responsible for over 50% of emissions (Figure 39, Figure 40).

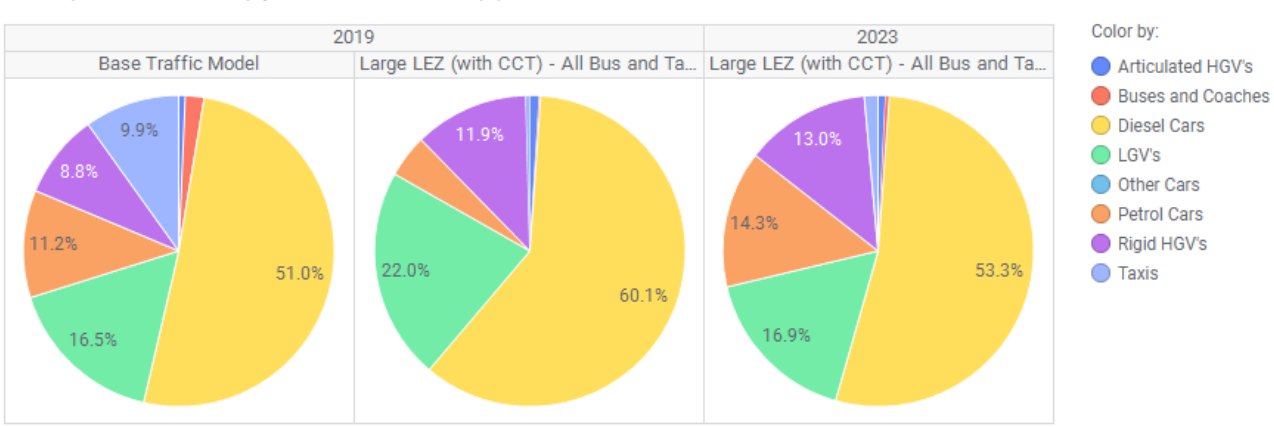


Figure 39: PM_{10} relative source attribution for Base 2019 and Large LEZ (2019 and 2023) for Palmerston Place/Chester Street

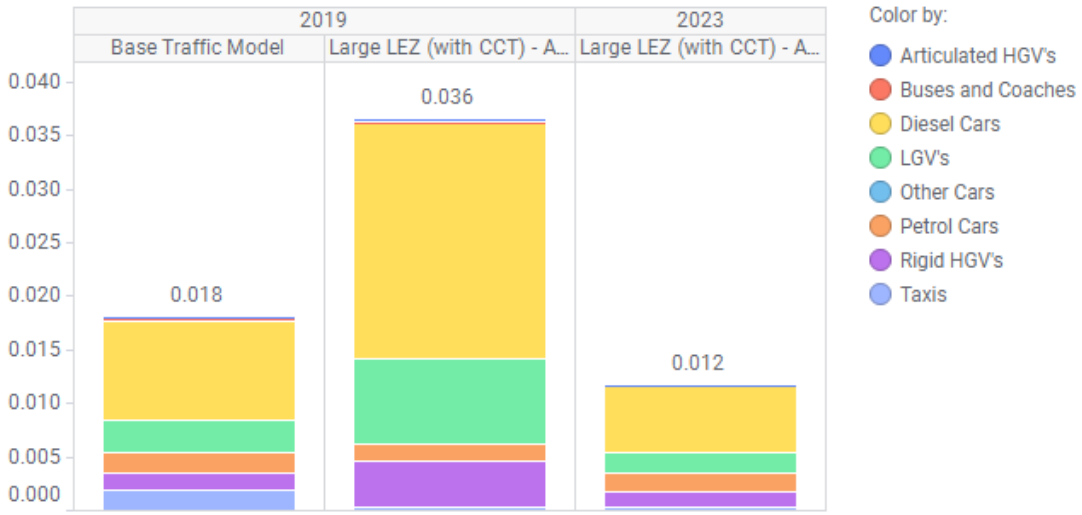


Figure 40: PM_{10} source attribution (tonnes/yr) for Base 2019 and Large LEZ (2019 and 2023) for Palmerston Place/Chester Street

Model Results

NO_2 Concentration Predictions

A summary of NO_2 concentration predictions was provided in the SEPA March 2021 Interim Presentation Summary (SEPA, 2021), though this relied on limited information due to the cyber-attack. This report expands on this information that was included in the previous report.

The air quality model was run for 3 options using 2 fleet scenarios (2019 'worst case' and 2023 'future'):

1) Base – the 'No LEZ' or 'Do Nothing' approach
2) Large City Centre LEZ (Figure 1)
3) Small City Centre LEZ (Figure 2)

The model was run using the methodology outlined in the SEPA Evidence report (SEPA, 2018), with changes described above, due to the way the traffic model data was supplied.

In this section we will refer to **model exceedances**. These are exceedances (concentrations greater than 40 µg m^{-3}) predicted by the model at kerbside points.

2019 'Worst Case' Scenarios

The air quality model predicts for the Base scenario that model exceedances are predicted **within** the proposed LEZ's at 43% of kerbside points for both LEZ options, and **across the whole city** at 24% of kerbside points (Table 7, Figure 41).

Table 7:Summary of Percentage of Model Exceedances for 2019 scenarios

Percentage of Kerbside Points exceeding 40µg/m^3	Model Scenarios		
	Base	Large LEZ	Small LEZ
All City	24%	12%	12%
In Large LEZ area	43%	10%	12%
In Small LEZ area	43%	8%	9%
Outside Large LEZ area	19%	13%	n/a
Outside Small LEZ area	20%	n/a	13%

If there was an LEZ in place for the 2019 fleet scenario, the number of model exceedances predicted within the LEZ falls from 43% to 10-12% (Table 7). There is also a reduction in model exceedances outside of LEZ zones from ~20% to 13% (Table 7).

However, it should be noted that, if an LEZ was in place in 2019, although there is an overall improvement, model exceedances are predicted in some areas:

- **New** model exceedances are predicted on Palmerston Place and Chester Street if the Large LEZ option is selected (Figure 42).
- **Existing** model exceedances with concentrations greater than 55 µg m^{-3} will persist on the Lothian Road/Charlotte Square corridor if the Small LEZ option is selected (Figure 43).

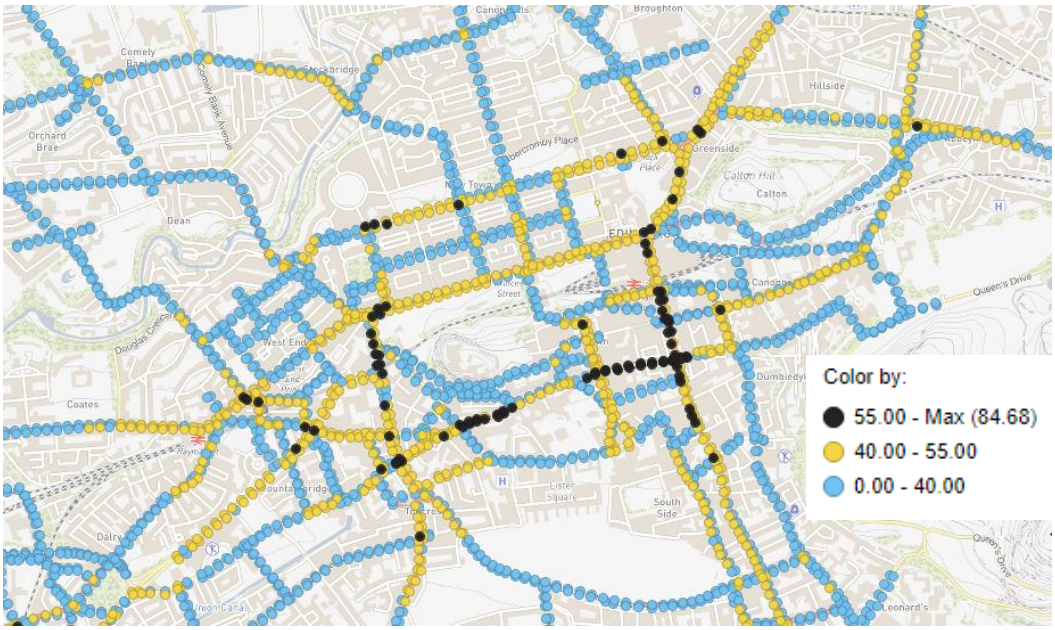


*Figure 41: **Base** 2019 NO_2 predicted concentrations (µg m^{-3})*

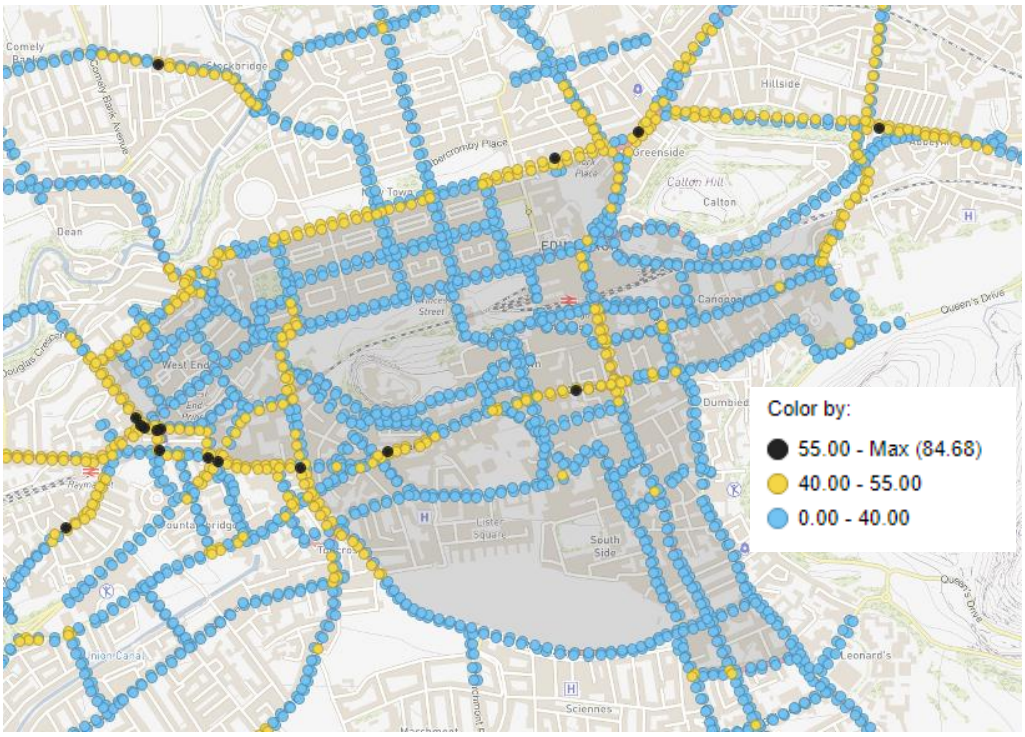


*Figure 42: **Large LEZ** 2019 NO_2 predicted concentrations (µg m^{-3}). Large LEZ is shaded area*

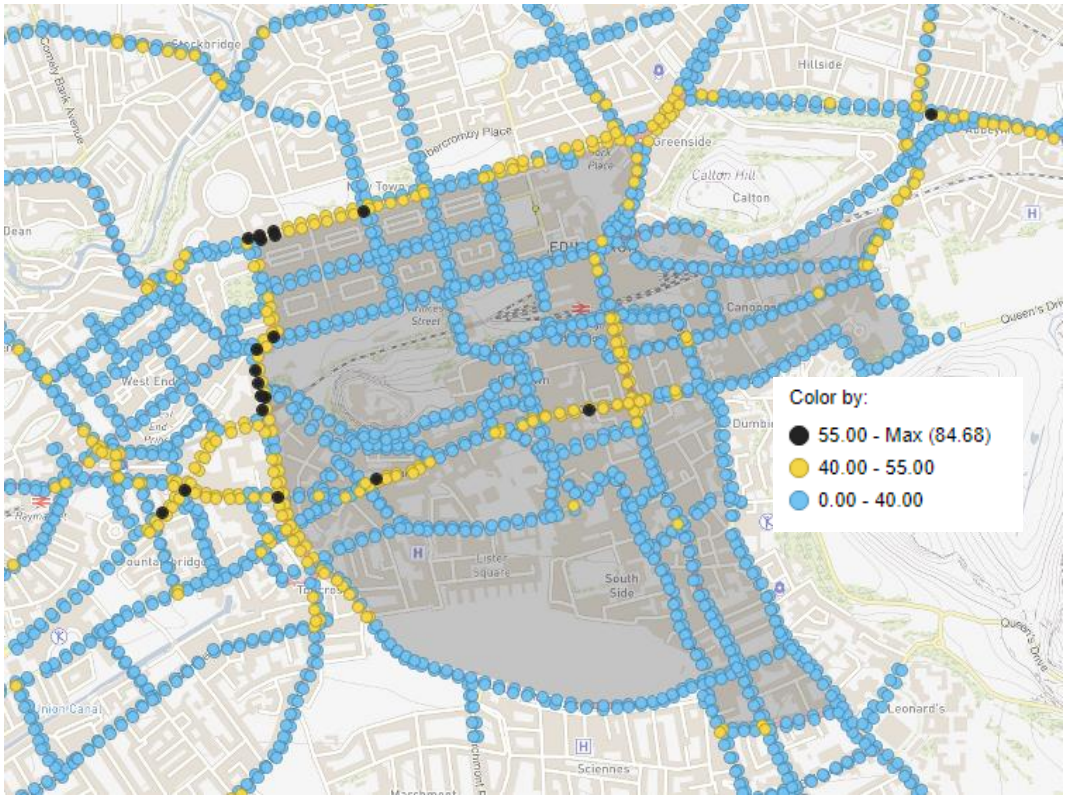


*Figure 43: **Small LEZ** 2019 NO_2 predicted concentrations (µg m^{-3}. Small LEZ is shaded area*

NO_2 Modelling Predictions (2019 'worst case' scenarios)

Large LEZ

The introduction of the Large LEZ (based on the 2019 fleet) is predicted to reduce concentrations at over 90% of kerbside points across the whole city (points coloured with blue shades in Figure 44). However, there are some areas where kerbside concentrations are predicted to increase (Palmerston Place, Chester Street, Grove Street, Gardiners Crescent, Abbeyhill, Horse Wynd, Holyrood Park Road, West Preston Street, Salisbury Road and Salisbury Place).

Most of these predicted increases in NO_2 concentrations are relatively small (less than 2 µg m^{-3}); however, there is predicted to be large increases on Palmerston Place and Chester Street of between 6 to 12 µg m-3 (Figure 45).

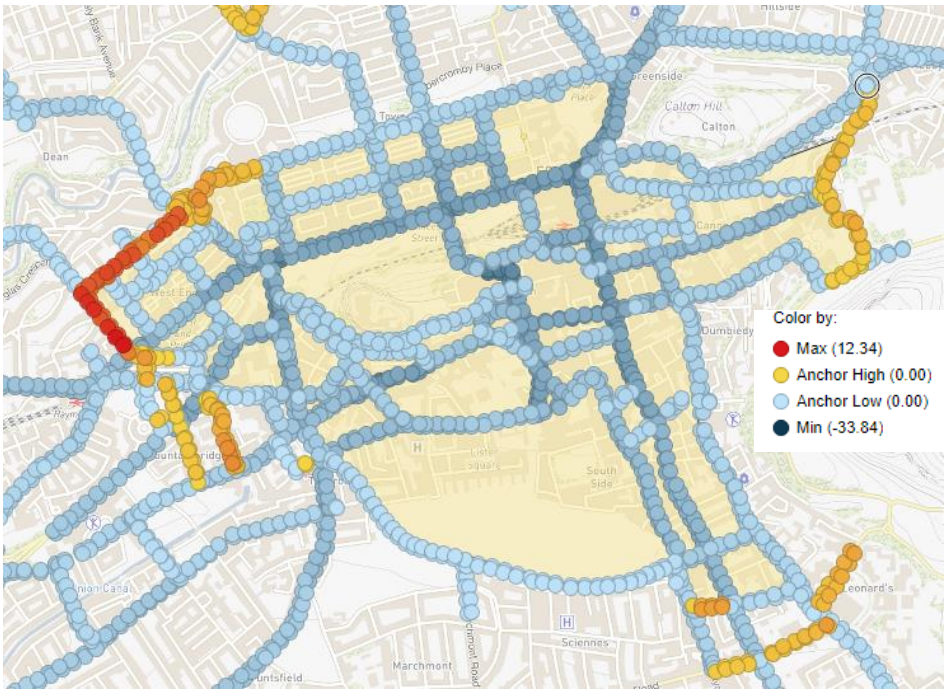


Figure 44: Predicted Changes in NO_2 concentration (µg m^{-3}) due to introduction of Large LEZ (2019), when compared to 2019 Base scenario

Model exceedances are still predicted at ~10% of kerbside points within the LEZ (Table 7), with the highest concentrations predicted at the junction of West Maitland Street, Palmerston Place and Shandwick Place (Figure 46). High concentrations are also predicted in the Cowgate, West Port and Morrison Street.

The introduction of the Large LEZ may create new model exceedances on Palmerston Place/Chester Street/Drumsheugh Gardens, Great Stuart Street and Abbeyhill (Figure 47).

- Palmerston Place: Model exceedances were predicted at 37% of kerbside points in the Base Run. For the Large LEZ (2019), model exceedances are predicted at all kerbside points (concentrations range from 43 to 54 µg m^{-3}).
  Although the largest concentration increases are predicted here, higher concentrations are predicted in other parts of the city, including some locations within the LEZ (e.g. Lothian Road) (Figure 48).

- Chester Street/Drumsheugh Gardens: New model exceedances are predicted at all kerbside points on Chester Street and the east section of Drumsheugh Gardens. Concentration increases of up to 9 µg m^{-3} (Figure 45) are predicted resulting in concentrations of between 44 and 46 µg m-3 (Figure 46, Figure 47).

- Abbeyhill and Great Stuart Street: Although new model exceedances are predicted in the model, this is because concentrations were just below the 40 µg m^{-3} threshold in the Base scenario, and a small increases of 1-2 µg m^{-3} (Figure 45) due to the LEZ results in a concentration just above the 40 µg m^{-3} threshold (Figure 46, Figure 47).

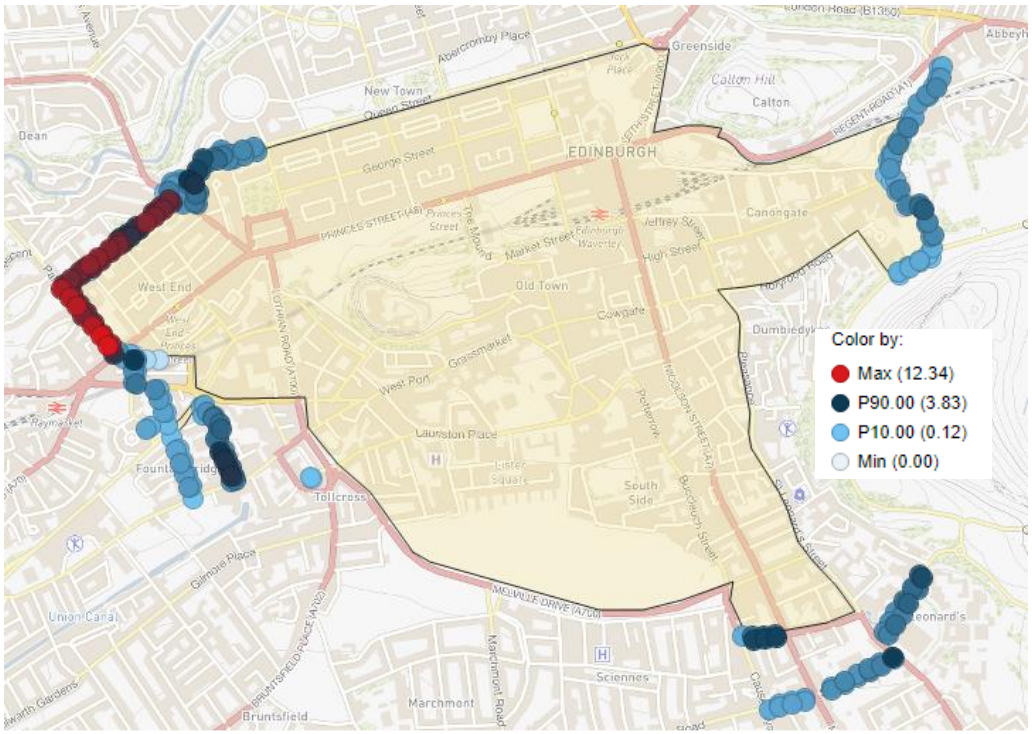


Figure 45: Predicted NO_2 increases (µg m^{-3}) due to introduction of Large LEZ (2019), when compared to 2019 Base scenario

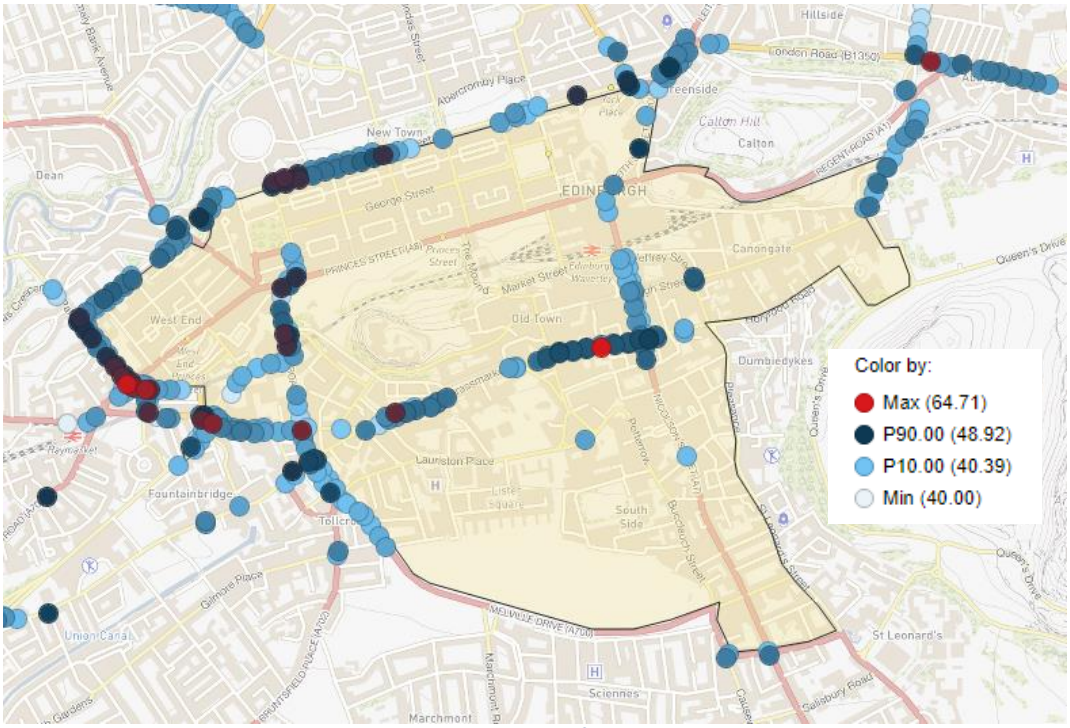


Figure 46: Predicted model exceedances (µg m^{-3}) after introduction of Large LEZ (2019)

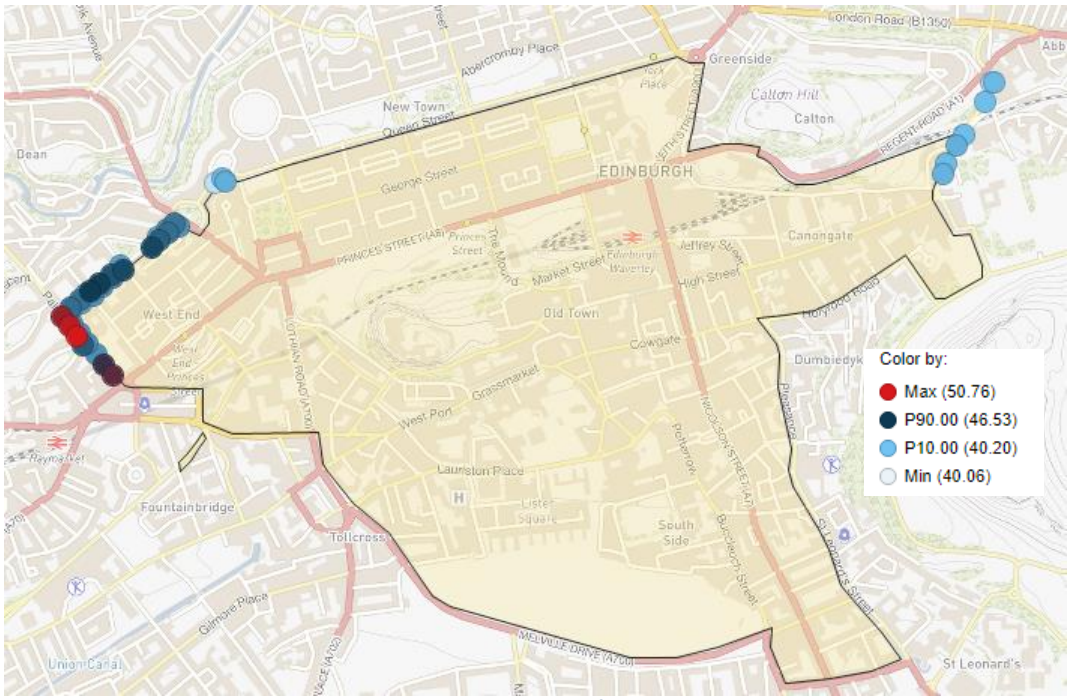


Figure 47: Predicted new exceedances (µg m^{-3}) introduction of Large LEZ (2019)

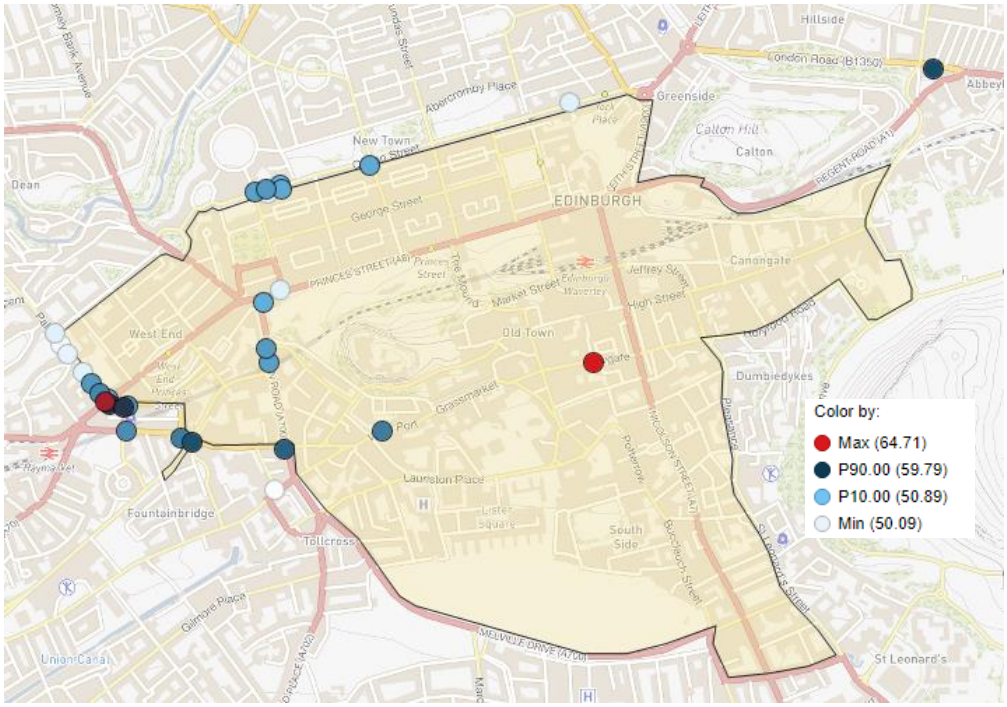


Figure 48: Predicted concentrations > 50 µg m^{-3} due to introduction of Large LEZ (2019)

Small LEZ

As there was concern that the Large LEZ option would result in new model exceedances in Palmerston Place and Chester Street, a smaller LEZ option was explored (Figure 2).

For the Small LEZ option (2019 fleet), like the Large LEZ, NO_2 concentrations are expected fall in most kerbside points (Figure 49), though they are predicted to increase on some roads coloured in yellow and red. It is important to note that the maximum increase is 3.8 µg m^{-3}, which is significantly lower than the maximum increase of 12 µg m^{-3} in the Large LEZ option.

Concentration increases due to the introduction of the Small LEZ would not lead to many new model exceedances (Figure 50), and where they do, predicted increases are very small and just cross above the 40 µg m^{-3} threshold.

The largest predicted increases are on West Preston Street, increases on other roads are very small (less than 1 µg m^{-3}; Figure 51).

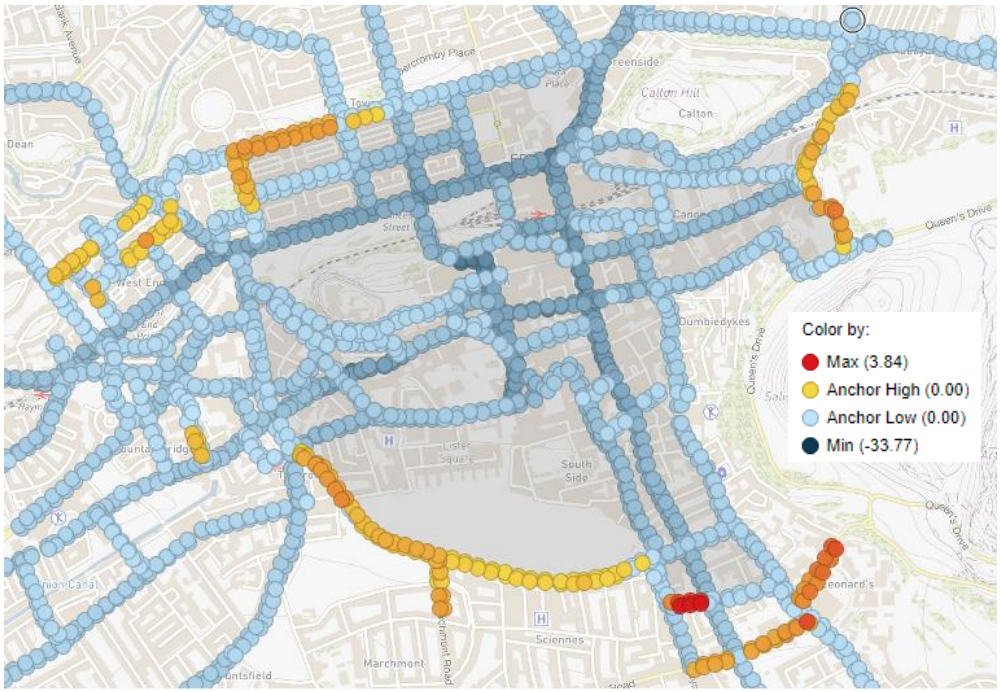


Figure 49: Predicted Changes in NO_2 concentration (µg m^{-3}) due to introduction of Small LEZ (2019), when compared to Base 2019 scenario

The highest concentrations are predicted on Lothian Road, Queen Street and Cowgate (Figure 52) and model exceedances will occur at 8% of kerbside points within the Small LEZ. On Lothian Road, predicted concentrations are still likely to exceed 50 µg m^{-3} and possibly over 60 µg m^{-3} (Figure 53).

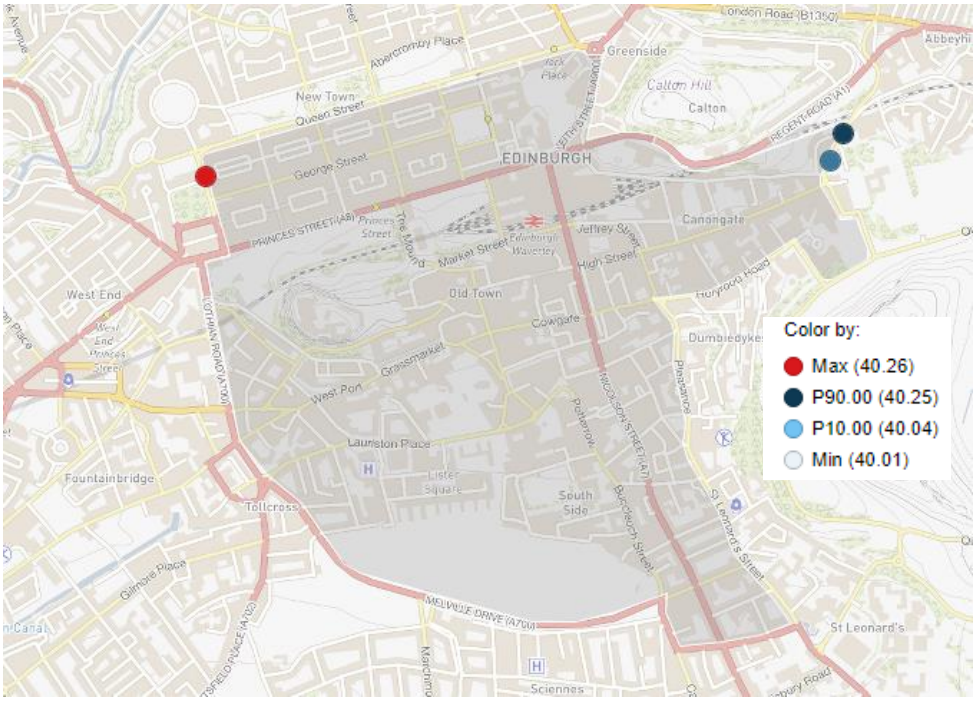


Figure 50: Predicted new NO_2 exceedances introduction of Small LEZ (2019)

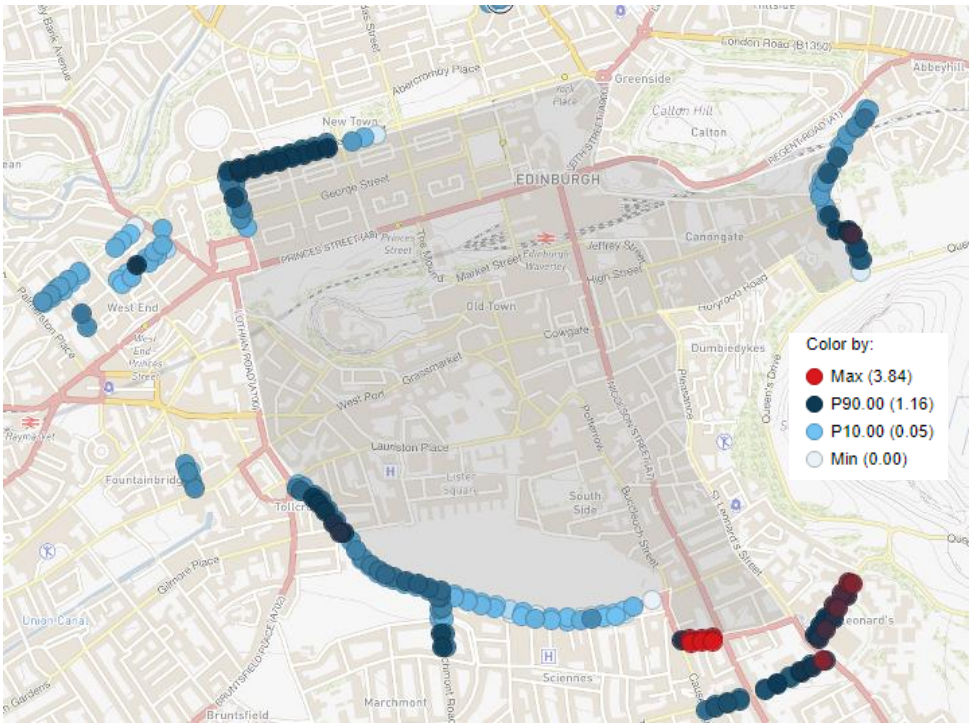


Figure 51: Predicted NO_2 increases ($\mu g\ m^{-3}$) due to introduction of Small LEZ (2019), when compared to 2019 Base scenario

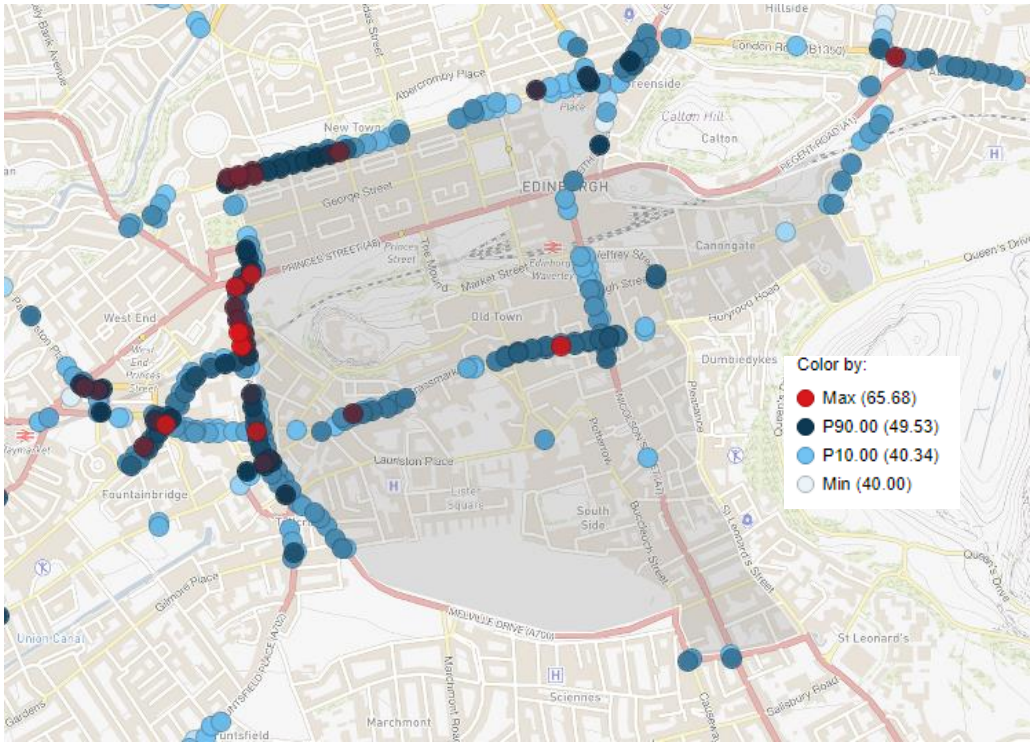


Figure 52: Predicted NO_2 exceedance concentrations (µg m-3) after introduction of Small LEZ (2019)

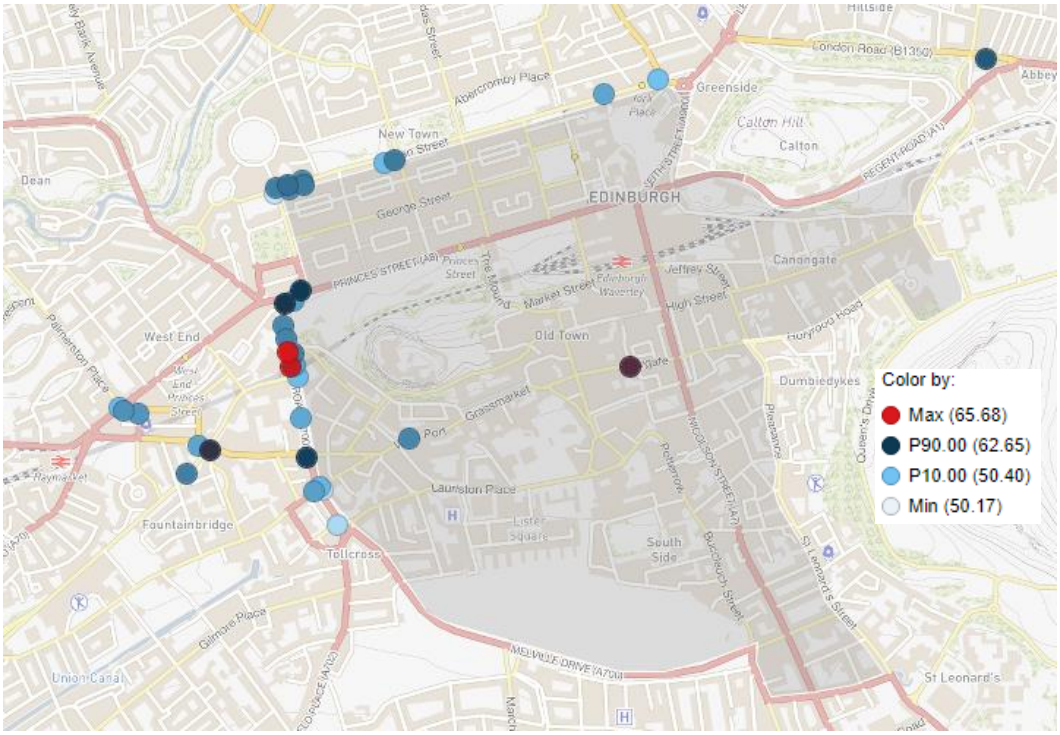


Figure 53: Predicted NO_2 concentrations >50 µg m^{-3} due to introduction of Small LEZ (2019)

Summary (2019 scenarios)

Based on 2019 fleet scenarios, the Large LEZ option is predicted to create new model exceedances have on Palmerston Place and Chester Street. Although the Small LEZ option would avoid creating these new exceedances, existing model exceedances (with higher concentrations than is predicted on Palmerston Place/Chester Street with the Large LEZ) would remain on Lothian Road.

Across the whole city, when looking at the ranked (high to low) values for all kerbside points, both LEZ options significantly reduce NO_2 concentrations (Figure 54) and model exceedances fall from 23.5% to 12% (Table 8).

For kerbside points within the Central AQMA area (Figure 55), the Large LEZ will result in slightly lower concentrations than the Small LEZ. For kerbside points not in any AQMA, both LEZ options will reduce the number of model exceedances from 15% to 8% (Table 8).

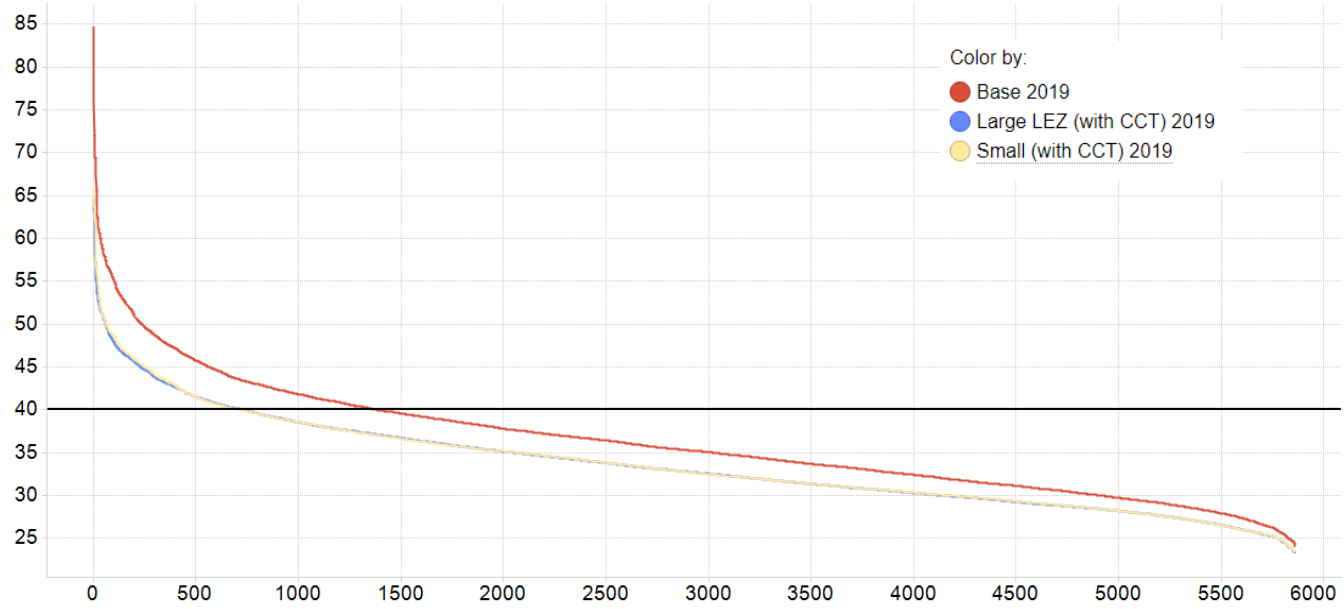


Figure 54: Ranked Concentrations for Base, Large LEZ and Small LEZ options (2019) for All City

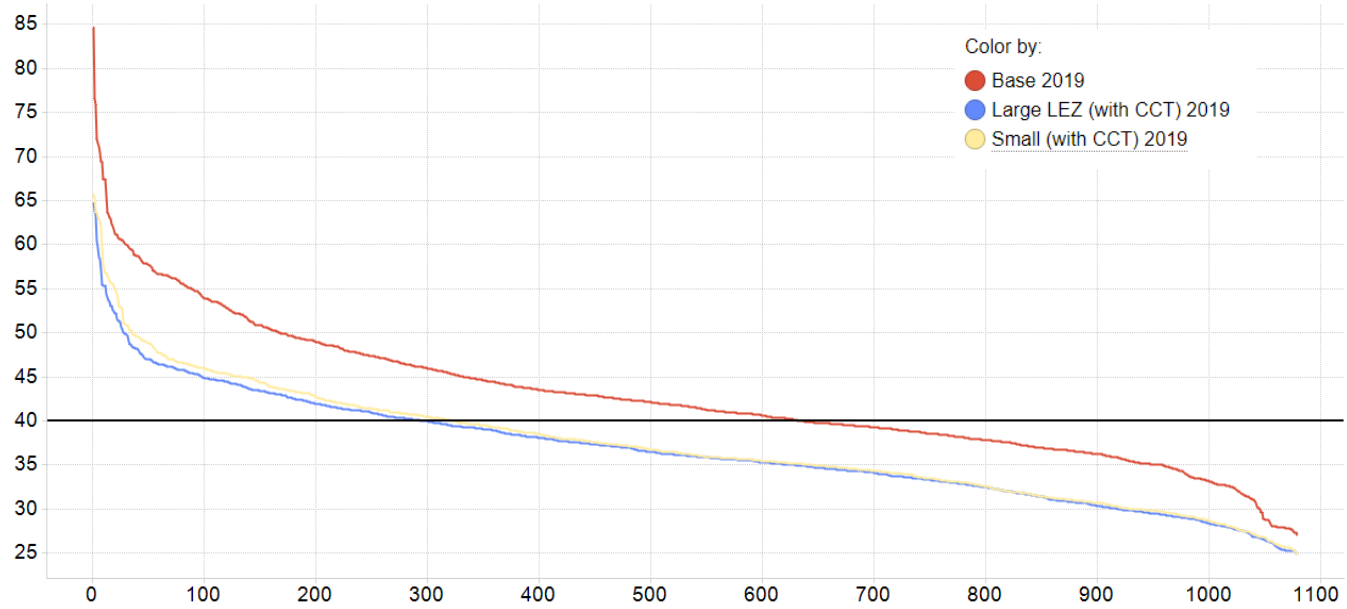


Figure 55: Ranked Concentrations for Base, Large LEZ and Small LEZ options (2019) for the Central AQMA

Table 8: Percentage of Model Exceedances in AQMA's

Area of City	Base	Large LEZ	Small LEZ
All City	23.5%	12.4%	12.2%
All AQMA's	55.1%	26.5%	28.3%
Central AQMA only	58.7%	27.5%	30.0%
Not in AQMA	14.8%	7.7%	8.5%

NO_2 Model Predictions (2023 'future' scenario)

There are many uncertainties in predicting future pollution concentrations, due to large uncertainties on what the fleet composition will be and how COVID will affect future fleet changes. However, it was agreed with CEC and Jacobs to use the 2023 National Fleet predictions to predict future concentrations. It is important to note that as it has been found these fleet predictions tend to be optimistic, this is likely to occur later than 2023.

The 2023 fleet compliance vales can be found in Table 5 and Table 6. The traffic flow data used in the modelling remains unchanged from the 2019 model scenarios.

2023 'future' Scenarios

For the Base 2023 scenario, model exceedances are predicted at 11% of kerbside points within the Large LEZ area, and at 3.2% of kerbside points across the whole city (Table 9) and are predicted to found on Lothian Road, Bridges, Cowgate, West Port and Leith Street (Figure 56).

Table 9: Summary of Percentage of Model Exceedances for 2023 scenarios

Percentage of Kerbside Points exceeding 40µg/m^3	Model Scenarios		
	Base Run	Large LEZ	Small LEZ
All City	3.2%	0.8%	1%
In Large LEZ area	11.2%	2.2%	2.7%
In Small LEZ area	10.8%	1.9%	1.8%
Outside Large LEZ area	1.6%	0.6%	0.6%
Outside Small LEZ area	2.0%	0.7%	0.8%

If an LEZ was in place for the 2023 'future' fleet scenario, model exceedances within the LEZ are predicted to fall from 11% to 2-3%%. A reduction in model exceedances is also predicted outside of the LEZs (from ~1.6% to ~0.6%. This shows that even in the future, an LEZ will still be effective.

However, it should be noted that although there is a significant overall improvement in pollution levels, model exceedances are still predicted in some areas (Figure 57, Figure 58) such as Cowgate (dispersion on this road is very poor due to the deep canyon). Other roads where model exceedances are predicted are Lothian Road, Princes Street (West End) and Queen Street (by Charlotte Square).

For the Large LEZ option, no model exceedances are predicted on Palmerston Place and Chester Street. This suggests any new model exceedances created on this road by the introduction of an LEZ will be a short-term issue and may not even occur depending on what the fleet composition is

when the LEZ is enforced. It is likely that in 2024, when LEZ enforcement is scheduled to begin, the actual fleet will be closer to the 'future' 2023 fleet scenario than the 2019 fleet scenario.

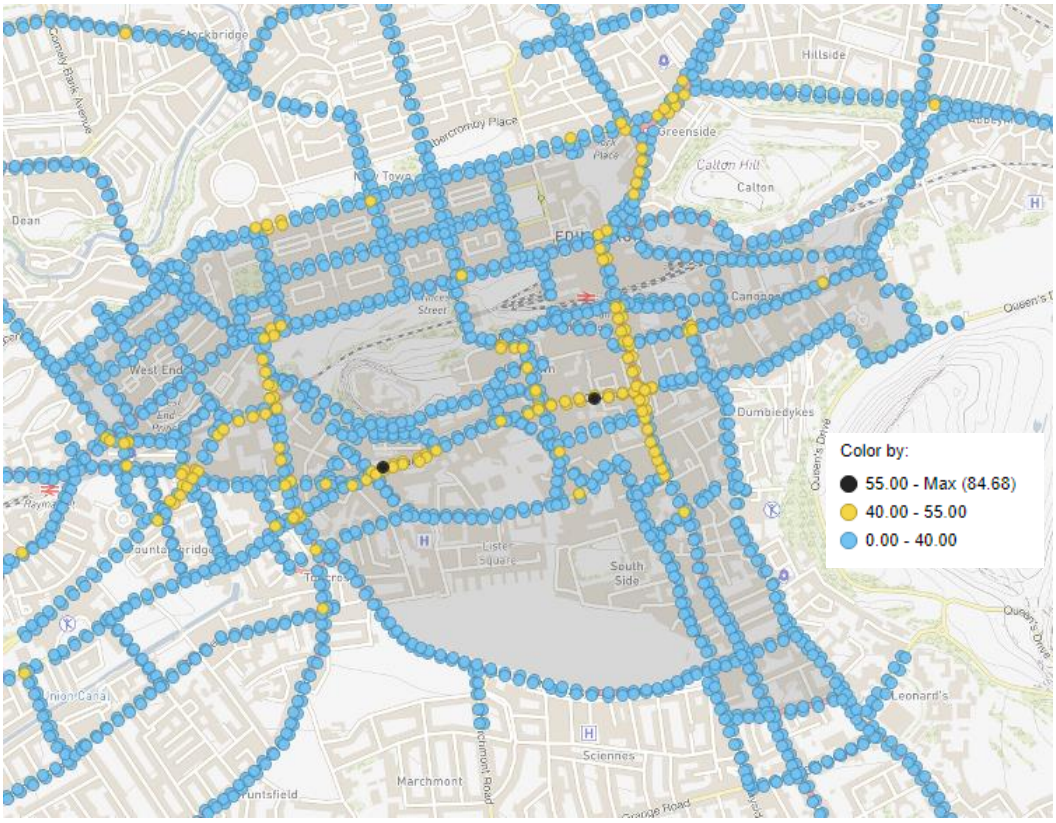


Figure 56: Base 2023 'future' scenario NO_2 predicted concentrations (µg m^{-3})

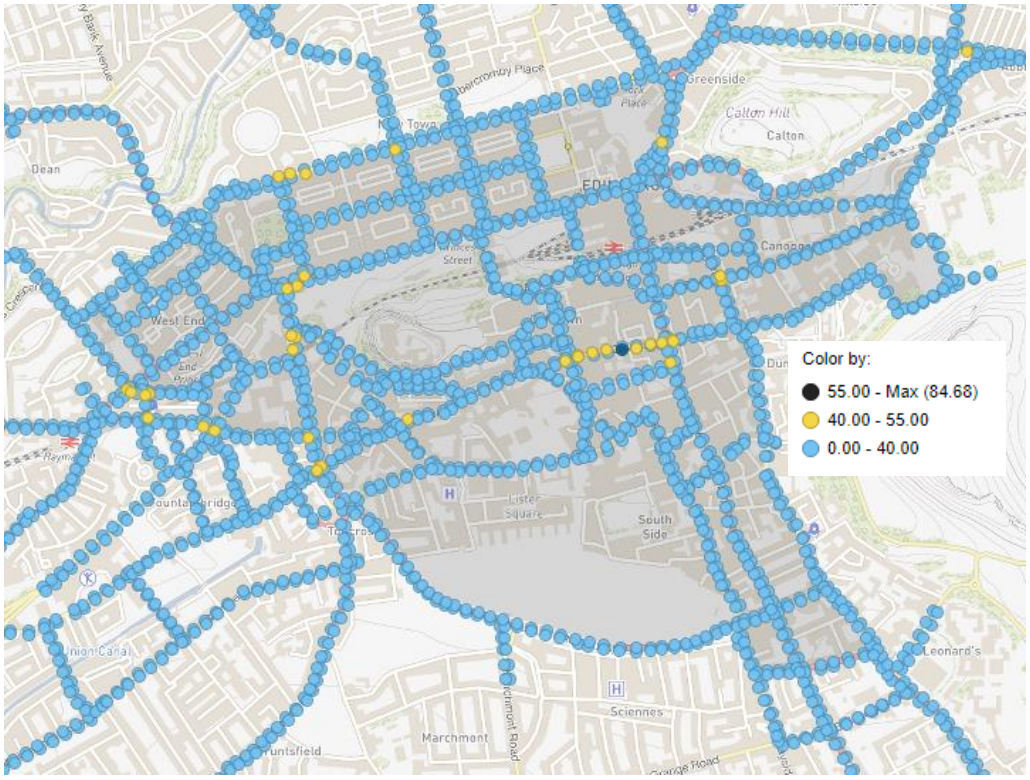


Figure 57: Large LEZ 2023 'future' scenario NO_2 predicted concentrations (µg m^{-3}). LEZ is shaded area

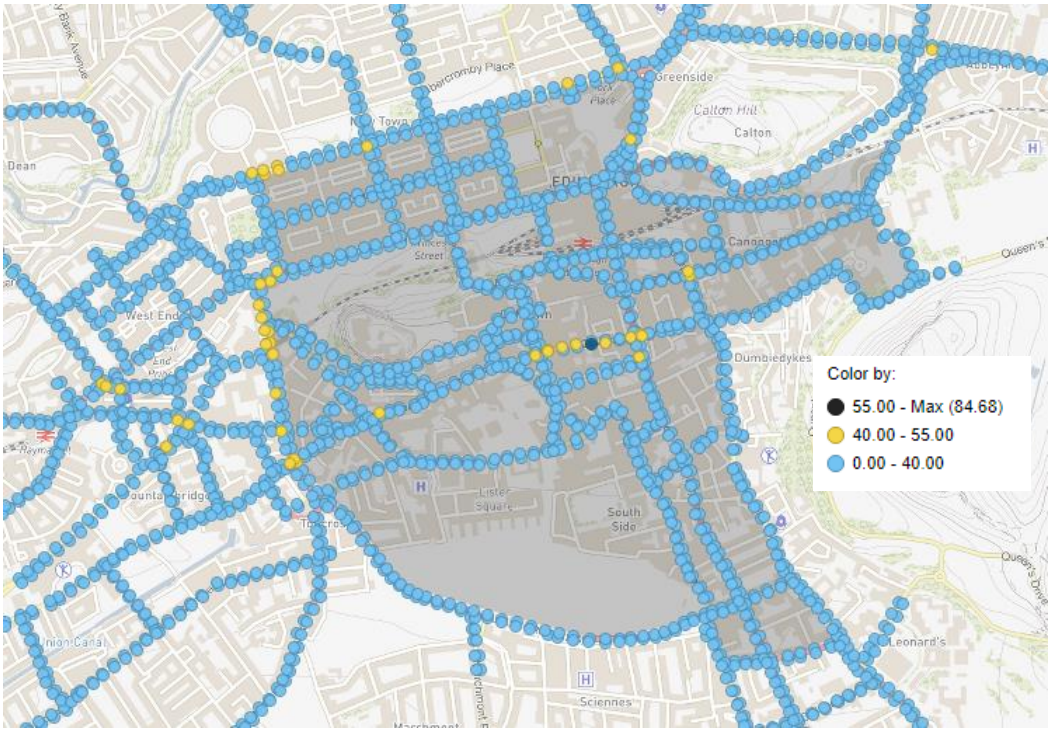


Figure 58: Small LEZ 2023 'future' scenario NO_2 predicted concentrations (µg m^{-3}). LEZ is shaded area

Large LEZ

Model exceedances are still predicted for the Large LEZ 'future' 2023 scenario (Figure 57). Although the Base 2023 'future' scenario suggests that concentrations will fall when compared to the Base 2019 scenario, the impact of the Large LEZ with the 'future' 2023 fleet will reduce concentrations further (Figure 59, Figure 61).

There will still be displacement of non-compliant traffic, with Palmerston Place/Chester Street remaining the streets with the highest increases. The predicted concentration increases are much lower than in the Large LEZ 2019 scenario (4 µg m^{-3} increase in 2023 'future scenario) **and** no new model exceedances are predicted (concentrations are predicted to be 34 – 36 µg m^{-3}).

On Lothian Road, Torphichen Street and Morrison Street, model exceedances are predicted (~44 µg m^{-3}), though not at all kerbside points (Figure 57).

On all modelled roads, no new model exceedances are predicted, and there is only 1 kerbside point on Cowgate where concentrations are predicted to exceed 50 µg m^{-3} (Figure 62).

When compared to the Base 2019 scenario, concentrations at kerbside points are predicted to be lower across the whole city centre. At some kerbside points, the model predicts concentrations to be up to 34 µg m^{-3} lower (Figure 60).

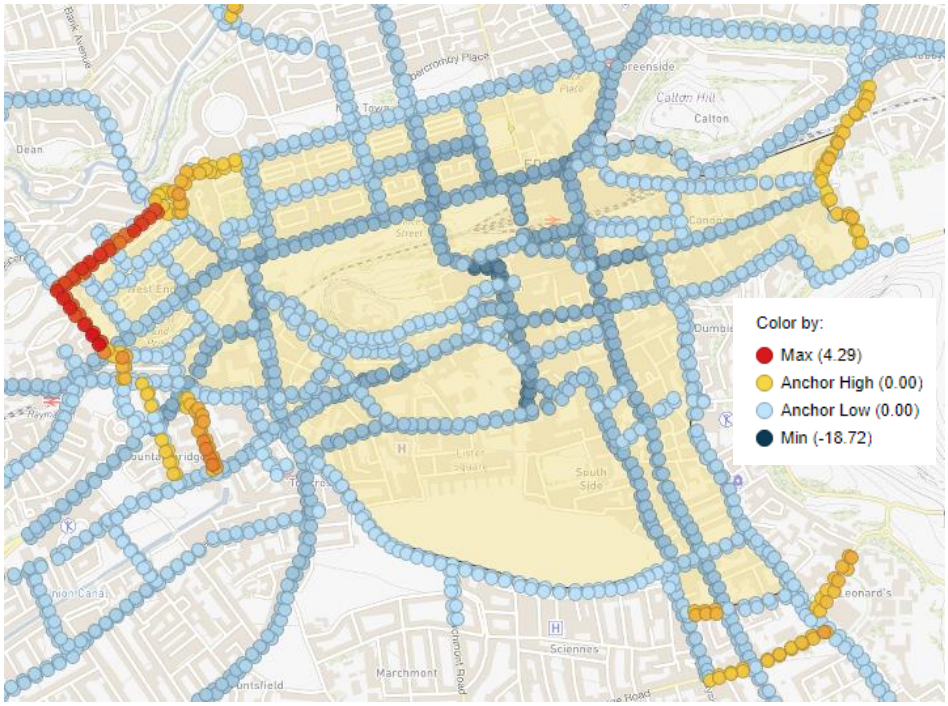


Figure 59: Predicted Changes in NO_2 concentration (µg m^{-3}) due to Large LEZ (2023), when compared to 2023 Base scenario

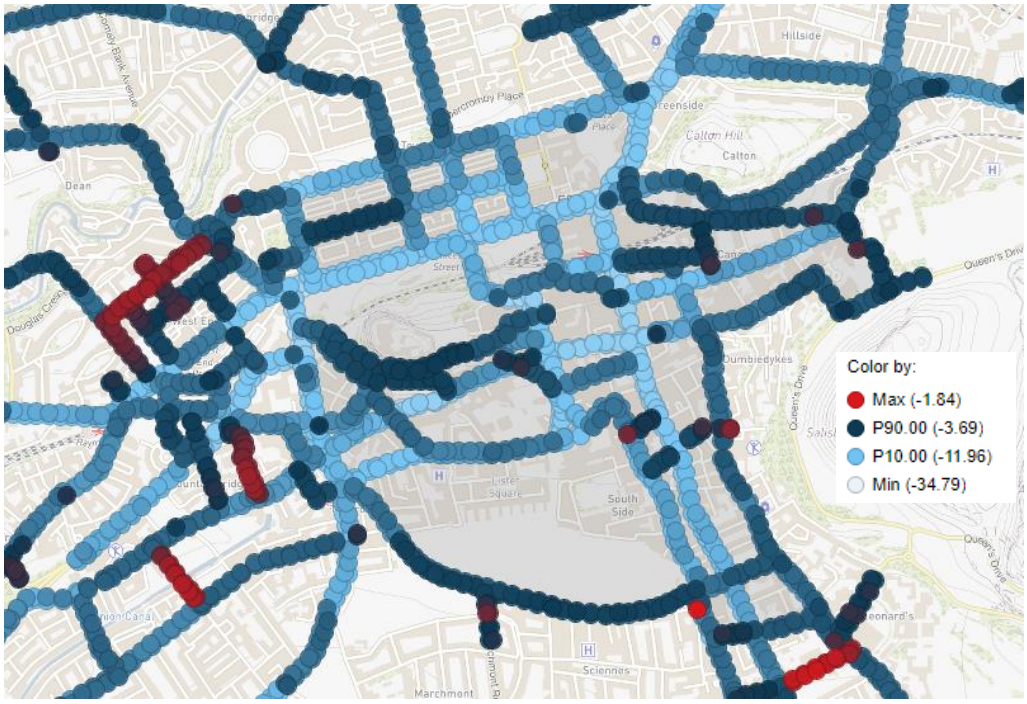


Figure 60: Predicted Changes in NO_2 concentration (µg m^{-3}) due to Large LEZ (2023), when compared to 2019 Base scenario

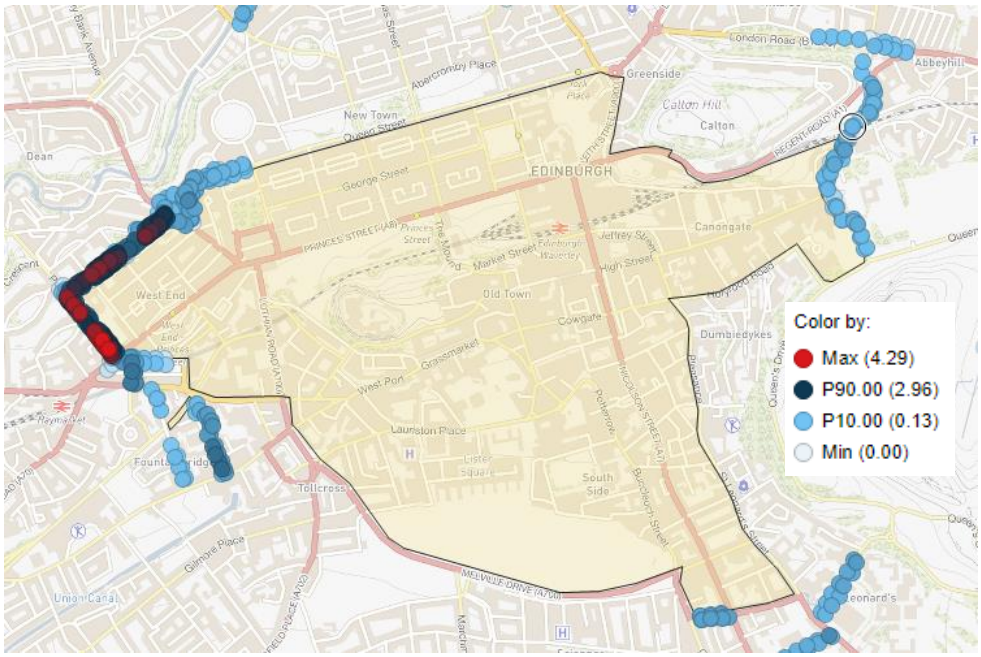


Figure 61: Predicted NO_2 increases (µg m^{-3}) due to Large LEZ (2023), when compared to 2023 Base scenario

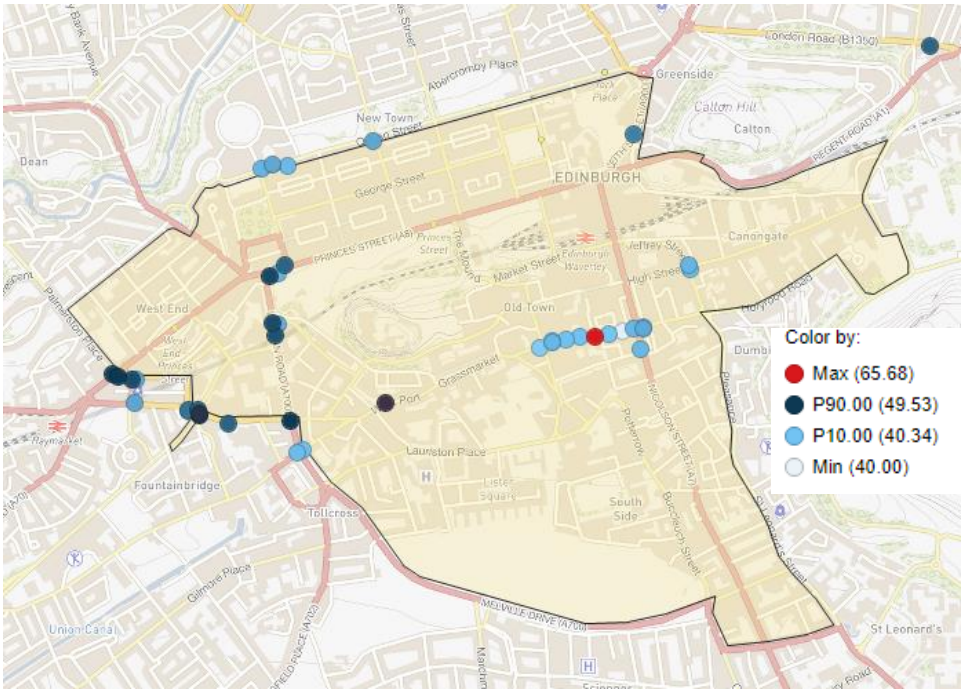


Figure 62: Predicted NO_2 exceedance (µg m^{-3}) concentrations due to Large LEZ (2023)

Small LEZ

Model exceedances are also still predicted in the 'future' 2023 scenario if the Small LEZ option was selected. When compared to the Base 2023 scenario, concentrations decline at most kerbside points (Figure 63). Increased concentrations are predicted at some locations, though these are predicted to be 1µg m^{-3} or less (Figure 64).

When compared to the Base 2019 scenario, concentrations will be lower at all kerbside points (Figure 65).

Model exceedances are predicted at similar locations to the Large LEZ option. The exception of Lothian Road, where concentrations of up to 50 µg m^{-3} are predicted at most kerbside points. This is around 5 µg m^{-3} higher than the Large LEZ option, due to non-compliant vehicles being allowed to use this route (Figure 66).

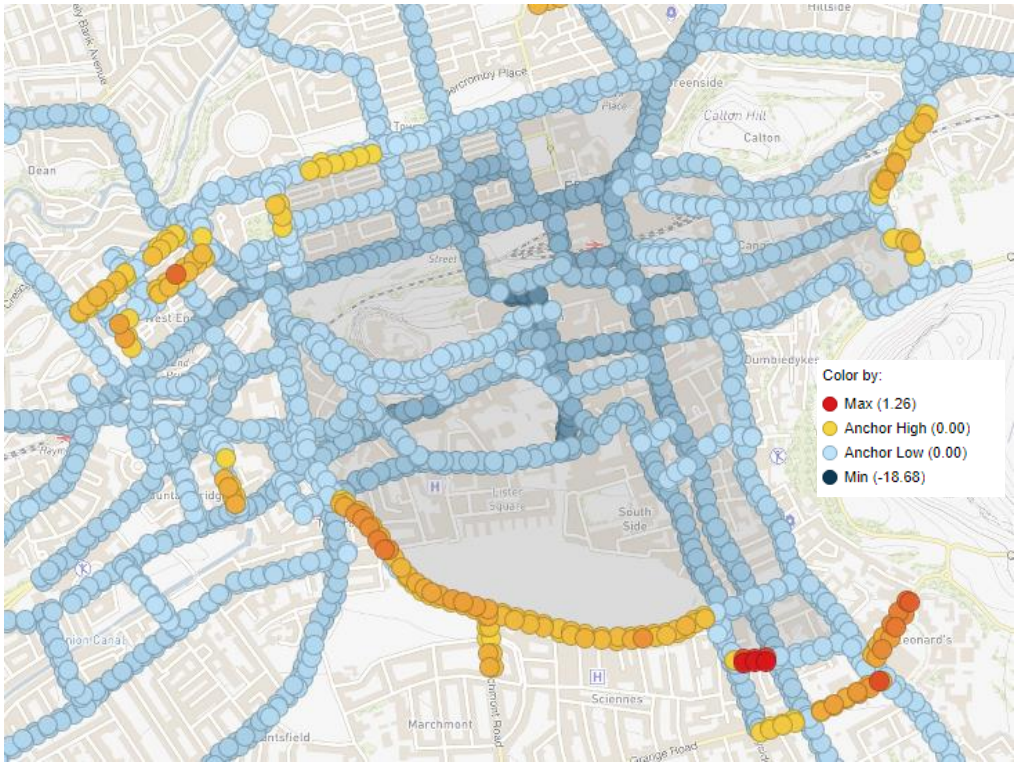


Figure 63: Predicted Changes in NO_2 concentration (µg m^{-3}) due to introduction of Small LEZ (2023), when compared to 2023 Base scenario

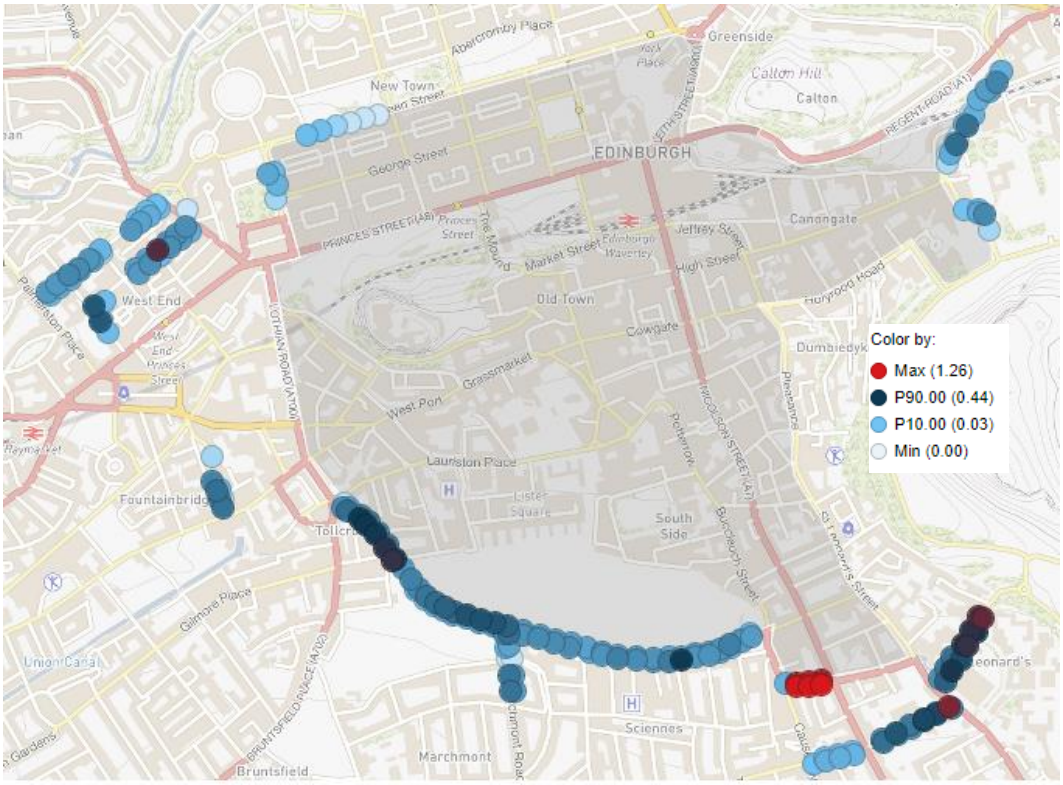


Figure 64: Predicted NO_2 increases due to introduction of Small LEZ (2023), when compared to 2023 Base scenario (µg m^{-3})

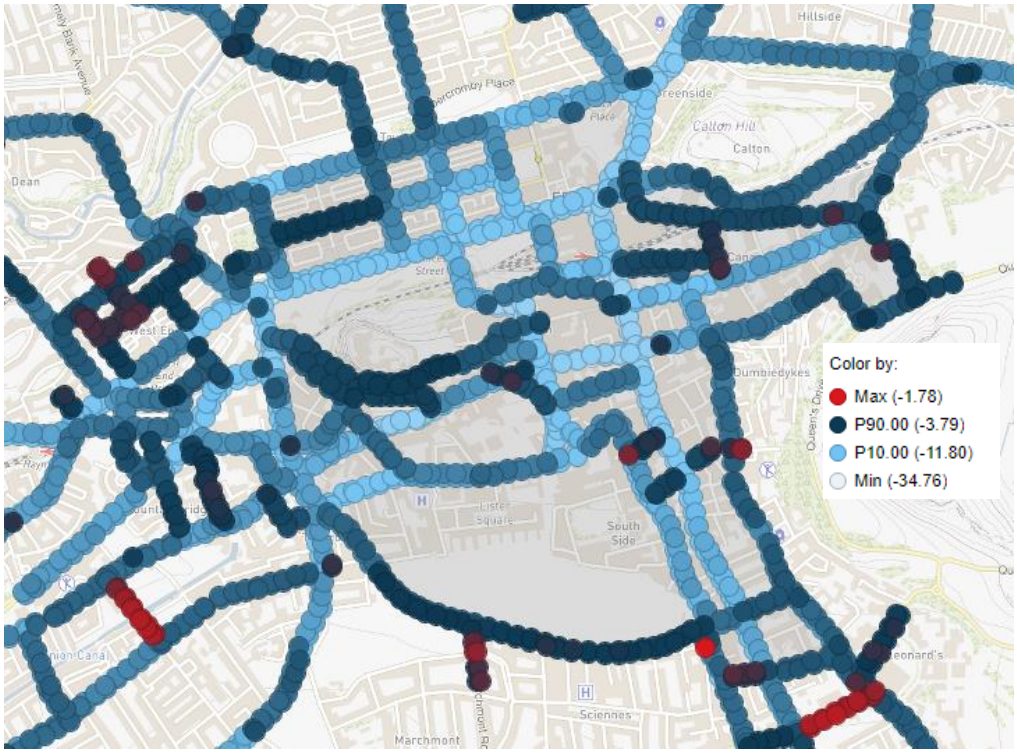


Figure 65: Predicted Changes in NO_2 concentration (µg m-3) due to introduction of Large LEZ (2023), when compared to Base 2019 scenario

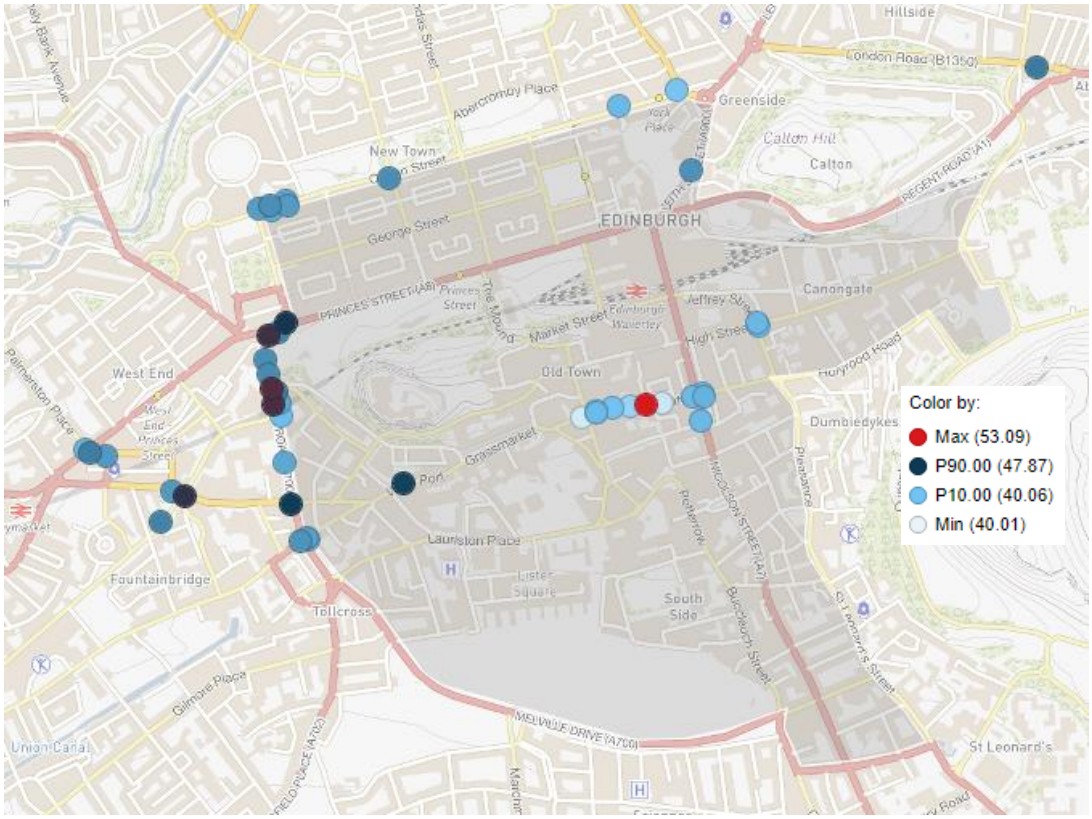


Figure 66: Predicted exceedance concentrations after introduction of Small LEZ (2023) (µg m^{-3})

Summary (2023 'future' scenarios)

Using the predicted 2023 National Fleet data to predict 'future' concentrations, the model predicts that the LEZ will still have an impact on reducing NO_2 concentrations (Figure 67) within the LEZ and on most surrounding areas.

No new model exceedances are predicted and concentrations at all kerbside points would be lower than the Base 2019 scenario. Within the Central AQMA, the effect of the LEZ is clear (Figure 68), with a reduction of model exceedances from 8.3% to 3.2% (Table 10).

Traffic displacement of non-compliant traffic is still expected, though will be much less than the 2019 scenarios. On Palmerston Place and Chester Street, model exceedances are not predicted, and concentrations are predicted to be lower than Base 2019 levels. However, on Lothian Road, Torphichen Street, parts of Queens Street and Cowgate (Figure 66), model exceedances are still predicted.

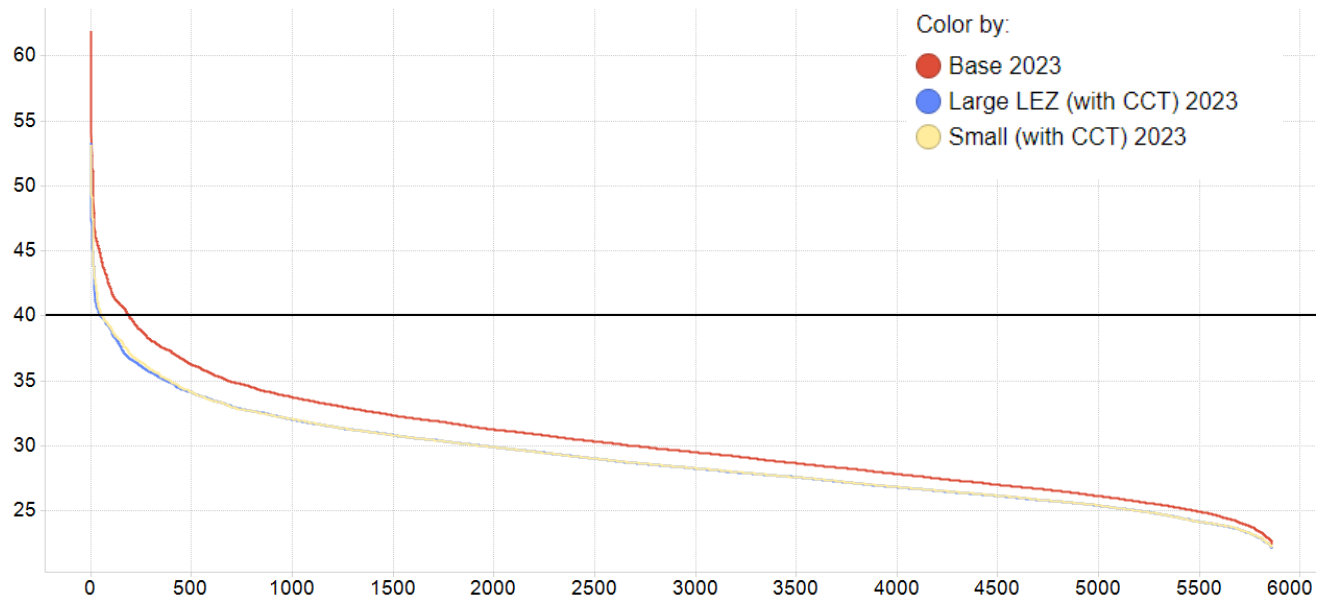


Figure 67: Ranked Concentrations for Base, Large LEZ and Small LEZ options (2023) for All City

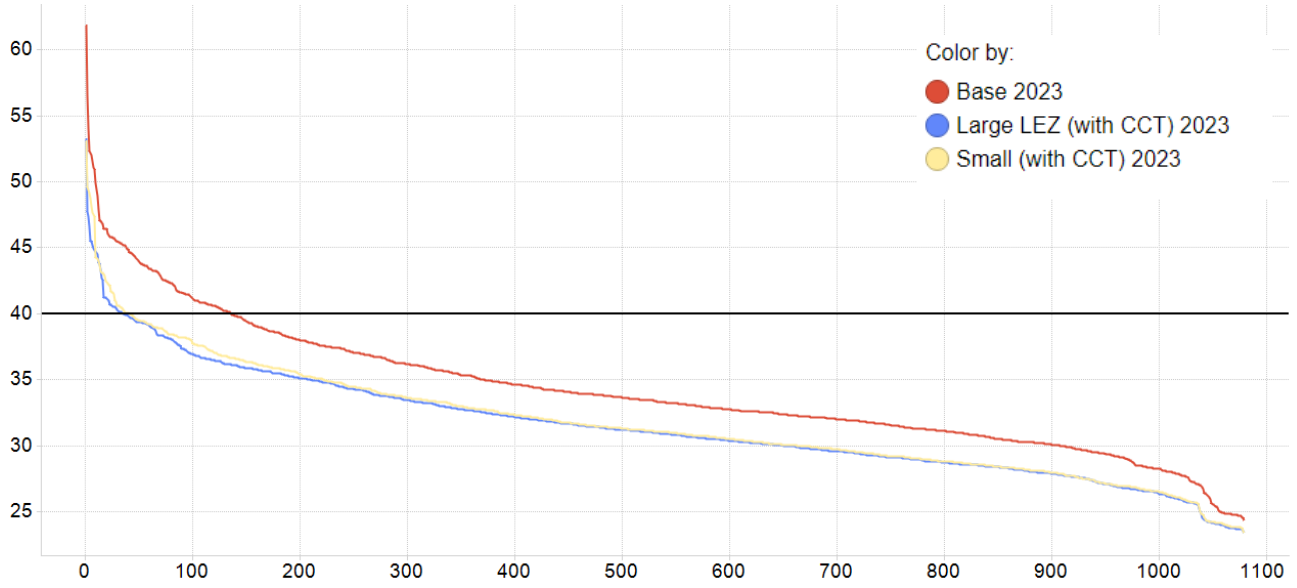


Figure 68: Ranked Concentrations for Base, Large LEZ and Small LEZ options (2023) for the Central AQMA

Table 10: Number of Kerbside points exceeding 40 µg m^{-3} for AQMA's (2023)

Area of City	Base	Large LEZ	Small LEZ
All City	2.1%	0.84%	0.97%
All AQMA's	7.2%	2.9%	3.5%
Central AQMA only	8.3%	3.2%	3.8%
Not in AQMA	0.63%	0.26%	0.28%

Comparing effects of Large LEZ option in 2019 and 2023

It is useful to look at the effects of the Large LEZ on a histogram plot which shows the number of kerbside points within a concentration group. We want to see the peak of the curve as far to the left as possible (where concentrations are lower). The LEZ has the effect of pushing the curve to the left, which means there are fewer model exceedances (Figure 69, Figure 70).

Due to model uncertainties, there is a risk that kerbside points which are just below the 40 µg m^{-3} threshold may, in reality, be above it, and vice versa.

The 2019 fleet scenario predicts that there are many kerbside points close to the 40 µg m^{-3} line, and there is a risk that model exceedances may, in reality, exist at more locations.

However, the 2023 scenario predicts that the majority of kerbside points are less than 35 µg m^{-3}, and so the risk of incorrectly predicting that model exceedances will not occur at these kerbside points is low.

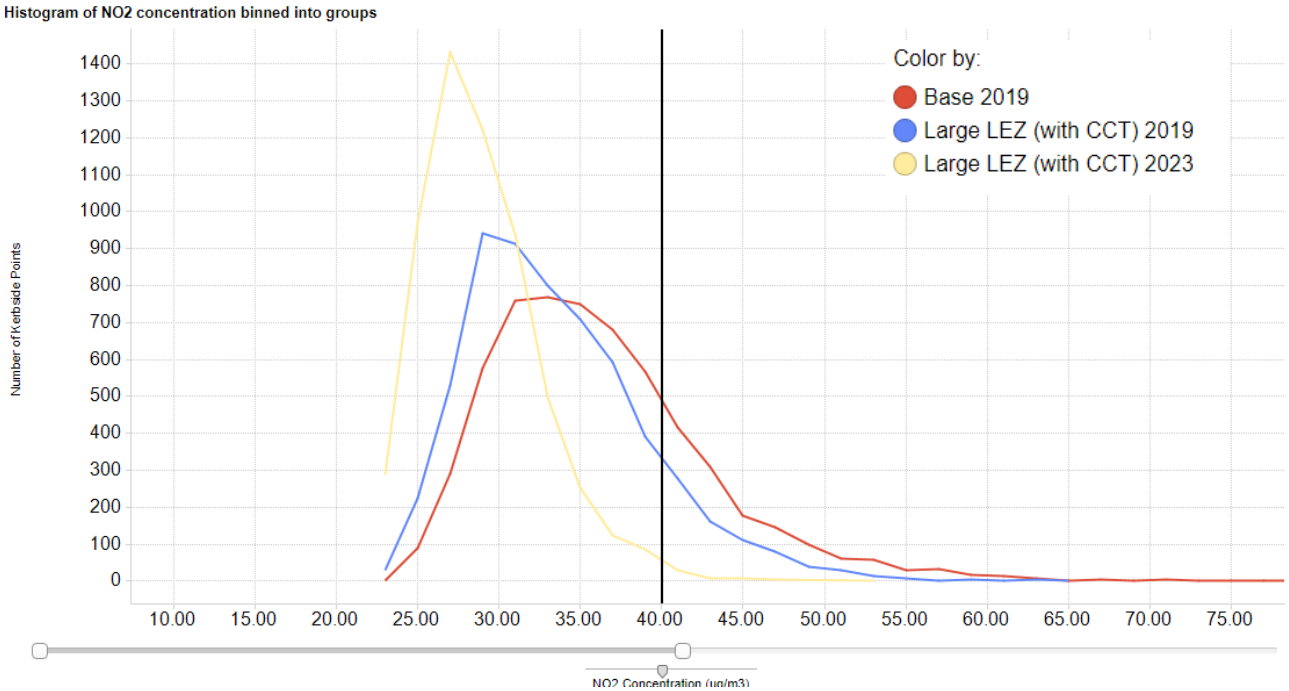


Figure 69: Concentration histogram for Base, Large LEZ (2019 and 2023) for All City

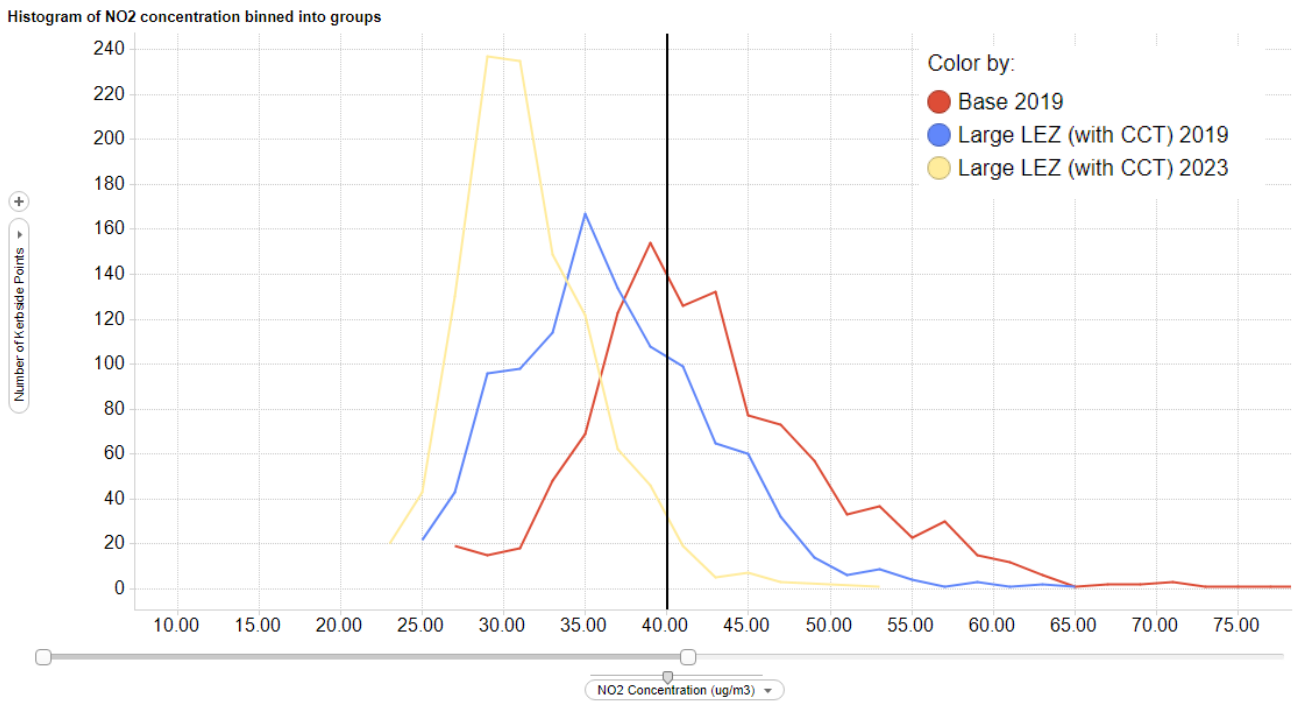


Figure 70: Concentration histogram for Base, Large LEZ (2019 and 2023) for Central AQMA

Detailed Street Analysis

In this section, the average concentrations for each street are analysed.

On Palmerston Place/Chester Street/Drumsheugh Gardens, the Large LEZ 2019 scenario predicts large increases in concentrations that would lead to new model exceedances, however in the Large LEZ 2023 scenario, concentrations are less than 40 µg m^{-3} and are lower than the Base 2019 scenario (Table 11).

On Lothian Road, the average concentration only falls below the 40 µg m^{-3} threshold for the Large LEZ 2023 scenario, although concentrations are declining (Table 11).

On Abbeyhill, the introduction of either LEZ has increased concentrations by a small amount. Concentrations are close to the 40 µg m^{-3} threshold in the 2019 scenarios, but no model exceedances are expected in any of the 2023 'future' scenarios (Table 11).

*Table 11: Average kerbside Concentrations (µg m^{-3}) on selected streets. **Bold** numbers represent a model exceedance*

	Average NO_2 Concentrations (µg m^{-3})					
	2019 'worst case'			2023 'future'		
	Base	Large LEZ	Small LEZ	Base	Large LEZ	Small LEZ
Palmerston Place (South)	39.4	**49.5**	38.9	33.1	37.6	32.8
Palmerston Place (North)	38.4	**46.9**	38.1	30.7	35.1	31.8
Chester Street	35.3	**42.6**	35.4	28.6	32.7	29.9
Drumsheugh Gardens (East)	34.7	**43.2**	34.7	28.3	32.2	29.4
Lothian Road (North)	**56.6**	**44.7**	**50.7**	**41.1**	37.3	**41.2**
Abbeyhill	39.6	**40.9**	**40.1**	31.8	32.9	32.7

Façade and Sensitive Receptor Modelling

Due to concerns about increased concentrations and new exceedances on Palmerston Place and Chester Street, further detailed modelling was carried out to predict concentrations at building façades and sensitive points around the LEZ boundary. These are expected to be lower than the kerbside points. For technical reasons, the point was selected at 1m from the actual building façade, to make sure that the model identified the receptor as being in the street and not within the building (Figure 71, Figure 72).

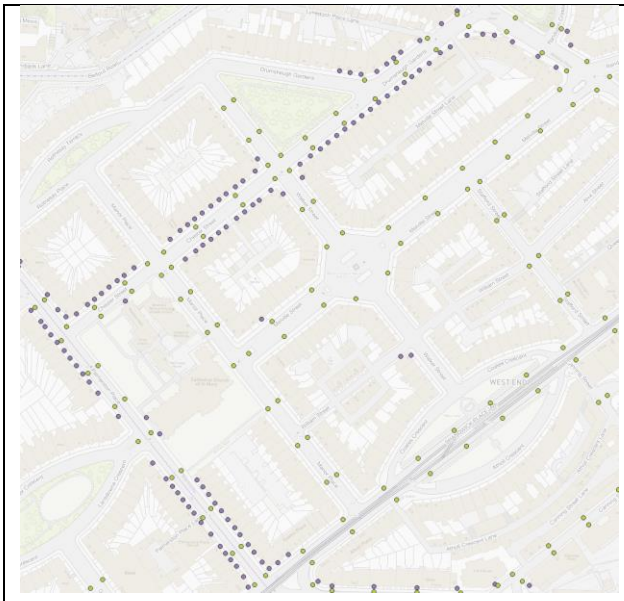


Figure 71: Kerbside points (green) and façade points (blue) for West End (including Palmerston Place/Chester Street)

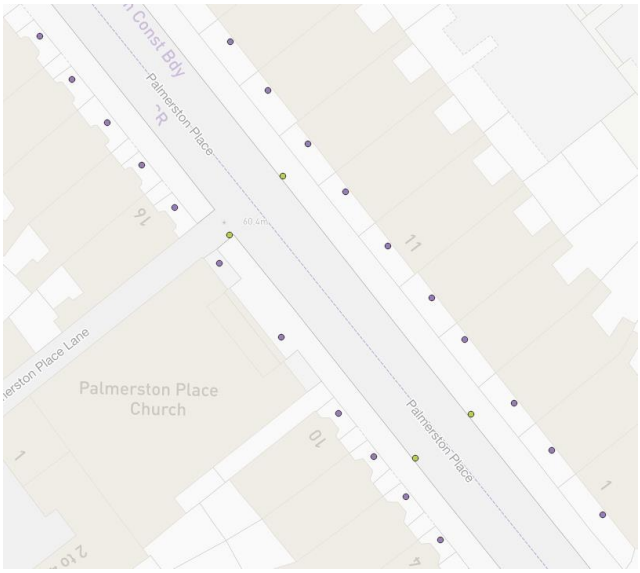


Figure 72: Kerbside points (green) and façade points (blue) for close up on Palmerston Place

Palmerston Place/Chester Street

The model predicts lower concentrations at the façade points of around 5 µg m^{-3} on Palmerston Place and 3 µg m^{-3} on Chester Street/Drumsheugh Gardens.

On Palmerston Place (South), average concentrations at facades are predicted to be 45 µg m^{-3}, though this is expected fall to 34 µg m^{-3} in the 2023 scenario (Table 12).

Façade exceedances are not predicted on Chester Street and concentrations are on the 40 µg m^{-3} threshold on Drumsheugh Gardens (East). No model exceedances are predicted on the section of Drumsheugh Gardens which has a park on the north side of the road (Figure 73).

No exceedances at the kerbside or façade are predicted in the 2023 ‘future’ scenario (Figure 74).

*Table 12: Comparison of predicted NO_2 façade/kerbside concentrations at West End LEZ boundary (with LEZ). **Bold** is an exceedance*

	Average NO_2 Concentrations (µg m^{-3})			
	2019		2023	
	Kerbside	Façade	Kerbside	Façade
Palmerston Place (South)	**50**	**45**	36	34
Palmerston Place (North)	**48**	**42**	35	33
Chester Street	**41**	39	33	31
Drumsheugh Gardens (East)	**44**	**40**	33	31

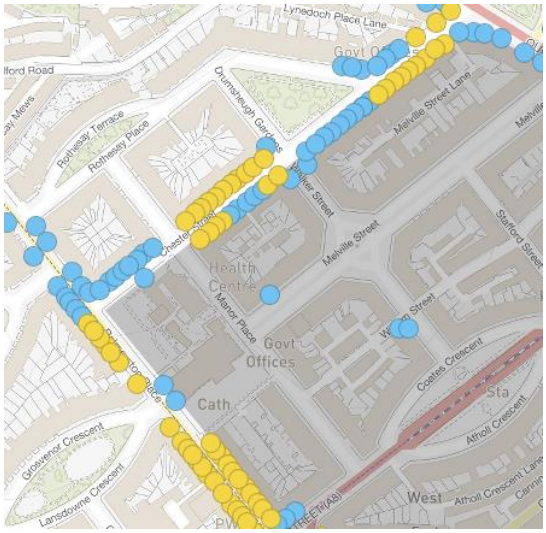


Figure 73: Predicted Concentrations at building façades (2019 LEZ scenario)

Figure 74: Predicted Concentrations at building façades (2023 LEZ scenario)

Around the LEZ boundary

Façade and sensitive receptor modelling also included other locations around and close to the LEZ boundary at a lower density than Palmerston Place and Chester Street. These included schools and nurseries and were agreed with CEC.

This shows that exceedances are predicted at façades in the Base 2019 scenario (Figure 75) and Large LEZ 2019 scenario (Figure 76) on the west and north sides of the LEZ. If an LEZ was in place in 2019, new exceedances at façades would be predicted on Palmerston Place and Chester Street. In the 'future' 2023 scenario (Figure 77), façade exceedances are only predicted on Morrison Street (the pavement is very narrow at some locations on Morrison Street).

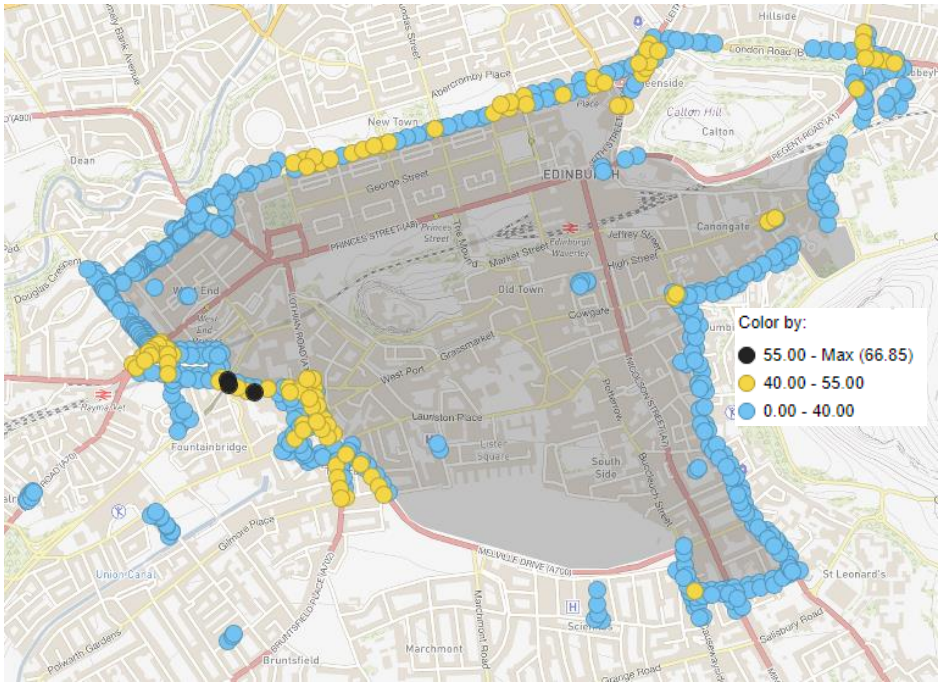


Figure 75: Predicted NO_2 concentrations ($\mu g\ m^{-3}$) at façade receptors (Base 2019)

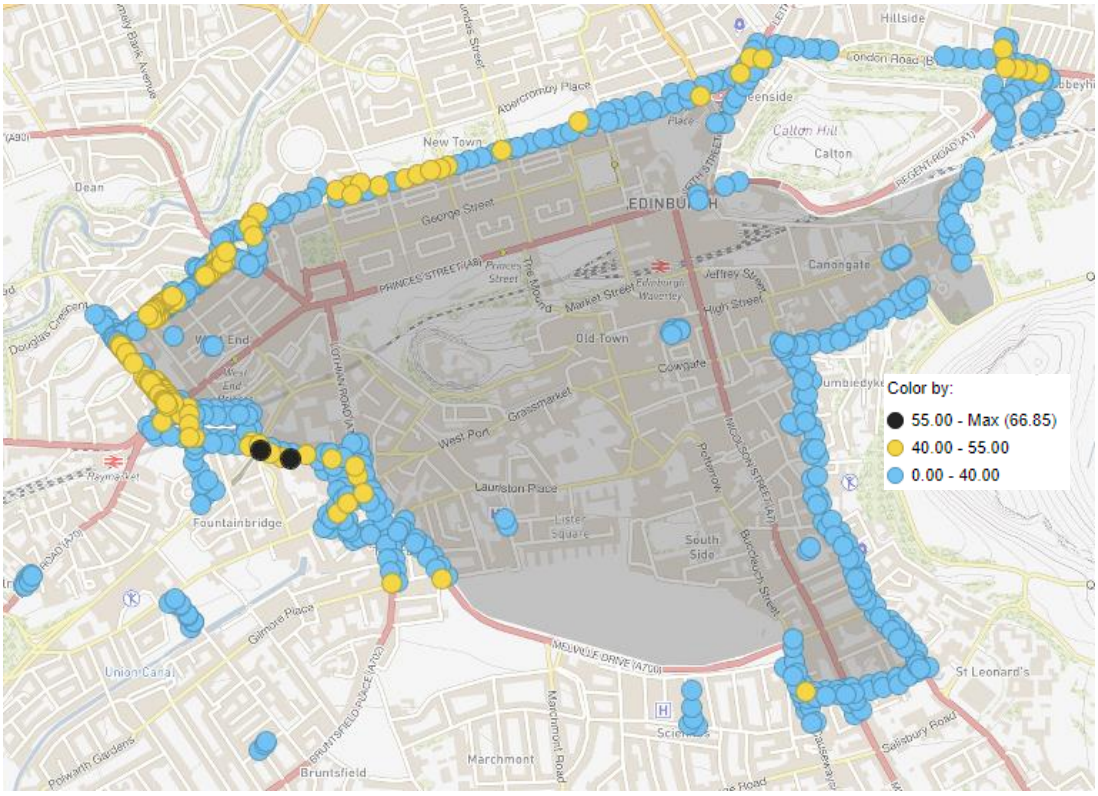


Figure 76: Predicted NO_2 concentrations (µg m^{-3}) at façade receptors (Large LEZ 2019)

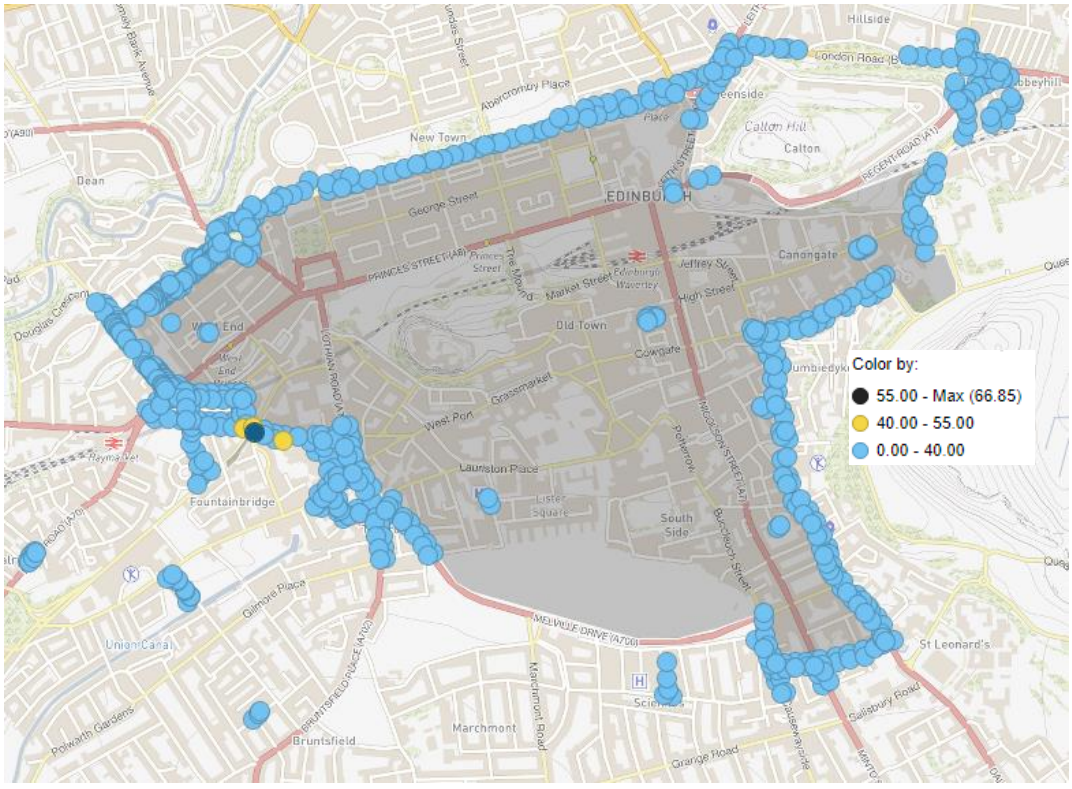


Figure 77: Predicted NO_2 concentrations (µg m^{-3}) at façade receptors (Large LEZ 2023)

Extended Urban Area LEZ Modelling

As outlined previously, traffic modelling for an Extended Urban Area LEZ is technically challenging and has not been carried out (Jacobs, September 2021). An attempt to run the air quality model for the Extended Urban Area LEZ was made, though the following assumptions should be noted:

- 2016 traffic survey data has been used. As modelled traffic data is unavailable, this is the only suitable data that can be used.
- The model assumes that the LEZ rules apply to all vehicles, except cars.
- If this scenario was taken forward, the LEZ rules would still apply to cars in the city centre. There are therefore large uncertainties about vehicle behaviour around the City centre boundary, as only cars would be displaced, whilst LGVs and HGVs would not (as the rules would apply to them city wide). Grace periods would also differ. Therefore, using this approach, model results from suburban areas are most useful.

The model predictions have been compared for 4 suburban areas: Queensferry Road (Barnton), Corstorphine, Leith AQMA and Portobello (Figure 78).

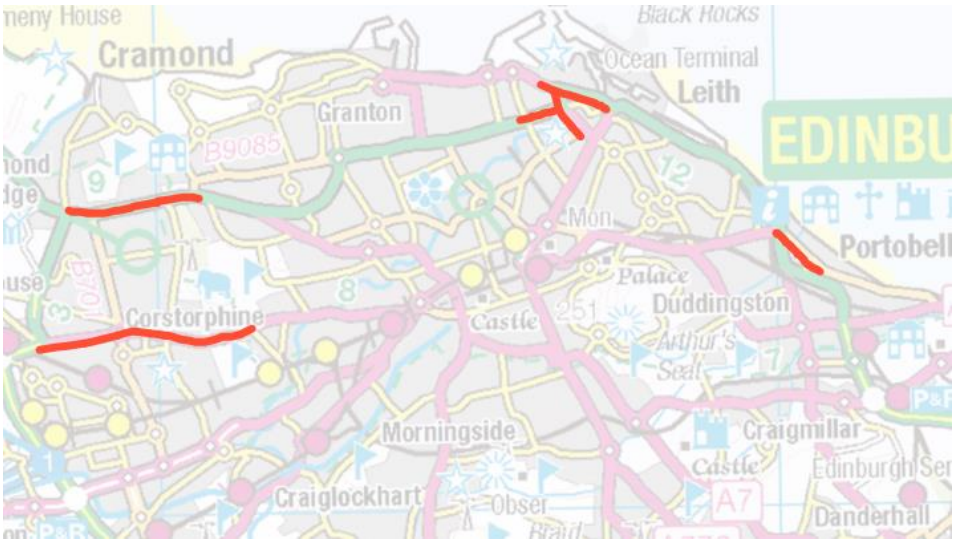


Figure 78: Roads considered in Extended Urban Area LEZ comparison

The results in Table 13 show that although there is a benefit to the Extended Urban Area LEZ option, it is small. Most of these areas are predicted to be already below the 40 µg m^{-3} threshold and the difference in most cases is less than 1 µg m^{-3}. The exception is Queensferry Road (Barnton), where car traffic is dominant and where model exceedances are still predicted.

Table 13: Comparison of NO_2 concentrations (µg m^{-3}) for Extended Urban Area and City Centre LEZ options. Concentrations presented are average kerbside concentrations along roads in Figure 78. ***Bold*** *is an exceedance*

µg m^{-3}	Large City Centre LEZ	Extended Urban Area LEZ
Queensferry Road (Barnton)	**46.5**	**44.9**
Corstorphine	36.2	35.5
Leith AQMA	35.3	33.6
Portobello	31.0	30.3

Concentration Source Attribution

Although emissions within the LEZ are predicted to be from 100% compliant vehicles, emissions from non-compliant vehicles from roads outside the LEZ will still contribute to pollutant concentrations within the LEZ. We can analyse this using NO_x emissions for each vehicle sector (**Note**: this does only look at NO_x emissions from modelled traffic sources and does not include emissions from non-traffic sources).

North Bridge/South Bridge/Clerk Street

Source attribution analysis for concentrations at kerbside points on the Bridges/Clerk Street corridor show that, for the Large LEZ 2019 scenario, emissions from non-compliant traffic (or traffic from outside of the LEZ) will account ~5% of concentrations on this route (Figure 80). Diesel cars are the largest contributor at ~33%, LGV's contribute ~24% and buses contribute ~15% (Figure 79).

In the 2023 'future' scenario, ~2% of NO_x concentrations can be attributed to non-compliant vehicles (Figure 82). Diesel cars remains the largest contributor at 30%, though bus contributions have increase to 21% (Figure 81). It is important to note that total emissions are lower in the 2023 scenario compared to the 2019 scenario.

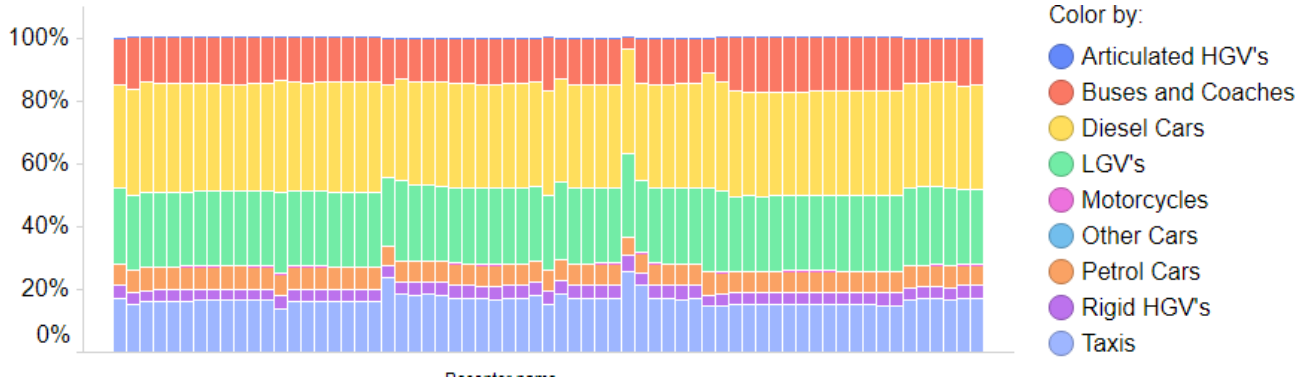


Figure 79: Percentage contribution from each vehicle sector at kerbside points on Bridges/Clerk Street (Large LEZ; 2019)

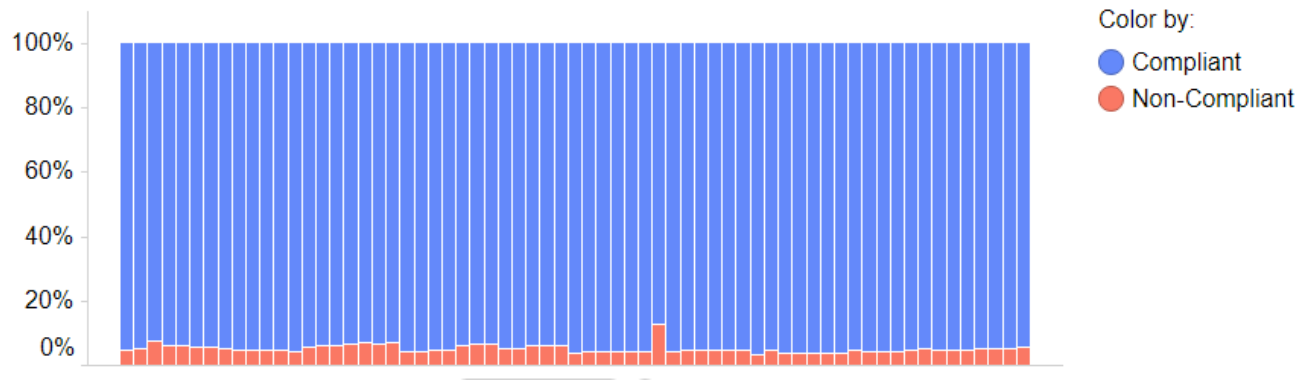


Figure 80: Percentage contribution for compliant at kerbside points highlighted on Bridges/Clerk Street (Large LEZ; 2019)

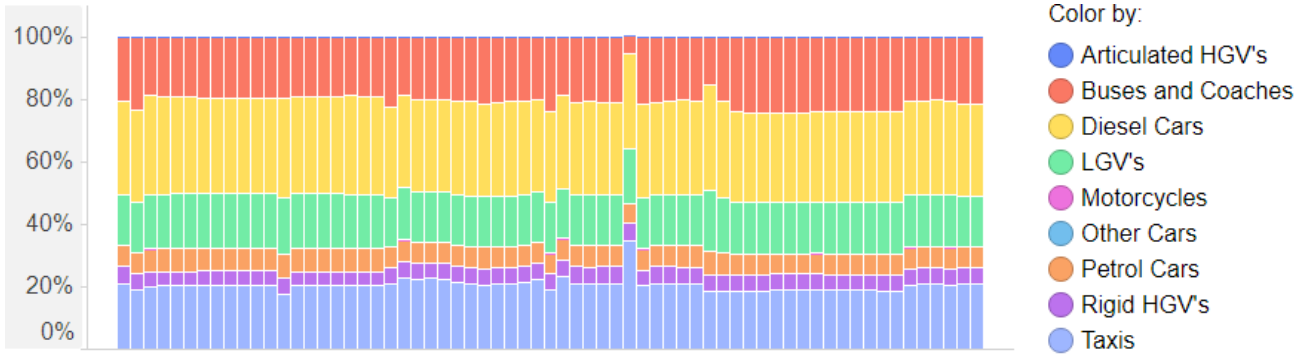


Figure 81: Percentage contribution from each vehicle sector at kerbside points on Bridges/Clerk Street (Large LEZ; 2023 'future')

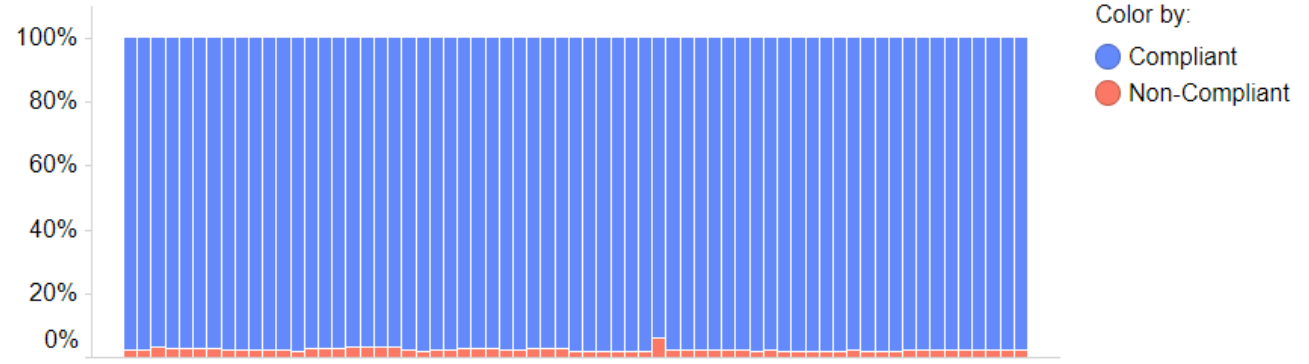


Figure 82: Percentage contribution for compliant at kerbside points highlighted on Bridges/Clerk Street (Large LEZ; 2023 'future')

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Appendix 1: Model Verification

It is important that model predictions are checked against monitored data. Since the SEPA evidence report (SEPA, 2018) was published, ADMS-Urban has been updated to version 5, which includes some changes to the way dispersion in canyons is calculated. Further information is available on the CERC website (www.cerc.co.uk). This analysis is based on fleet composition derived from the 2016 and 2019 ANPR data, supplemented by information gratefully provided by local bus operators.

Variation in model predictions is always expected and can be for many reasons (local dispersion conditions may be complex, variation in local fleet composition etc). For both years, the same emission factor database has been used (EfTv8). It is worth noting that the effect of meteorology is important, and even if emissions decline, if the average wind speed is lower than for other years, concentrations may not fall at the same rate.

Automatic Monitors

At the Automatic Monitors, model performance is generally good. For 2016, both model versions perform well and are broadly consistent, except for Salamander Street which may be due to local factors (Figure 83, Figure 84).

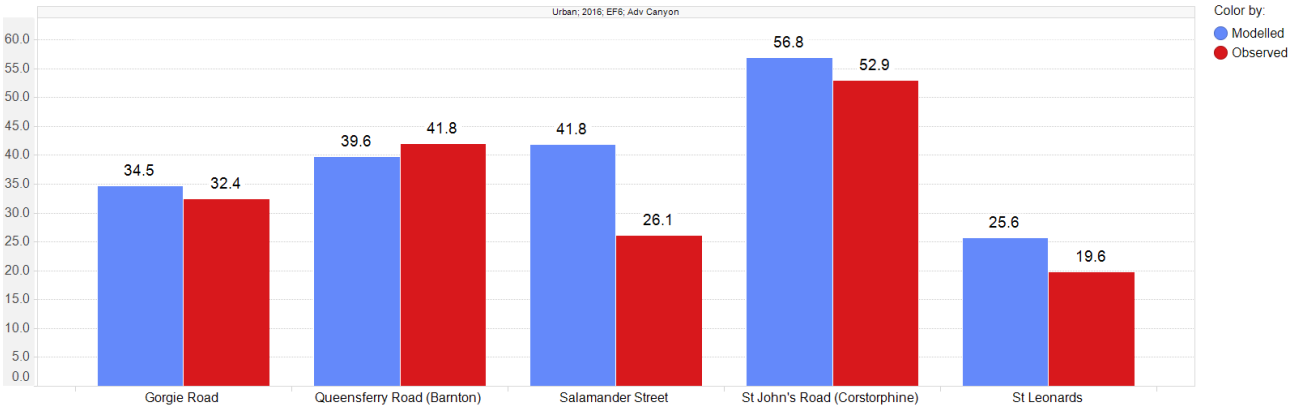


Figure 83: Modelled and Measured 2016 NO_2 Concentrations at Automatic Monitors (ADMS-Urban 4.2)

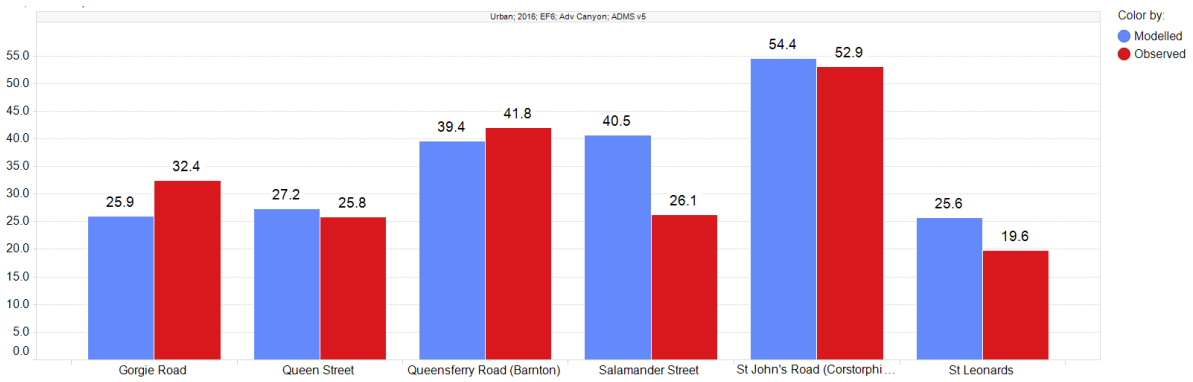


Figure 84: Modelled and Measured 2016 NO_2 Concentrations at Automatic Monitors (ADMS-Urban 5.0)

For 2019, observed and modelled concentrations have fallen (Figure 85, Figure 86). Note that 2016 traffic flow data has been retained as this has been used in traffic modelling.

At the Gorgie Road monitor a difference in model predictions is observed between the 2 ADMS-Urban model versions. The only difference is the model version, and this suggests that the changes in the way ADMS-Urban deals with canyons may be the reason. This is an example of model uncertainties, especially where flows may be complex as is the case at the Gorgie Road monitor. ADMS-Urban version 5 performs well for Gorgie Road.

At Queensferry Road, the ADMS-Urban performs well for both years and model versions (this is more open, with no canyon effects to account for).

At the St John's Road monitor, ADMS-Urban predicts NO_2 concentrations to be marginally lower in 2019, despite NO_2 and NO_x emissions used in the model being 12% and 16% lower respectively than in 2016.
This may be due to 2 factors:

- Meteorological and chemistry effects (if there is available Ozone and NO, secondary NO_2 will be formed).
- Fleet composition, derived from ANPR, used to calculate emissions is an average for all of Edinburgh. Local bus operators (e.g. Lothian, Citylink) who use the St John's Road corridor placed Euro VI buses on this route in response to high concentrations at this monitor.

Therefore, on this road, bus emissions may be lower than has been calculated for 2019, thus leading to a model overestimate.

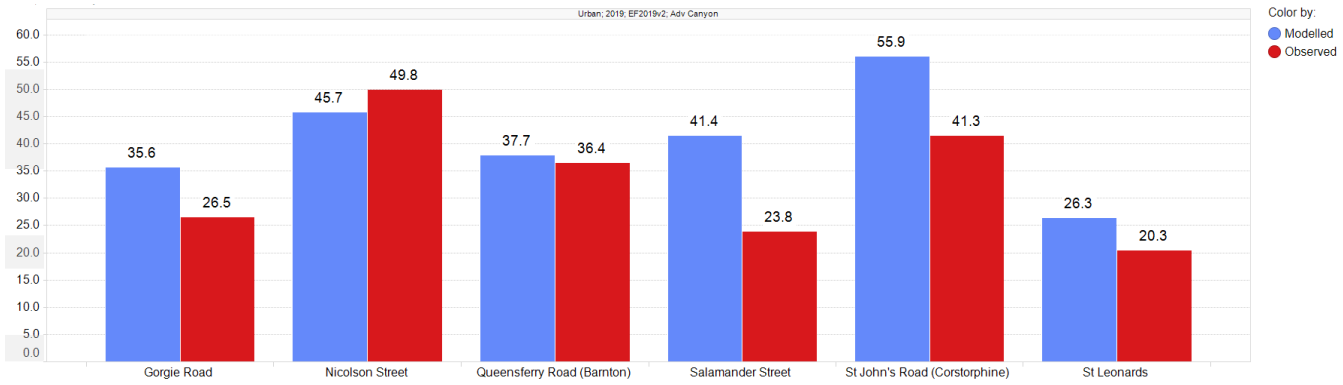


Figure 85: Modelled and Measured 2019 NO_2 Concentrations at Automatic Monitors (ADMS-Urban 4.2)

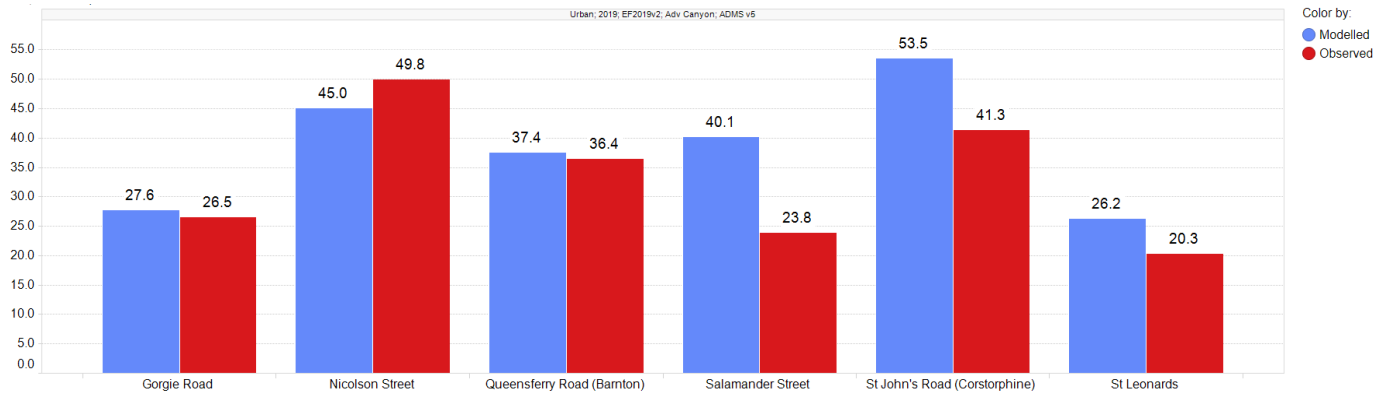


Figure 86: Modelled and Measured 2019 NO_2 Concentrations at Automatic Monitors (ADMS-Urban 5.0)

Diffusion Tubes

Monitoring using Diffusion Tubes has the advantage that they can be put in many locations for minimal cost, however reported diffusion tube concentrations have greater uncertainties than the automatic monitors. It is still important to test the model performance against the diffusion tube data. These data are reported by City of Edinburgh Council in their Annual Air Quality Report (City of Edinburgh Council, 2020).

Almost all model predictions are within a factor of 2 of the measured diffusion tube concentrations and many are close to the 1:1 line (Figure 87), though more points are above the 1:1 line than below which suggest the model may be slightly over-estimating. Further work will be carried out on model performance.

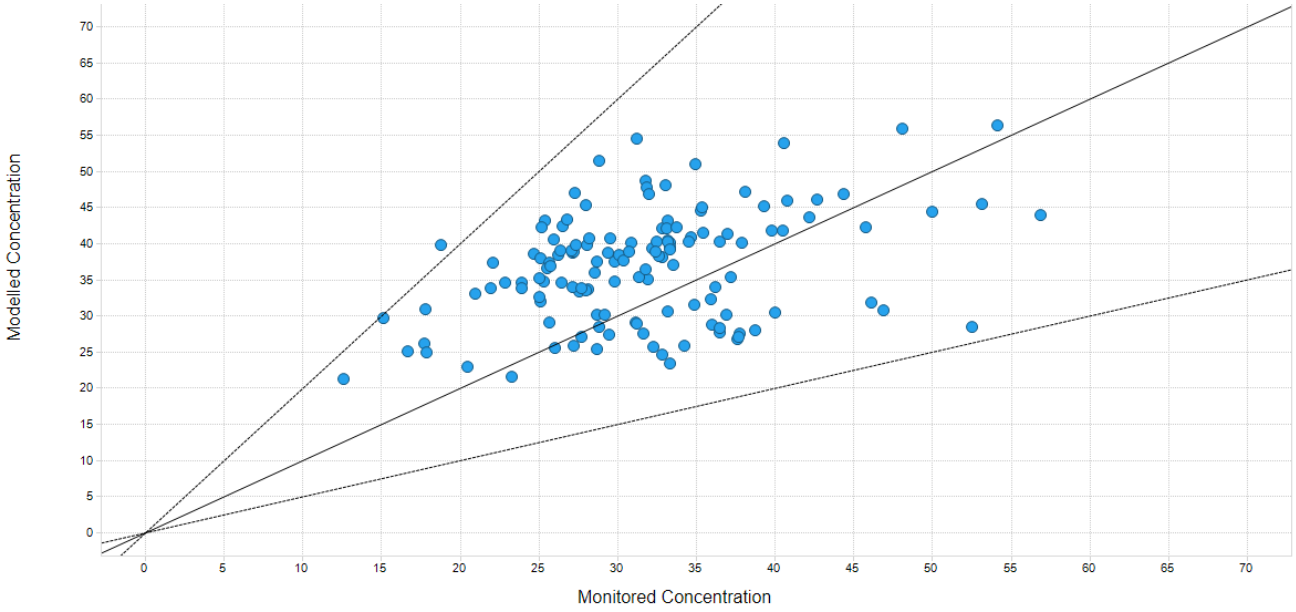


Figure 87: Modelled v Monitored NO_2 Concentration Scatter Plot for Diffusion Tube Locations for 2019 (ADMS v5; Urban Background; Bias-adjusted diffusion tube data)

Appendix 2: Traffic Model Data for Air Quality Modelling

A fuller summary is provided here on the modelled traffic data which is a key input for the air quality modelling work.

Large LEZ Option

Diesel Cars

- **2019**
    - **Within the LEZ:** Diesel Car flows decline on most roads (Table 14, Figure 89) and are 100% compliant (Figure 91).
    - **On the LEZ boundary:** Large increases in flows are predicted at the West End (75-90%), and compliance rates will fall to between 8 and 23% (Table 14). On the East side of the boundary, the impact is not as significant, where flows increase by 36% and compliance rates fall to 38% (Figure 91).
- **2023 'Future':**
    - **Within the LEZ:** Diesel Car flows increase on Lothian Road compared to the Base 2019 scenario. This is likely to be due to increased numbers of compliant diesel cars, and CCT changes forcing diesel cars to re-route.
    - **On the LEZ boundary:** At the West End, increases in flows are still predicted (Table 14) when compared to the 2019 Base scenario (34-45%), but it is not as large as the 2019 LEZ scenario. Compliance levels have risen from 8-23 % to 52-61%.

Petrol Cars

- **2019:**
    - **Within the LEZ:** Petrol car flows increase and decrease within the LEZ (Figure 90). As a higher proportion (88%) of petrol cars are compliant (Table 6), they are likely to travel through the LEZ, and avoid routes where non-compliant cars are forced to take. Petrol car compliance within the LEZ is 100% (Figure 92).
    - **On the LEZ boundary:** At the West End LEZ boundary, petrol car flows are predicted to be lower (up to 31% less) and compliance rates are also predicted to fall to between 44 and 72% (Table 14). On the East side of the boundary, there is an increase in petrol traffic, though compliance rates remain high (Figure 90, Figure 92).

- **2023 'Future'**:
    - **On the LEZ boundary:** At the West End LEZ boundary, a small increase in petrol car flow is predicted on Palmerston Place, but flows are still predicted to be lower on Chester Street (Table 14). Compliance levels are predicted to be high on both roads.

LGV's

- **2019:**
    - **Within the LEZ:** LGV flows are expected to decline as non-compliant LGV's divert around the LEZ. Compliance will be 100% (Table 15, Figure 93, Figure 94).
    - **On the LEZ boundary:** At the West End LEZ boundary, LGV flows are predicted to double (94-107% increases) and compliance rates will fall to between 13 and 19% (Table 15). On the East side of the boundary (Abbeyhill), although a 20% flow increase is predicted, compliance rates also increase from 41% to 50% (Table 15).
- **2023 'Future'**:
    - **On the LEZ boundary:** At the West End LEZ boundary, LGV flows are still predicted to be 27-38% higher than the Base 2019 scenario, however compliant rates have also increased (Table 15).

HGV's

- **2019:**
    - **Within the LEZ:** HGV flows are expected to decline (Figure 95) and compliance is 100% (Figure 96).
    - **On the LEZ boundary:** At the West End LEZ boundary, HGV flows are predicted to increase (Figure 95) by up to 113%, with compliance rates falling to 38% (Table 15).
- **2023 'Future':**
    - **On the LEZ boundary:** At the West End LEZ boundary, HGV flows are still predicted to be higher than the Base 2019 scenario, however, compliant rates are predicted to be 77% (Table 15).

*Table 14: Changes in Car traffic and compliance rates for the **Large** LEZ option when compared to the 2019 Base scenario*

	Diesel Cars						Petrol Cars					
	% change		Flow Change		Compliance (%)		% change		Flow Change		Compliance (%)	
	2019	2023	2019	2023	2019	2023	2019	2023	2019	2023	2019	2023
Palmerston Place	+75%	+34%	+4716	+2122	23%	61%	-2%	+1%	-182	+77	72%	99%
Chester Street	+90%	+45%	+2783	+1384	8%	52%	-37%	-7%	-1430	-268	44%	99%
Lothian Road	-10%	+5%	-790	+468	100%	100%	+22%	+20%	+2342	+2047	100%	100%
Abbeyhill	+36%	+26%	+2096	+1521	38%	75%	+8%	+13%	+623	+1004	85%	100%

*Table 15: Changes in LGV and HGV traffic and compliance rates for the **Large** LEZ option when compared to the 2019 Base scenario*

	LGV						HGV					
	% change		Flow Change		Compliance (%)		% change		Flow Change		Compliance (%)	
	2019	2023	2019	2023	2019	2023	2019	2023	2019	2023	2019	2023
Palmerston Place	+107%	+38%	+1701	+601	19%	61%	+113%	+35%	+513	+161	38%	77%
Chester Street	+94%	+27%	+1145	+330	13%	57%	+46%	+14%	+165	+50	32%	78%
Lothian Road	-11%	+4%	-328	+138	100%	100%	+16%	+19%	+87	+106	100%	100%
Abbeyhill	+22%	+12%	+431	+239	51%	84%	+18%	+9%	+68	+33	68%	92%

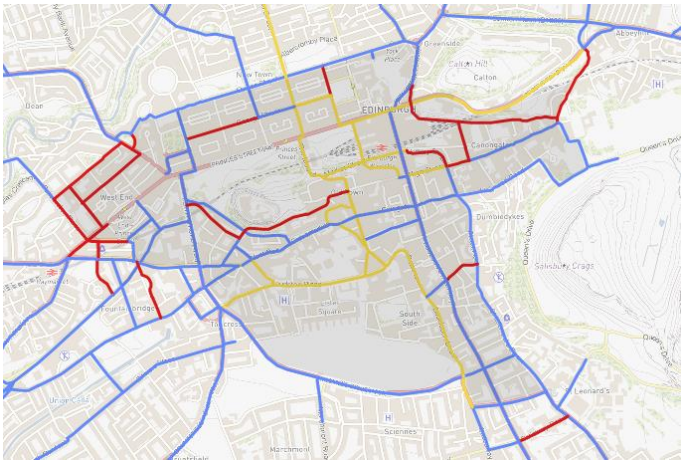


Figure 88: Total Car Flow Relative Differences (2019) for Large LEZ option, when compared to Base scenario

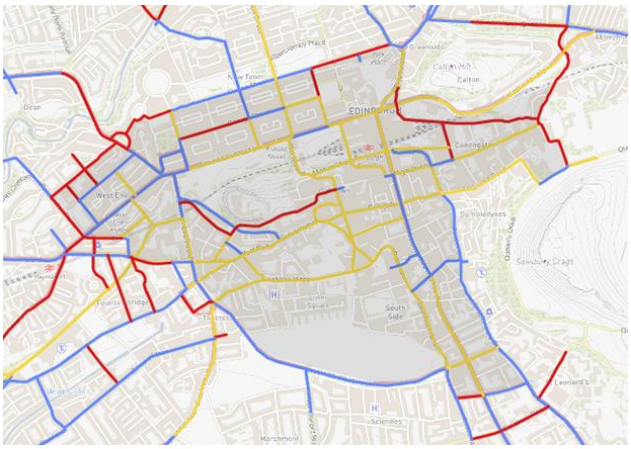


Figure 89: Total Diesel Car Traffic Flow Relative Differences (2019) for Large LEZ option, when compared to Base scenario

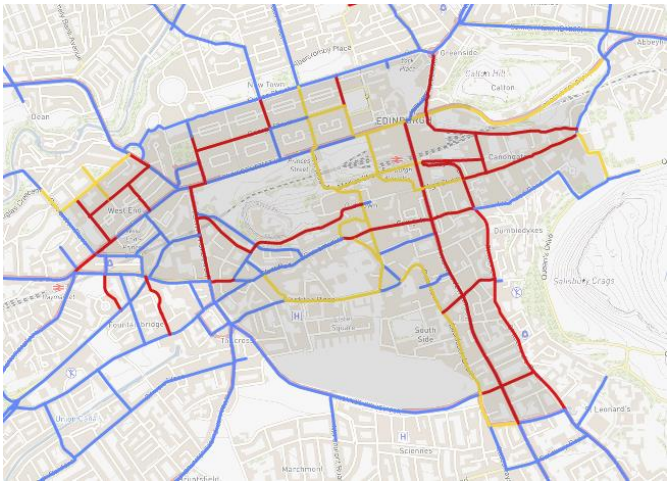
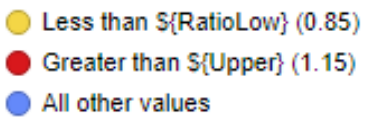


Figure 90: Total Petrol Car Traffic Flow Relative Differences (2019) for Large LEZ option, when compared to Base scenario



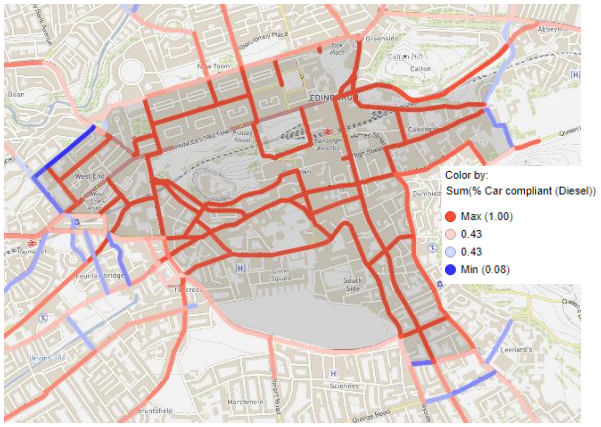


Figure 91: Compliance % of Diesel Cars on each road link for the Large LEZ option (2019). 43% is Base 2019 compliance value

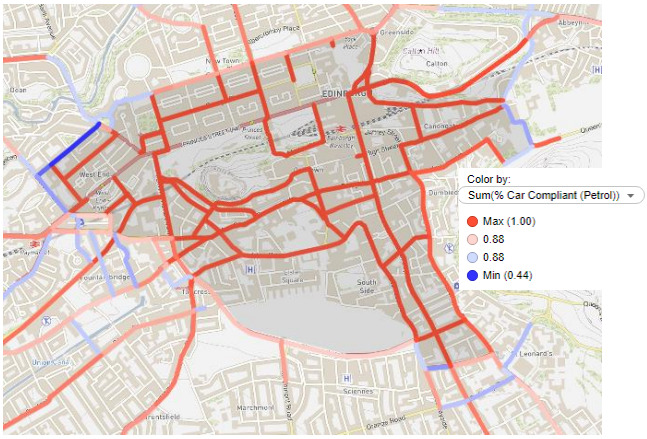


Figure 92: Compliance % of Petrol Cars on each road link for the Large LEZ option (2019). 88% is Base 2019 compliance value

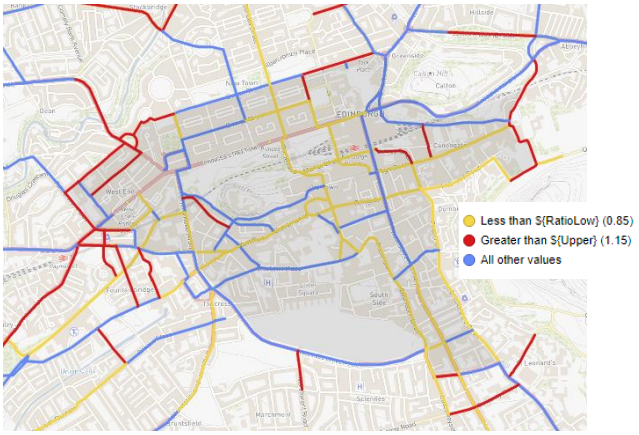


Figure 93: LGV Flow Relative Differences (2019) for Large LEZ option, when compared to Base scenario

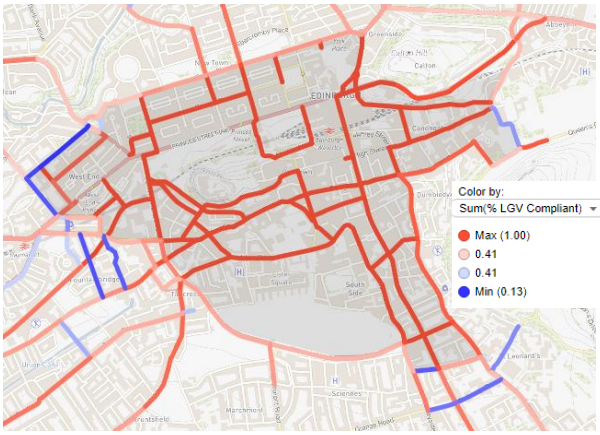


Figure 94: Compliance % of LGV's on each road link for the Large LEZ option (2019). 41% is the 2019 compliance value for LGV's

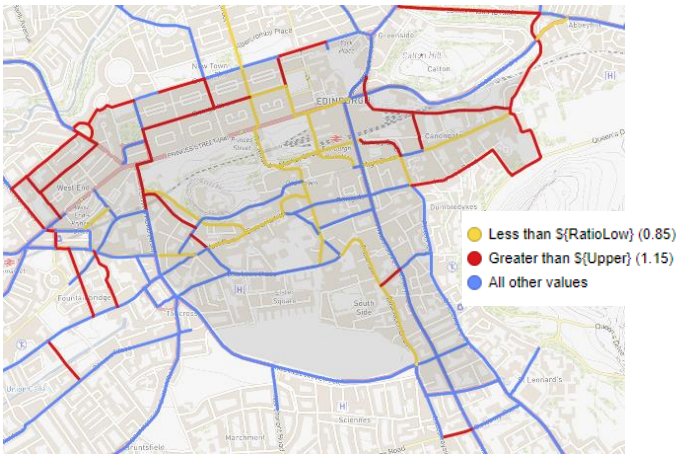


Figure 95: HGV Flow Relative Differences (2019) for Large LEZ option, when compared to Base scenario.

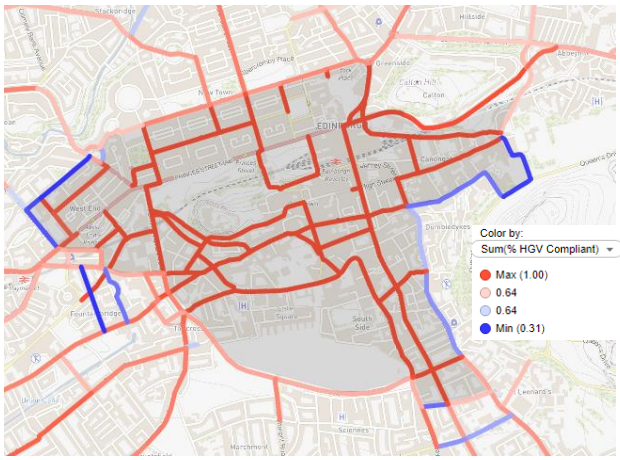


Figure 96: Compliance % of HGV's on each road link for the Large LEZ option (2019). 41% is the 2019 compliance value for HGV's.

Small LEZ Option

The Small LEZ option has the West End boundary on Lothian Road (Figure 2). In this case, displacement around the west side of the LEZ is more likely to be influenced by CCT changes than the LEZ. On the East side of the LEZ, the boundary is the same as the Large LEZ option, so the focus below is the West side of the LEZ boundary.

Diesel Cars

- **2019:**
    - **Lothian Road:** On Lothian Road (not in LEZ), diesel car flows increase by 20%. The compliance rate is 56% (Table 16), which is higher than the Base 2019 scenario (42.6%, Table 6), but lower than 100% compliance which would occur if the Large LEZ was selected.
    - **Palmerston Place/Chester Street:** On Palmerston Place and Chester Street, 13-25% flow increases are predicted, which is much smaller than the Large LEZ scenario (Table 16). Compliance rates are also much higher (46-49%).
- **2023 'Future':**
    - **Lothian Road:** Diesel Car flow is expected to be 15% higher than the Base 2019 scenario, however, compliance rates are much higher at 82% (Table 16).
    - **Palmerston Place/Chester Street:** Only a small change in traffic flows when compared to 2019 LEZ scenario, though compliance rates will be around 80% (Table 16). This suggests that the LEZ is having a small impact on traffic flows on the west side of the small LEZ, and that CCT changes have a larger influence.

Petrol Cars

- **2019:**
    - **Lothian Road:** A 10% increase in petrol car flows is predicted though compliance rates are 90% (Table 16; Figure 99).
    - **Palmerston Place/Chester Street:** A 13-15% increase in petrol car flows is predicted though compliance rates are 90% (Table 16; Figure 99).
- **2023 'Future':** There is little difference in petrol flows, though compliance rates are expected to be 100% (Table 16).

LGV's

- **2019:**
    - **Lothian Road:** A 21% increase in flow is predicted, though compliance is expected to increase to 56% (Table 17, Figure 100, Figure 101).
    - **Palmerston Place/Chester Street:** A 7-9% increase in flow is predicted, though compliance rates are expected to increase to 56% (Table 17, Figure 100, Figure 101).
- **2023 'Future':**
    - **Lothian Road:** A 13% increase in flow is predicted, though compliance is expected to increase to 85% (Table 17).
    - **Palmerston Place/Chester Street:** Flows are expected to be 10-11% higher than the Base 2019 scenario, though compliance is predicted to increase to around 85% (Table 17).

HGV's

- **2019:**
    - **Lothian Road:** A 29% increase in flow is predicted, though compliance is expected to increase to 76% (Table 17, Figure 102, Figure 103).
    - **Palmerston Place/Chester Street:** A 15% increase in flow is predicted on Palmerston Place, though only 2% increase is predicted on Chester Street (Table 17, Figure 102, Figure 103).
- **2023 'Future':** There is little difference in HGV flows, though compliance rates are expected to increase to 93% (Table 17)**.**

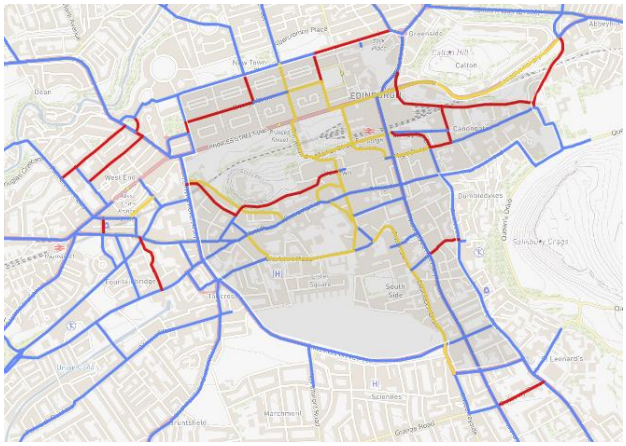


Figure 97: Total Car Flow Relative Differences (2019) for Small LEZ option, when compared to Base scenario.

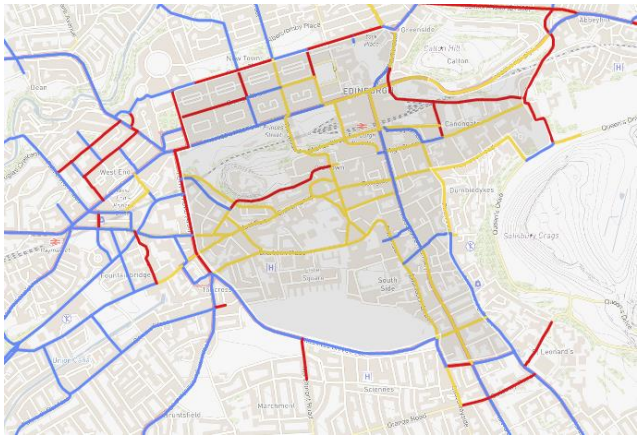


Figure 98: Total Diesel Car Traffic Flow Relative Differences (2019) for Small LEZ option, when compared to Base scenario.

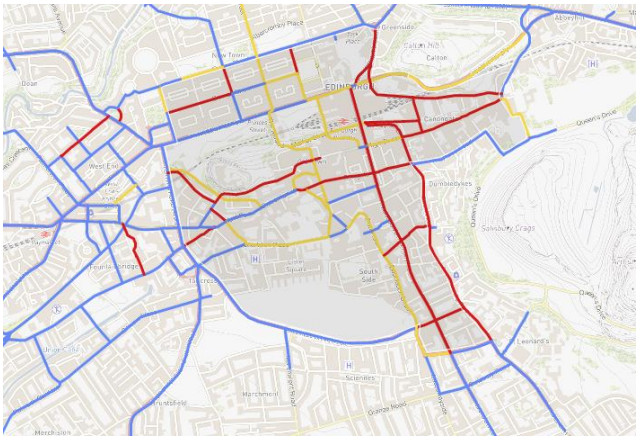


Figure 99: Total Petrol Car Traffic Flow Relative Differences (2019) for Small LEZ option, when compared to Base scenario.

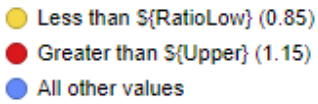


*Table 16: Changes in Car traffic and compliance rates for the **Small** LEZ option*

	Diesel Cars						Petrol Cars					
	% change		Flow Change		Compliance (%)		% change		Flow Change		Compliance (%)	
	2019	2023	2019	2023	2019	2023	2019	2023	2019	2023	2019	2023
Palmerston Place	+13%	+10%	+790	+625	49%	80%	+15%	+10%	+525	+785	90%	100%
Chester Street	+25%	+18%	+706	+539	46%	79%	+13%	+14%	+992	+529	88%	100%
Lothian Road	+20%	+15%	+1666	+1280	56%	82%	+10%	+12%	+1036	+1265	90%	100%
Abbeyhill	+32%	+24%	+1869	+1420	42%	77%	+12%	+14%	+917	+1091	87%	100%

*Table 17: Changes in LGV and HGV traffic and compliance rates for the **Small** LEZ option*

	LGV						HGV					
	% change		Flow Change		Compliance (%)		% change		Flow Change		Compliance (%)	
	2019	2023	2019	2023	2019	2023	2019	2023	2019	2023	2019	2023
Palmerston Place	+9%	+11%	+145	+180	51%	84%	+15%	+12%	+68	+53	74%	94%
Chester Street	+7%	+10%	+88	+121	48%	83%	+2%	+1%	+7	+4	71%	93%
Lothian Road	+21%	+13%	+661	+410	56%	85%	+29%	+21%	+157	+113	76%	94%
Abbeyhill	+15%	+10%	+286	+206	56%	86%	+10%	+8%	+38	+29	74%	94%

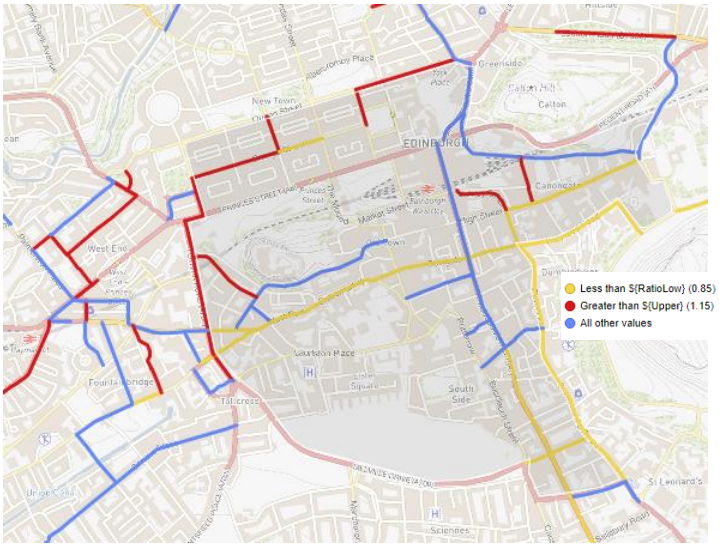


Figure 100: LGV Flow Relative Differences (2019) for Small LEZ option, when compared to Base scenario.

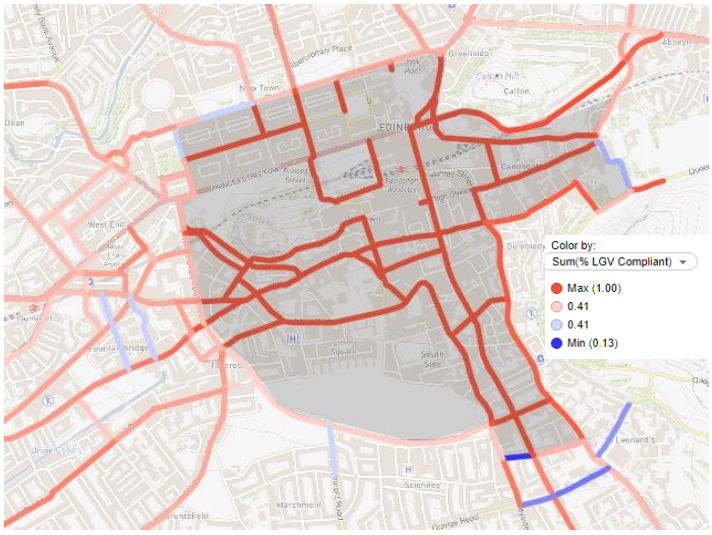


Figure 101: Compliance % of LGV's on each road link for the Small LEZ option (2019). 41% is the the 2019 compliance value for LGV's.

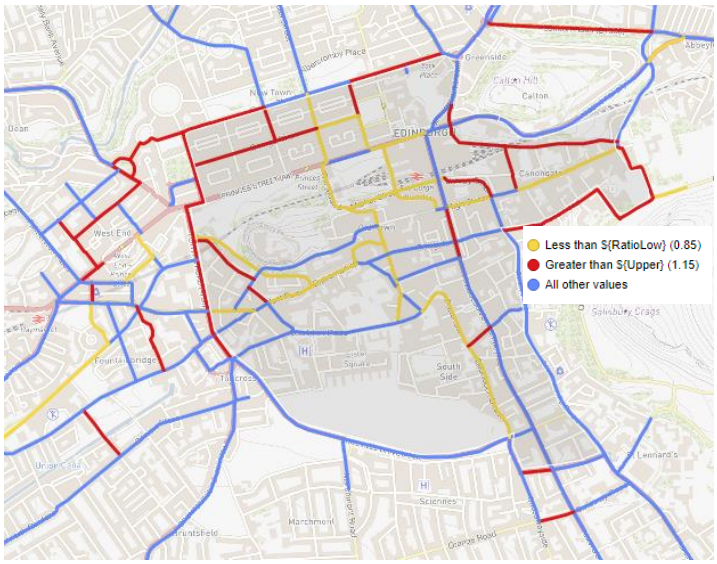


Figure 102: HGV Flow Relative Differences (2019) for Small LEZ option, when compared to Base scenario.

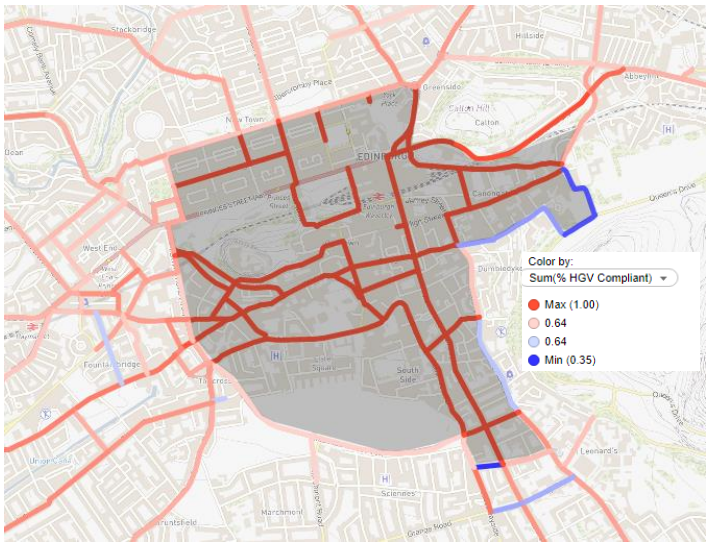


Figure 103:Compliance % of HGV's on each road link for the Small LEZ option (2019). 64% is the 2019 compliance value for HGV's.

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If you are a user of British Sign Language (BSL) the Contact Scotland BSL service gives you access to an online interpreter enabling you to communicate with us using sign language.

http://contactscotland-bsl.org/

SEPA
Scottish Environment Protection Agency
Buidheann Dìon Àrainneachd na h-Alba

APPENDIX D – LEZ Adaptation Funding & Policy Update

Adaptation Funding

1.1 Across the bus/coach sector the Scottish Government will continue to provide funds for retrofit via BEAR4 in 21/22. The Scottish Government has announced the Zero Emission Bus Fund (ScotZEB) allocating £50 million across Scotland in 21/22, to decarbonise public transport. The LEZ project will support Lothian Buses in applications that encourage zero emission routes to pass through the LEZ/ AQMAs.

1.2 In the 21/22 financial year the following LEZ support funds have been allocated to low income households and microbusinesses and funds for taxis:

1.2.1 £110,000 for household non-compliant vehicle disposal grants and 'travel better' vouchers (Total to date: ~£190,000)

1.2.2 £44,000 for businesses non-compliant vehicle disposal grants (Total to date: ~£365,000)

1.2.3 £14,000 for taxi LPG and exhaust retrofits (Total to date: ~£314,000)

Policy Development

1.3 As LEZs are implemented across Scotland there is a requirement to better understand the implications for monitoring and the future of LEZs, in the context of the Council's 2030 net zero target. The Council will continue to engage with Transport Scotland and other local authorities to develop best practice for monitoring the air quality impacts of the LEZ.

1.4 Beyond Scotland, the positive impact of LEZs has been evidenced. London's Ultra LEZ has contributed to a 44% reduction in roadside nitrogen dioxide since 2019 and is expanding its boundary in October 2021. England's Clean Air Zones (CAZs) have begun enforcement in Birmingham and Bath, with Portsmouth to follow by end of 2021. Note: England's CAZs allows drivers of non-compliant vehicles to enter for a daily charge (e.g. £12.50), compared with Scotland's LEZ penalty approach.

1.5 In July 2021 Scottish Government published an update to the Cleaner Air for Scotland (CAFS) Strategy 2 and "will look at opportunities for promoting zero carbon city centres within the LEZ structure". The Council supports the exploration of opportunities beyond the existing framework, following best practice of other cities, to achieve net zero by 2030.

1.6 Oxford City Council has approved a trial for a City Centre Zero Emission Zone due to begin early in 2022 and will mandate an access charge for internal combustion engine (ICE) vehicles. 14 Dutch urban municipalities are proposing Zero Emission Zones applying to commercial vehicles only, with implementation from 2025.

APPENDIX E - LEZ Delivery – Estimated Costs & Funds Available

Revenue Costs	£ (Estimated)	Funding Source
• Communications/ engagement (public consultation) • Impact assessments • Air quality/ traffic modelling	145,000	Transport Scotland (21/22 FY)
• Legal	20,000	Unfunded
• Operation/maintenance	400,000 per annum	Unfunded

Capital Costs	£ (Estimated)	Funding Source
• Design and delivery of LEZ enforcement strategy	900,000	Transport Scotland (21/22 FY)
• Signage • Associated work	300,000	Transport Scotland (22/23 FY)
• Network management mitigations	470,000	Unfunded

Section 4 Integrated Impact Assessment

Summary Report Template

Each of the numbered sections below must be completed

Interim report	x	Final report		(Tick as appropriate)

1. Title of proposal

Edinburgh Low Emission Zone

2. What will change as a result of this proposal?

This report provides an update to the IIA which was undertaken in June 2021, incorporating finding of the recent consultation. This IIA is supplemented by a detailed impact assessment and fleet analysis for the Edinburgh Travel to Work Area, providing more detail on the baseline and impacts of the proposed scheme.

Following on from initial consultation in 2019, the preferred LEZ scheme was advertised for 12 week public consultation from 28 June to 20 September 2021. As part of this process, further engagement was held with key stakeholders, both statutory and non-statutory, to ensure the LEZ is successful at achieving its objectives.

In 2015, the Scottish Government made a commitment to significantly improve Scotland's air quality through the 'Cleaner Air for Scotland' strategy, where Low Emission Zones (LEZ) were identified as a potential tool within the strategy. LEZs are to be introduced across Glasgow, Edinburgh, Dundee and Aberdeen between February 2022 and May 2022. Plans to implement LEZs were temporarily paused due to the COVID-19 outbreak, but work has now restarted.

The air quality standard the LEZs are based on are the Euro emissions standards. To enter/exit/operate within a LEZ in Scotland, a diesel vehicle will need to be Euro 6 (generally those registered from September 2015) and a petrol vehicle Euro 4 (generally those registered from January 2006).

Vehicles that do not meet the emission standard set for a LEZ will be penalised for entering the zone. A penalty charge will be payable by the vehicle's registered keeper when a non-compliant vehicle enters the LEZ. The initial penalty charge for all non-compliant vehicles is set at £60, reduced by 50% if it is paid within 14 days. A surcharge is also proposed whereby the penalty amount doubles with each subsequent breach of the rules detected in the same LEZ. The penalty charges are capped at £480 for cars and light goods vehicles (LGVs), and £960 for buses and heavy goods vehicles (HGVs). Where there are no further breaches of the rules detected within the 90 days following a previous violation, the surcharge rate is reset to the base tier of charge i.e. £60.

The proposed boundary is the originally proposed City Centre boundary as presented in 2019 for consultation with minor amendments. The Extended Urban Area (formally named 'Citywide') boundary, as presented in 2019, has been excluded from the proposal following options appraisal. The proposed grace period for all vehicles (for residents and non-residents) is two years, which differs from the 2019 proposal, where a one year grace period was proposed for commercial-type vehicles (HGVs, LGVs, buses and minibuses, coaches and taxis), with a proposal of four years for cars. Enforcement of the LEZ begins in 2024 after the grace period expires.

Exemptions apply consistently across all Scottish LEZs, as set out in the Regulations. The following exemptions must be applied to the LEZ at all times:

Vehicle type of classification Description	**Vehicle type of classification Description**
Emergency Vehicles	For or in connection with the exercise of any function of: -the Scottish Ambulance Service -the Scottish Fire and Rescue Service, -Her Majesty's Coastguard, and -the National Crime Agency.
Military Vehicles	-Vehicles belonging to any of Her Majesty's forces; or used for the purposes of any of those forces
Historic Vehicles	-Vehicles which are 30 years old or older.
Vehicles for Disabled Persons	-Vehicles registered with a 'disabled' or 'disabled passenger vehicles' tax class; and/or -Vehicles being used for the purposes of the 'Blue Badge Scheme'
Showman Vehicles	-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

Several grants and loans are available which are funded Transport Scotland and administered by the Energy Saving Trust, to supports individuals and businesses affected by the LEZ.

- **Low Emission Zone Support Fund and Travel Better funding –** Offers a grant of £2000 for low-income households to take older, more polluting vehicles off the road**.** To be eligible, households must meet all the following criteria; be on specific means tested benefits (listed below), own a non-compliant car (which has been owned by them for at least 12 months with no outstanding finance), and live within a 20km radius of a planned LEZ.

  The list of eligible benefits are as follows:

  - Attendance Allowance
  - Carer's Allowance
  - Child Tax Credit; Council Tax Benefit (excluding 25 per cent discount)
  - Disability Living Allowance
  - Employment and Support Allowance
  - Income-based Job Seeker Allowance
  - Income Support; Pension Credit
  - Personal Independence Payment
  - Universal Credit
  - Working Tax Credit.

  Eligible households which have successfully claimed, can also apply for a further £1,000 Travel Better funding for sustainable travel alternatives. Eligible travel measures include bus passes, train season tickets, new and used bikes, as well as car club membership and credits.

- **Low Emission Zone Support Fund for Businesses** - Micro businesses and sole traders can apply for a £2,500 grant towards the safe disposal of vehicles that do not meet the zone standards. Businesses must meet all the following criteria; have an operating site within 20km of the planned zone, own a non-compliant vehicle (they must have owned the vehicle for at least 12 months and utilised it for business operational purposes) and meet the definition of a micro business (employ nine or fewer full-time employees and have a turnover of £632,000 or less, or a balance sheet of up to £316,000 in the preceding and current financial year).

- **Low Emission Zone Retrofit Fund** - Provides micro businesses and sole traders, who operate within 20km of the planned LEZ, with support to retrofit their existing non-compliant vehicles with Clean Vehicle Retrofit Accreditation Scheme (CVRAS) approved solutions that meet the minimum proposed standards of the LEZ. Businesses must meet all the following criteria; meet the definition of a microbusiness (employ nine or fewer full-time employees and have a turnover of £632,000 or less, or a balance sheet of up to £316,000 in the preceding and current financial year), must not be VAT registered, must own a non-compliant vehicle which is no more than 13 years old (they must have owned it for at least 12 months), and the vehicle must operate at least weekly in the planned LEZ. In addition, the vehicle must also have an approved CVRAS retrofit solution available for the exact make and model and be one of the following:
    - Wheelchair accessible taxi
    - Light commercial vehicles – vehicles designed to carry goods that weight less than 3.5 tonnes
    - Heavy goods vehicles – vehicles designed to carry goods that weigh 3.5 tonnes or more
    - Refuse collection vehicles – vehicles specially designed to collect and transport solid waste.

  Grants are available to cover up to 80% of the cost of a retrofit solution as follows:
    - Up to £5,000 per light commercial vehicle and wheelchair accessible taxi installing retrofit exhaust after-treatment systems.
    - Up to £10,000 per wheelchair accessible taxi installing re-powering technology.
    - Up to £16,000 per heavy goods vehicle or refuse collection vehicle.
- **The Bus Emissions Abatement Retrofit (BEAR) Programme** – Four rounds of funding have been awarded to bus and coach operators to support the costs of installing retrofit technology to improve diesel emissions to a Euro VI standard or better, or to convert buses to electric drivetrains. This funding has been available to licensed bus and coach operators, local authorities and community transport operators located in or that operate on routes within Scotland's cities identified for LEZ's and/or one of Scotland's AQMAs. The most recent round closed to new applicants on 26 August 2021, where successful applicants could access grant funding towards both primary and ancillary costs up to a maximum of £1,995,000 per bidder.

  Eligible vehicles were required to meet the following criteria:
    - buses and coaches operating under a Public Service Vehicle (PSV) operator licence or used for voluntary, community or other non-profit making purpose
    - less than 13 years old at time of application
    - a remaining service life of at least 5 years in Scotland
    - conforming to Euro IV or V emission standards from factory

A number of other grants and schemes are also available to individuals and businesses wishing to switch to more sustainable travel modes, which could be used to support those affected by the LEZ:

- **eBike Loan -** Interest-free loans to help individuals purchase a new electric bike, family cargo or ecargo bike, or adaptive bike. A wide range of models and adaptations are available including tricycles, tandems, hand cycles and recumbent cycles.
- **Used Electric Vehicle Loan -** The interest-free Used Electric Vehicle Loan offers up to £20,000 to cover the cost of purchasing a used electric car or up to £5,000 for the purchase of a used electric motorcycle or moped. The loan has a repayment term of up to five years.
- **Electric Vehicle Loan -** Interest-free loans of up to £28,000 to cover the cost of purchasing a new, pure electric vehicle or up to £10,000 to cover the cost of purchasing a new electric motorcycle or moped. The loan has a repayment term of up to six years.
- **Domestic charge point funding -** Energy Saving Trust and the Office for Zero Emission Vehicles currently offers applicants £350 towards the cost of a home charge point and Energy Saving Trust will provide up to £250 further funding on top of this, with an additional £100 available for those in the most remote parts of Scotland.
- **eBike Business Loan -** Interest-free loans of up to £30,000 are available to support organisations that want to reduce the carbon impact of their transport and travel arrangements with new and more efficient alternatives. The loan covers new pedal-assisted electric bikes (up to £3,000 per bike), new cargo bikes (up to £6,000 per bike) and new adapted cycles.
- **Low Carbon Transport Business Loan -** Interest-free loans of up to £120,000 are available to Scottish businesses. The loans can be used to meet the cost of a wide range of sustainable measures

to lower business transport carbon footprint including: pure electric vehicles cars (up to £28,000) and vans (up to £35,000) for each new electric vehicle, new electric motorcycles or scooters (up to £10,000 for each vehicle), new electric / plug-in hybrid HGVs, minibuses, coaches and buses (overall cap of £120,000).

- **Business charge point funding -** Funding to help organisations install electric vehicle (EV) charging infrastructure on their premises. Funding is currently available for charge points for sole use by occupiers, staff and visitors.
- **Switched on Taxi loan -** Interest-free loans of up to £120,000 are available to enable owners and operators of hackney cabs or private hire taxis to replace their current vehicle with an eligible ultra-low emission vehicle.
- **Used Electric Vehicle Loan for Business -** The interest-free Used Electric Vehicle Loan offers businesses in Scotland up to £20,000 to cover the cost of purchasing a used electric car, up to £20,000 for a used electric or plug-in hybrid electric van, up to £5,000 for a used electric motorcycle or moped.

3. Briefly describe public involvement in this proposal to date and planned

To ensure the LEZ is successful at achieving its objectives, two sets of consultation/engagement exercised have been undertaken with key stakeholders, both statutory and non-statutory.

Between May and July 2019, the Council publicly consulted on LEZ proposals in Edinburgh to explore key scheme aspects including: different boundaries at city centre and city-wide scales and various grace period options based on population and vehicle type and purpose. The consultation approach included an online survey (which received 2,793 responses), a series of sessions with key stakeholders, written responses from stakeholder groups and members of the public, engagement with primary school children and engagement with neighbouring local authorities.

Following on from initial consultation in 2019, the preferred LEZ scheme was advertised for a 12 week public consultation from 28 June to 21 September 2021. The consultation invited comment on key aspects of the LEZ scheme, including: overall scheme as proposed, city centre boundary, grace period approach and length, no local exemption approach and awareness of support funding available. An online questionnaire was presented to the general public and other stakeholders in 2021. The questionnaire received 4,976 individual responses. In addition to individuals who completed the questionnaire, 75 responses were received on behalf of organisations. An additional 26 written responses were received on behalf of organisations. Statutory stakeholders were approached directly and invited to comment on proposals, in accordance with the Transport (Scotland) 2019 Act. Multiple engagement workshops and meetings were hosted by the Council and written submissions received across all stakeholder groups.

Additionally, as part of the IIA undertaken in 2020, in-depth interviews were undertaken with business owners, business and trade representative organisations and community transport providers.

To provide input specifically to the IIA, meetings were held in May/June 2021 with representatives from the Edinburgh Access Panel and Inclusion Scotland, as well as Officers working on the Council's Poverty Action Plan.

4. Is the proposal considered strategic under the Fairer Scotland Duty?

Yes

5. Date of IIA

A full scoping meeting on the original proposals was held in 24/06/2019. As a considerable amount of time has passed since the previous IIA was carried out and changes have been made to the proposed scheme, a second meeting was held on 20/05/21.

6. Who was present at the IIA? Identify facilitator, Lead Officer, report writer and any partnership representative present and main stakeholder (e.g. NHS, Council)

Name	Job Title	Date of IIA training
Suzanne Hunter	**Transport Officer**	**01 Nov 2018**
Shauna Clarke	**Environmental Health Officer**	
Greg McDougal	**Transport Officer**	

7. Evidence available at the time of the IIA

Evidence	Available – detail source	Comments: what does the evidence tell you with regard to different groups who may be affected?
Data on populations in need	Census 2011 The National Records of Scotland 2017 and 2018 DfT, April 2019 Jacobs, Edinburgh Low Emission Zone Integrated Impact Assessment, 2020	The City of Edinburgh has one of the fastest growing populations of any city in the UK. Although the city has a lower share of its population over 65 years of age (12%), the wider city region has a significantly higher share (22%) than Edinburgh and Scotland (19%). Based on 2011 Census Data, the wards with the highest number of health conditions (including Deafness, Blindness, Physical, mental health conditions, learning disabilities etc.) were Portobello/Craigmillar and Liberton/Gilmerton wards. Both had 31% of their total reporting health conditions. The City Centre had the lowest proportion (22%). According to The National Records of Scotland 2017 mid-year estimate, 15% of inhabitants in

Evidence	Available – detail source	Comments: what does the evidence tell you with regard to different groups who may be affected?
		Edinburgh reported a limiting long-term health problem or disability that limited their day-to-day activities The total number of vehicles in the City of Edinburgh with Disabled Tax Code (Class code 78) was 7,000 and the total number of vehicles in the City classed as Disabled Passenger Carrying Vehicles were about 100. Higher proportion of disabled tax vehicles are present in Portobello/Craigmillar ward and Liberton/Gilmerton ward located along the south eastern side of Edinburgh.
Data on service uptake / access	Census 2011 Transport Scotland, 2019, Scottish Transport Statistics (No 32-37) Editions 2012 to 2018 Transport Scotland, 2019, Scottish Transport Statistics, 2018 (No 37) DVLA (2018). Number of licensed vehicles at the end of the quarter by bodytype, fuel type and estimated euro status, Edinburgh City UA. AECOM, 2014. Van travel trends in Great Britain, prepared for RAC foundations, RHA, Clean Air Zones and HGVs – factsheet (BVRLA,FTA, NFDA and RHA, Scottish Government, 2018, Businesses in Scotland Clean Air Zones and HGVs – factsheet, 2019 (BVRLA,FTA, NFDA and RHA) Transport Scotland, 2019, Scottish Transport Statistics (No 32-37) Editions 2012 to 2018) National Atmospheric Emissions Inventory (2018), Vehicle fleet composition projections	Car use in Edinburgh is the joint lowest of all Scottish cities. In 2010 of the 191,000 people living and working in Edinburgh, 63,500 commuted to work by car and a further 63,300 commuted by car from other local authority areas. LGVs are the fastest growing vehicle category in Scotland, up by 26% over the past ten years, to reach 294,000 vehicles in 2018. This trend is also evident across Great Britain where every tenth vehicle on the road is an LGV. Small enterprises represent over 90% of businesses in Edinburgh. 63% of companies rely upon vehicles, most likely LGVs, to deliver goods or drive to clients to provide a service. In the UK, 53% of LGVs are privately owned and 47% are commercially owned, however it is likely that many privately owned LGVs are also used for business purposes. For company-owned LGVs, most vehicle kms travelled are for collecting or delivering goods (35%), while for privately owned LGVs, most vehicle kms travelled are for travelling to and from work. On average LGVs are 6.6 years old in Scotland. The vast majority of LGVs (96%) are fuelled by diesel. The sectors that are most dependent on LGVs vehicles are construction; wholesale and retail trade; accommodation and food service activities; and transportation and storage. There are around 6,025 business across Edinburgh that fall within these sectors. Below is traffic survey data obtained in February 2020 for Euro VI vehicles or better (compliant vehicles); • HGVs: 76-95% Euro VI or better • Buses & coaches:

Evidence	Available – detail source	Comments: what does the evidence tell you with regard to different groups who may be affected?
	DVLA database on vehicles registered in the Edinburgh TTWA	61% operators - excluding Lothian Buses Lothian Buses commitment to be 100% LEZ compliant by the end 2021. • LGV: 48% Euro VI or better (increase from 7% in 2016) It is predicted that in 2023, the number of non-compliant vehicles in Edinburgh Travel to work area will be: • ~16,000 cars • ~3610 LGV • ~120 HGV • ~120 bus By 2029 it is predicted that all vehicle types will be compliant with current LEZ emissions standards due to natural fleet turnover, furthermore, for most types this is expected to be achieved by 2025. Transport Scotland has been monitoring transport trends during the COVID-19 outbreak. This information provides a snapshot of travel across main modes. For the period 19 - 25 April 2021, compared against a pre-pandemic baseline, we saw: • Walking journeys up by 15% • Cycling journeys up by 10% • Concessionary bus journeys down by 55% • Rail journeys down by 80% • Ferry journeys down by 75% • Air journeys down by 80% • Car journeys down by 20%
Data on socio-economic disadvantage e.g. low income, low wealth, material deprivation, area deprivation.	Scottish Index of Multiple Deprivation (SIMD)	Transport accessibility is lowest around the periphery of the city, for example, Niddrie, Baberton, Clermiston and Granton. Many of these are areas of high deprivation as ranked by the SIMD.
Data on equality outcomes	Hands Up Scotland Survey 2019: National Summary Report Transport Scotland, Transport and Travel in Scotland, 2017 Sustrans, Bike Life, Sustrans, 2019	A survey undertaken 2019, found that 25.5% of school pupils in Scotland stated they normally travelled to school using only private motorised mode of travel compared with 47.8% who normally use active modes. Women were more likely than men to walk or catch the bus to work and men were more likely to cycle to work or travel by rail. In Scotland twice as many men as women cycle once or twice a week for transport. In addition, people in lower income households were more likely to walk or take the bus whereas people in

Evidence	Available – detail source	Comments: what does the evidence tell you with regard to different groups who may be affected?
		higher income households were more likely to drive. 7.5% of commuters living in Edinburgh cycle to work with over 15.3 million trips made by bike in 2017. In the city black and minority ethnic (BAME) communities, women and over 65s are underrepresented when it comes to cycling.
Research / literature evidence	Yes	The Edinburgh LEZ is being progressed in close alignment with several strategies aiming to enhance placemaking and connectivity in Edinburgh, including: City Mobility Plan National Transport Strategy Strategic Transport Projects Review National Planning Framework Regional Transport Strategy Edinburgh City Vision 2050 2030 Sustainability Strategy City Plan 2030 Edinburgh City Centre Transformation
Public / patient / client experience information	An online survey Carried out in 2019 (2,793 responses received). An online survey carried out in 2021 (5051 responses received) Two series of sessions (undertaken in both 2019 and 2021) with key stakeholder including the representatives from the taxi and private hire car sectors, the bus and coach sectors, and with freight sectors though the Council's ECO Stars scheme Engagement with wider general stakeholder groups (including health and environmental, and wider interest groups, community councils, and residents). Written responses from stakeholder groups and members of the public. Four stakeholder workshops (attendees including the representatives from the taxi and private hire car sectors, the	Findings from the consultation in 2019 showed that cleaner air is important to all, but there were mixed views as to the suitability of the LEZ and to its specific aspects. General public and commercial audiences agree, albeit with differing priorities. For all however, vital questions to consider are the cost of LEZ compliance to them; the cost to life in Edinburgh (clean air, goods/services); and looking at a bigger, city and regional picture to tackle underlying issues (traffic flow, public transport, etc). In the 2019 questionnaire, the main issues voiced were worry about increased traffic and pollution in neighbouring streets/parks; the desire to make the area larger; and to include New Town/up to Ferry Road. Worries were voiced about the financial effect on businesses and individuals. Comments were mainly about considering exemptions, like motorbikes/scooters, buses/public transport, private cars, deliveries/ tradesmen Twelve percent of those who completed the 2021 online questionnaire said they had a physical or mental health condition or illness lasting or expected to last 12 months or more that limits their daily activities. Of those who stated they did, 17% were Blue Badge holders and 3% own a vehicle with adaptions for disabled users.

Evidence	Available – detail source	Comments: what does the evidence tell you with regard to different groups who may be affected?
	bus and coach sectors, and with freight sectors though the Council's ECO Stars scheme). Engagement with 60 primary school children Engagement with neighbouring local authorities in the South East Scotland region. Meetings were held in May/June 2021 with representatives from the Edinburgh Access Panel and Inclusion Scotland, as well as Officers working on the Council's Poverty Action Plan. Weekly Poll – Low Emission Zone (Blue Badge Exemptions), Disability Equality Scotland 2021	The 2021 consultation found that Support for the LEZ and its details is very mixed, but this appears to have less to do with the principle of being able to breathe better air, and more to do with the practical implications for people within and also travelling to the zone, as well as the specific practical details of the proposal. Similar concerns to those in the 2019 consultation were voiced. Results from the Weekly Poll – Low Emission Zone (Blue Badge Exemptions) show that an overwhelming majority of respondents believed that the Low Emission Zone exemption application for Blue Badge holders must be available in a variety of accessible formats. This will ensure that applications embed inclusive communication principles and are available in a format that matches the communication strengths and preferences of each individual. There was recognition that not all Blue Badge holders will be able to access an online application, due to factors related to digital exclusion. This includes lacking digital skills or confidence to get online, as well as limited resources and money to pay for devices or internet access. Respondents highlighted the importance of having a paper version of the application, which is also available in a variety of different accessible information formats, such as Braille, Easy Read, large text and plain text. A call centre was identified as another alternative for people who face digital exclusion, as well as the ability to complete a face-to-face application. A number of respondents believed that Low Emission Zone exemptions must align very closely with the existing Blue Badge application process.
Evidence of inclusive engagement of people who use the service and involvement findings	As above	As above
Evidence of unmet need	As above	As above
Good practice guidelines	Yes	The Transport (Scotland) Act 2019 The Low Emission Zones (Scotland) Regulations 2021 National Transport Strategy (NTS) Cleaner Air for Scotland (CAFS) Strategy

Evidence	Available – detail source	Comments: what does the evidence tell you with regard to different groups who may be affected?
		National Low Emissions Framework (NLEF) Inclusive Communication Hub: www.inclusivecommunication.scot
Carbon emissions generated / reduced data	Jacobs, Edinburgh Low Emission Zone, Revised Fleet Composition, Traffic Modelling Report, February 2021 SEPA, Air Modelling Results, March, 2021	Scottish Government is monitoring the impact of COVID 19 social distancing and lockdown actions, which includes air quality. Evidence will continue to be collected on carbon emissions/air quality by the Council and Scottish Government as lock down measures are relaxed. A series of transport modelling tests have been undertaken to assess the impact of the LEZ on travel patterns across the city. Outputs from this have been provided to SEPA to undertake supporting air quality impact analysis. Further detail can be found in the Transport Modelling Report by Jacobs and in SEPA's report on Air Modelling.
Environmental data	Scottish Government, Cleaner Air for Scotland: The Road to a Healthier Future, 2015 Public Health England, Estimating Local Mortality Burdens associated with Particulate Air Pollution, 2014. City of Edinburgh Council, Air Quality Annual Progress Report (APR) for City of Edinburgh Council, 2019 SEPA, The Clearer Air for Scotland – National Modelling Framework, Air Quality Evidence Report – Edinburgh, November 2018 City of Edinburgh Council, 2019 Air Quality Annual Progress Report (APR)	Poor outdoor air quality can result from contamination of the outdoor atmosphere by gaseous and particulate pollutants. Based on modelling, the estimated mortality burden on the population in Scotland in 2010 showed that there were around 2,000 premature deaths and a total of around 22,500 life years lost across the population which can be attributed to anthropogenic (man-made) fine particle pollution. In Edinburgh, this can be related to 205 premature deaths and 2,300 life-years lost. The Scottish Environment Protection Agency (SEPA) provided robust evidence of traffic pollution exceeding accepted levels in Edinburgh Edinburgh has five AQMAs due to NO_2 legal limit exceedances mainly due to road traffic; the sixth AQMA relates to fine particulates (PM_{10}) exceedance of the legal limit. These readings are recorded using monitoring stations around Edinburgh at different roadside placements (pavement level, lamppost, building façade etc). Road transport is primarily responsible for NO2 concentrations at the roadside. The Council's Air Quality Annual Progress Report in 2019, reported a continuing trend towards compliance with legal limits. However, exceedances remained across the city, with the Central AQMA having the highest concentration of sites that exceed legal limits.

Evidence	Available – detail source	Comments: what does the evidence tell you with regard to different groups who may be affected?
Risk from cumulative impacts		Cumulative impacts may come about as a result of the City Mobility Plan, Edinburgh City Centre Transformation and City Plan 2030 policies which are being developed in parallel with LEZ. Cumulative impacts will likely to be positive in relation to traffic and congestion management and active travel investment under City Mobility Plan and Edinburgh City Centre Transformation policies, and sustainable land use strategy as set out in emerging City Plan 2030. Cumulative impacts from this work will be included in due course once impact assessments of these policies/proposals have been undertaken.
Other (please specify)		
Additional evidence required		

8. In summary, what impacts were identified and which groups will they affect?

Equality, Health and Wellbeing and Human Rights	
Positive	**Affected populations**
The LEZ will discourage the most polluting vehicles from enter/exit/operating within the LEZ. This will reduce emissions and improve air quality and in turn have a positive effect on health on everyone, particularly of those most at risk of respiratory illness including older people/pensioners and children (including unborn children). This is the most significant positive impact of the LEZ and will have health and wellbeing benefits for a large population of residents, workers, and visitors to the area over a long period of time; therefore, the magnitude of the effect is substantial.	All, particularly children, pregnant women, disabled people and older people.
The LEZ is likely to encourage a modal shift from cars to public transport and active travel. This will result in air quality improvements, as well as benefitting the health of individuals from increased activity levels.	All
Reduction in vehicles within the boundary may improve access to services for those travelling by modes other than private car, including public transport or active travel	All, particularly relevant to those who are unemployed/on low income/people on benefits and those with mobility impairments who rely on public transport
Negative	
Bus operators may increase the price of bus tickets as a result of the increased costs to their operations arising from the need to replace or	Unemployed, people on benefits, single parents,

upgrade buses, so they are compliant with the LEZ. For some bus passengers the increase in price may make the journey unaffordable and result in them foregoing their journey. This may affect people's ability to engage in activities and access services or places of work, which in turn will affect their wellbeing/social activity. ***Mitigation:*** *This effect will not be applicable to holders of free travel passes including older people/pensioners, disabled and subsidised travel; therefore, the effect on most of the impacted population will be mitigated. The Council will continue to engage with bus operators to determine their proposed reactions to the LEZ. If bus operators make use of funding for upgrading and retrofitting vehicles (such as the Energy Savings Trust's BEAR retrofit fund), they may not have to increase the price of tickets. The funding options available will be clearly communicated to Transport Providers.*	homeless people, carers, part-time workers, students, young people, disabled people who rely on public transport, staff vulnerable to falling into poverty.
Bus operators may remove non-profitable routes in response to LEZ related costs to upgrade fleet. This may negatively impact those who rely on those services to engage in activities and access services or places of work, which in turn will affect their wellbeing/social activity. ***Further work/mitigation:*** *The Council will continue to engage with bus operators to determine their proposed reactions to the LEZ. If bus operators make use of funding for upgrading and retrofitting vehicles (such as the Energy Savings Trust's BEAR retrofit fund), they may not have to remove services. The funding options available will be clearly communicated to Transport Providers.*	Unemployed people, people on benefits, single parents, homeless people, carers, part-time workers, students, young people, disabled people, staff vulnerable to falling into poverty.
Non-English speaking people or people with low literacy/numeracy may experience negative impacts if they do not understand the implications of the LEZ. Impacts may affect permanent residents who don't understand the changes but it could also affect temporary overseas visitors who do not hold a British driving licence and are unable to speak English. The impact on overseas visitors is likely to be more prevalent when visitor numbers are higher for large cultural events. ***Mitigation:*** *The communications strategy will ensure that all impacted groups are reached where possible. Clear communications will be provided around LEZ implementation across different media in plain English, a range of languages as well as Braille. The Council also offers an Interpretation and Translation service, which provides interpreters and translations in different languages including British Sign Language. Equalities groups will be encouraged to disperse information on the proposals to their members.*	People with low literacy/numeracy, tourists, minority ethnic people (including non-English speakers).
People with a disability who do not use public transport or rely on carers who own a non-LEZ compliant vehicle and cannot afford to upgrade, may choose to forego their journey into the City Centre. This will potentially adversely affect their opportunity to access community and leisure facilities and have a negative impact on their social activity. ***Mitigation:*** *This impact can be mitigated through exemption for disabled tax class and Blue Badge holders. The LEZ support fund could also help disabled drivers and carers who are on means tested benefits (which includes Carer's Allowance and Disability Living Allowance) and meet the other 4 criteria to upgrade or retrofit their vehicle. Those affected could also apply for the electric vehicle loan to purchase a new or used compliant electric vehicle. Clear communications will be provided around the LEZ implementation across different media to raise awareness and ensure people have sufficient time to prepare.*	Disabled people and carers.

Minibuses providing community transport services (care providers, youth groups, school groups, elderly care providers) could be negatively impacted. Any impacts experienced by those providing care support for vulnerable people may also adversely affect those receiving care. ***Mitigation:*** *Community transport providers were eligible to claim funding from the Bus Emissions Abatement Retrofit (BEAR) programme. LGV owners can also apply for other schemes such as the Low Carbon Business Loans to purchase new electric vehicles. The Council will engage with Community Transport Providers to effectively communicate LEZ proposals and on potential impact to help them prepare for the change.*	Older people/pensioners, children, disabled people, care providers, youth groups, school groups.
People who use their own cars which are fitted with adaptive features (such as swivel chairs) to access community and leisure facilities within the City Centre may not be able to afford the cost of transferring the adaptive features onto LEZ compliant cars as the costs range between £500 to £30,000. This in turn potentially can adversely affect their social activity/ day to day activity. ***Mitigation:*** *Mitigated through exemption for disabled tax class and Blue Badge holders. Clear communications will be provided around the LEZ implementation across different media to raise awareness and ensure people have sufficient time to prepare. To reduce potential impacts on disabled drivers who do not qualify for a Blue Badge – consideration will be given to individual time limited exemptions from LEZ Regulations, in accordance with Section 17 of the Transport (Scotland) Act 2019, for people with disabilities not recognised by the Blue Badge Scheme, but who may be at a substantial disadvantage (under Section 20 of the Equality Act).*	Disabled people and carers.
Private Hire Vehicle and Taxi/Black cab owners on the H2S (Home to School) contract with City of Edinburgh Council to transport school children with a non-compliant LEZ vehicle may not be able to afford to upgrade their vehicle. This may impact on the H2S services offered by the Council and potentially affect school children. ***Mitigation:*** *The Council has an existing licensing regime to improve emissions standards of PHV and Taxi/Black cab which may help reduce the impact but a residual negative impact on children is possible. The Council will align this regime with the LEZ to ensure mitigation of potential impacts. Taxi owners can also make use of the funding for upgrading and retrofitting vehicles, or apply for the Switched on Taxi loan to replace their vehicle with an ultra low-emission vehicle. The funding options available will be clearly communicated to Transport Providers*	Children and disabled children
There is a potential for people who currently use their own cars to access leisure facilities for employment and recreation to be negatively impacted if they perceive there to be personal security concerns with public transport or active travel modes. As a result, passengers may forego their journey into the City Centre, particularly at night. ***Mitigation:*** *The LEZ Support fund could help these communities (if those affected are on means tested benefits and meet the other 4 criteria) to upgrade or retrofit their vehicle and provide Travel Better vouchers. Those affected could also apply for the electric vehicle loan, electric vehicle charging point grant or eBike loan (if affordable). Clear communications will be provided around the LEZ implementation across different media to raise awareness and ensure people have sufficient time to prepare.*	All, particularly minority ethnic people, disabled people, non-binary, Transgender, women, those involved in the criminal justice system, older people.
There are around 25 locations for religious congregation and places of worship that are located within the City Centre. If most of the visitors live	People with different religious belief/ faith

outside of the City Centre and are reliant on cars, their activity may be adversely affected if they forego their journey. ***Mitigation:*** *The LEZ Support fund could help these communities (if those affected are on means tested benefits and meet the other 4 criteria) to upgrade or retrofit their vehicle and provide Travel better vouchers. Those affected could also apply for the electric vehicle loan, electric vehicle charging point grant or eBike loan (if affordable). Clear communications will be provided around the LEZ implementation across different media to raise awareness and ensure people have sufficient time to prepare.*	
Users of the Travellers site and Travelling Showman sites in Edinburgh may own non-compliant vehicles and therefore will face fines when entering the LEZ. ***Mitigation:*** *This can be mitigated through exemptions as showman's vehicles are included within the national exemption of the LEZ implementation. There are no traveller sites in the boundary so access would not be impacted by the LEZ. Travelling Showman sites are sometimes situated in the city centre. To make the Travelling groups aware, targeted engagement will take place with the Travelling and Travelling showmen communities to make them aware of the proposals.*	Minority ethnic group (Travellers)
For some people it may not be financially viable to upgrade their vehicle. This may prevent people from having control of their social and work environment as well as reduce the equality of opportunity to access services (such as the Department for Work and Pensions, Citizens Advice Bureau etc) or employment opportunities. Some affected may not be in receipt of means tested benefits so would not be exempt. ***Mitigation:*** *The LEZ Support fund could help these communities (if those affected are on means tested benefits and meet the other 4 criteria) to upgrade or retrofit their vehicle and provide Travel Better vouchers. Those affected could also apply for the electric vehicle loan, electric vehicle charging point grant or eBike loan (if affordable).* *As part of the Council's Adaptation and Renewal Programs, the Wellbeing and Equalities priority includes an outcome to introduce 20 minute neighbourhoods. This would provide opportunities for people to access services, facilities and workplaces within a 20 minute walk or wheel of their homes which would reduce the need to travel by car.* *The City Mobility Plan includes a policy to review the city's bus network to improve inclusion, accessibility, integration and reduce congestion in the city centre. In addition, the ALEO reform proposals will create a single company to deliver future public transport services in Edinburgh, which would realise a number benefits for users. Improving public transport will encourage people to use it to access the services they need rather than private car.* *Clear communications will be provided around the LEZ implementation across different media to raise awareness and ensure people have sufficient time to prepare. Targeted engagement will take place with the affected communities.*	Low income households, people on benefits, unemployed, vulnerable families, older people, pensioners, low income carers, single parents and students.
Rural/semi-rural communities that require frequent access to LEZ areas (e.g. work, leisure, education) may be negatively impacted as a result of the financial implications of penalty charges or the cost of upgrade/replacement of their private vehicle.	Rural/semi-rural communities

Mitigation: *The LEZ Support fund could help these communities (if those affected are on means tested benefits incomes and meet the other 4 criteria) to upgrade or retrofit their vehicle and provide Travel Better vouchers. Those affected could also apply for the electric vehicle loan, electric vehicle charging point grant or eBike loan (if affordable). Clear communications will be provided around the LEZ implementation across different media to raise awareness and ensure people have sufficient time to prepare.* *The Council will ensure the LEZ project aligns with the Councils strategic policies on commuting. The City Mobility Plan includes a policy to review the city's bus network to improve inclusion, accessibility, integration, and reduce congestion in the city centre. In addition, the ALEO reform proposals will create a single company to deliver future public transport services in Edinburgh, which would realise a number of benefits for users. Improving public transport will encourage people to use it to access the services they need rather than private car. In addition, measures such as introducing a Mobility as a Service system and enhancing existing or introducing new park and ride/choose facilities to enable car commuters to access low emission public transport or active modes prior to entering a LEZ will assist.*	
Those who lease cars using the Motability scheme may find that their lease does not expire until after the LEZ scheme is implemented and their vehicle is not compliant. ***Mitigation****: The Council has engaged with the Motability scheme provider to establish the age of the vehicles for lease. The scheme provider confirmed that the majority of vehicles for lease are new or nearly new (the oldest vehicles are 5 years old) which means that all vehicles would be compliant with LEZ standards.*	Disabled people
The LEZ may result in the displacement of traffic to areas surrounding the boundary. In particular, concerns were raised in the 2021 consultation about Preston Street Primary being on the boundary and the impact on school children. The Edinburgh assessment work shows that there is potential for localised impact on some boundary streets e.g. Palmerston Place and Chester Street. Traffic on these streets would increase and the proportion of non-complaint vehicles would also increase. In turn this may result in increased traffic and a reduction of air quality of those areas which could impact those living on the boundary streets. Modelling analysis indicates that in the long-term (future scenario) the impact on Palmerston Place and Chester Street is not sustained. This is likely to be due to less non-compliant traffic needing to use the diverted route, as well as vehicle standards generally improving. ***Mitigation:*** *To reduce the impact of traffic displacement on the boundary streets, mitigation measures are being developed through the network management strategy and will include measures such as junction improvements, road changes, optimised signal and improved signing. These will be reviewed regularly to ensure LEZ demand is accommodated. Monitoring of air quality has been increased in the predicted worse affected areas and further consideration will be given to future monitoring as the Scheme decision is progressed. It is proposed that pavements are permanently widened around Preston Street Primary School for safety, active travel and to lessen LEZ impacts.*	All, particularly those living on the boundary streets suffering from chronic respiratory illness and young children

Environment and Sustainability including climate change emissions and impacts	
Positive	**Affected populations**
Implementing LEZ will improve vehicle standards which in turn will bring air quality improvements and health & wellbeing improvements, particularly those population groups which are most sensitive to poor air quality such as those suffering from chronic respiratory illness and young children.	All, particularly those suffering from chronic respiratory illness and young children.
Interventions that reduce local air pollution are also likely generate a positive effect on reducing factors contributing to climate change through reduced greenhouse gas emissions.	All
LEZ is likely to promote sustainable forms of transport via modal shift from cars to buses, shared cars, bicycles or walking, which in turn will have a positive impact on air quality. This may also have a positive effect on the health and well-being of people due to physical activity (cycling/walking) and exposure to outdoor spaces.	All
Quieter (alternatively fuelled) vehicles and reduced traffic flows caused by modal shift towards public transport and active travel, are likely to lead to a reduction in inner-city background noise. Lower noise pollution is anticipated to have health and productivity benefits.	All
There are potential benefits from a reduction in air pollution deposition on habitats through reduced traffic.	All
Fewer vehicular trips into urban areas covered by a LEZ and increases in the use of sustainable modes should provide opportunities to improve the quality of public spaces/public realm for non-car users.	All
Negative	
The LEZ may result in the displacement of traffic to areas surrounding the boundary. The Edinburgh assessment work shows that there is potential for localised impact on some boundary streets e.g. Palmerston Place and Chester Street. Traffic on these streets would increase and the proportion of non-complaint vehicles would also increase. In turn this may result in increased traffic and a reduction of air quality of those areas. Modelling analysis indicates that in the long-term (future scenario) the impact on Palmerston Place and Chester Street is not sustained. This is likely to be due to less non-compliant traffic needing to use the diverted route, as well as vehicle standards generally improving. ***Mitigation:*** *To reduce the impact of traffic displacement on the boundary streets, mitigation measures are being developed through the network management strategy and will include measures such as junction improvements, road changes, optimised signal and improved signing. These will be reviewed regularly to ensure LEZ demand is accommodated. Monitoring of air quality has been increased in the predicted worse affected areas and further consideration will be given to future monitoring as the Scheme decision is progressed.*	All, particularly those living on the boundary streets suffering from chronic respiratory illness and young children

A shift towards compliant vehicles would lead to redundant non-compliant vehicles being removed from the fleet. The scrappage of these surplus vehicles may cause environmental harm if not disposed of correctly (e.g. battery disposal). ***Mitigation:*** *Consult with local waste management facilities in addition to relevant stakeholders (e.g. Zero Waste Scotland) regarding waste management strategies to ensure vehicle components are disposed/recycled sustainably that minimise environmental impact.*	All

Economic including socio-economic disadvantage	
Positive	**Affected populations**
Increased economic activity for a number of sectors: second hand car traders, vehicle scrappage, vehicle leasing operators, active-travel distributors/repairers, and public transport operators through increased patronage.	Business communities, staff
Decreased traffic and cleaner atmosphere in the city may lead to higher quality of public spaces in the city. This could lead to more opportunities for businesses as more people are attracted to the city/city centre due to less polluted area becoming more attractive.	Business communities, staff
The development of the retrofitting and Low Emission Vehicle (LEV) industries as a result of the LEZ may create employment opportunities throughout the supply chain. Jobs involving the manufacture, maintenance, and sales/operation of lease or rental vehicles should be created.	Business communities, staff
A reduction in inner-city congestion will impact the efficiency of the public transport network. Reduced congestion should lessen delays, lower the time taken for public transport (i.e. buses) to complete their routes, and improving the efficiency of travel for both commuters and leisure seekers and encouraging mode shift.	All
Potential benefit to restaurants/cafes within LEZ areas due to improvements in air quality may encourage increase patronage.	Business communities, staff
Improved air quality may make areas within LEZs more pleasant places to work particularly for those working outdoors (e.g. market traders, street cleaners etc) including staff of restaurants/cafes with outdoor seating areas.	Business communities, staff
Negative	
Decreased access to the city centre due to the LEZ vehicle standards may cause certain members of society (lower income households) to be dissuaded from applying for a job in the city. This will have a negative effect on the size and diversity of the potential workforce in Edinburgh. ***Mitigation****: The LEZ Support fund could help these communities (if those affected are on means tested benefits and meet the other 4 criteria) to*	Unemployed, people on benefits, single parents, homeless people, carers, part-time workers, students, young people, disabled people, staff

upgrade or retrofit their vehicle and provide Travel Better vouchers. Those affected could also apply for the electric vehicle loan, electric vehicle charging point grant or eBike loan (if affordable). Clear communications will be provided around the LEZ implementation across different media to raise awareness and ensure people have sufficient time to prepare. Wider Council policies on parking are designed to dissuade people from parking in the City Centre and use more sustainable modes of transport.	vulnerable to falling into poverty.
Vehicle users, especially LGV, bus, and HGV, have relatively long turnover periods, requiring users to change earlier than anticipated. The need to purchase compliant vehicles and sell/scrap their non-compliant vehicle means that the users will incur additional financial cost. ***Mitigation:*** *Businesses can make use of schemes such LEZ Support Fund to dispose of non-compliant vehicles, the Low Emission Retrofit Fund to upgrade their existing vehicles, or the Low Carbon Transport Business Loan to purchase electric vehicles. CEC will engage with Businesses to effectively communicate LEZ proposals and on potential impact to help them prepare for the change.*	Business communities
Small and medium sized enterprises who rely on LGVs to deliver goods or drive to clients to provide a service could be disproportionately affected due to the level of non-compliance (non-compliance rates are 48%) and the economic impacts associated with the commercial-type vehicles sector. This may negatively impact business owners, particularly small enterprises which represent over 90% of business in Edinburgh. ***Mitigation:*** *Businesses can make use of schemes such LEZ Support Fund to dispose of non-compliant vehicles, the Low Emission Retrofit Fund to upgrade their existing vehicles, or the Low Carbon Transport Business Loan to purchase electric vehicles. CEC will engage with Businesses to effectively communicate LEZ proposals and on potential impact to help them prepare for the change.*	Business communities

9. Is any part of this policy/ service to be carried out wholly or partly by contractors and if so how will equality, human rights including children's rights, environmental and sustainability issues be addressed?

Where contractors are used, as part of the Council's procurement process due regard is required to be given to all equalities and right, environmental and sustainability impacts when undertaking work on behalf of the Council.

10. Consider how you will communicate information about this policy/ service change to children and young people and those affected by sensory impairment, speech impairment, low level literacy or numeracy, learning difficulties or English as a second language? Please provide a summary of the communications plan.

A range of communication tools will be used to reach out to all types of people regardless of their age, disability or language etc. Direct communication has been and will continue to be undertaken with stakeholders in the form of written communication, meetings, workshops and messages will be issued through the Council's social media channels. We will contact equalities organisations to distribute information to members. Formats will be designed to be understood by a range of population groups.

The Council also offers an Interpretation and Translation service, which provides interpreters and translations to people who cannot speak English, have problems understanding English, or have a sight or hearing loss. The translations and interpretations are available in a wide range of different languages including British Sign Language, Braille, Large print and Audio.

11. Is the policy likely to result in significant environmental effects, either positive or negative? If yes, it is likely that a Strategic Environmental Assessment (SEA) will be required and the impacts identified in the IIA should be included in this.

Strategic Environmental Assessment screening in 2019 highlighted the need for the LEZ to be assessed as a part of the wider Edinburgh City Centre Transformation programme and City Mobility Plan work. The SEA concluded that the cumulative impacts of introducing the LEZ along with other policies and strategies, such as the City Mobility Plan and Edinburgh City Centre Transformation, would generally be positive.

12. Additional Information and Evidence Required

If further evidence is required, please note how it will be gathered. If appropriate, mark this report as interim and submit updated final report once further evidence has been gathered.

13. Specific to this IIA only, what recommended actions have been, or will be, undertaken and by when? (these should be drawn from 7 – 11 above) Please complete:

Specific actions (as a result of the IIA which may include financial implications, mitigating actions and risks of cumulative impacts)	Who will take them forward (name and job title	Deadline for progressing	Review date
Continue to engage with bus operators to determine their proposed reactions to the LEZ.	George King	ongoing	January 2022
Continue to implement communications strategy to ensure that all impacted groups are reached where possible	George King	ongoing	January 2022
Provide clear communications around the LEZ implementation across different media to raise awareness and ensure people have sufficient time to prepare.	George King	ongoing	January 2022
Engage with Community Transport Providers to effectively communicate LEZ proposals and on potential impact to help them prepare for the change.	George King	ongoing	January 2022
Communicate clearly the funding options available to Transport Providers. This is also a national action for Transport Scotland.	George King	ongoing	January 2022

Specific actions (as a result of the IIA which may include financial implications, mitigating actions and risks of cumulative impacts)	Who will take them forward (name and job title	Deadline for progressing	Review date
Targeted engagement will take place with affected communities/population groups.	George King	June 2021	January 2022
Ensure appropriate mitigation measures are implemented and monitored, to reduce the impact of traffic displacement on the boundary streets	George King	ongoing	January 2022
Consult with local waste management facilities in addition to relevant stakeholders (e.g. Zero Waste Scotland) regarding waste management strategies to ensure vehicle components are disposed/recycled sustainably that minimise environmental impact.	George King	June 2021	January 2022

14. Are there any negative impacts in section 8 for which there are no identified mitigating actions?

No

15. How will you monitor how this proposal affects different groups, including people with protected characteristics?

The recent period of statutory engagement and consultation included engagement with the affected groups, as well as an online public consultation survey. During the engagement process, questions on equalities formed part of the public questionnaire to obtain views and to ensure a representative sample of the impacted populations were reached.

While working with Transport Scotland and the Energy Savings Trust, the Council will continue to monitor the uptake of LEZ Support Funds and other related retrofit funds.

16. Sign off by Head of Service/ NHS Project Lead

Name - Gareth Barwell

Date – 7/10/21

17. Publication

Completed and signed IIAs should be sent to strategyandbusinessplanning@edinburgh.gov.uk to be published on the IIA directory on the Council website www.edinburgh.gov.uk/impactassessments