

ABERDEEN CITY COUNCIL

COMMITTEE	City Growth and Resources
DATE	6 th February 2020
EXEMPT	No
CONFIDENTIAL	No
REPORT TITLE	Low Emission Zone (LEZ) Options
REPORT NUMBER	PLA/20/039
CHIEF OFFICER	Gale Beattie
REPORT AUTHOR	Will Hekelaar
TERMS OF REFERENCE	Purpose 6. Remit 2.2

1. PURPOSE OF REPORT

- 1.1 To obtain approval from Members to apply to the Traffic Commissioner for a Traffic Regulation Condition (TRC) for the purpose of reducing emissions from local bus services, and to undertake public and stakeholder engagement on options for a Low Emission Zone (LEZ) encompassing multiple vehicle types.

2. RECOMMENDATION(S)

That the Committee:

- 2.1 Agree that incremental improvements to the local public transport fleet is an appropriate first step in delivering a LEZ in Aberdeen;
- 2.2 Instruct the Chief Officer – Strategic Place Planning to apply to the Traffic Commissioner for a TRC requiring that 20% of all local bus services in Aberdeen city centre achieve Euro VI (or better) compliance by 31st December 2020; and
- 2.3 Instruct the Chief Officer – Strategic Place Planning to undertake public and stakeholder engagement on options for a city centre LEZ encompassing multiple vehicle types and report the outcomes of this process to the Committee in October 2020.

3. BACKGROUND

- 3.1 As was reported to the Committee in November 2019 ([PLA/19/421](#)), officers are working with partners to determine the optimum form and scope of a LEZ in Aberdeen in accordance with the commitment within the Scottish Government's 2017/18 Programme for Government that Scotland's four principal cities should have a LEZ in place by the end of 2020. Members were advised that the current focus of LEZ appraisal work is the City Centre Air Quality Management Area (AQMA) due to a higher number of nitrogen dioxide

(NO₂) exceedances recorded here compared to other AQMAs in Aberdeen (Figure 1, Appendix 1).

- 3.2 In December 2019, an updated air quality model was finalised by the Scottish Environment Protection Agency (SEPA) to reflect the impacts of the full opening of the Aberdeen Western Peripheral Route (AWPR). The SEPA model identifies emissions attributable to road traffic which can be broken down into vehicle types, and various scenarios can be tested within the model to identify the air quality impacts of different interventions. Various high-level traffic reduction scenarios previously assessed in the model suggested that, while the AWPR has reduced traffic in the city centre and on key corridors, and while the Council has plans to reduce city centre traffic further via ongoing delivery of the City Centre Masterplan (CCMP), Sustainable Urban Mobility Plan (SUMP) and the Roads Hierarchy, the level of traffic reduction likely to be realised in the short to medium term via implementation of these plans is unlikely to be sufficient to bring NO₂ emissions within acceptable limits without further interventions, such as the introduction of a LEZ.
- 3.3 Various scenarios have now been tested in the revised model, based around improved vehicle standards, to understand their impacts on air quality on key streets within the AQMA. A sample of the outcomes of these tests is shown in Table 1 in Appendix 1. The figures demonstrate that addressing one vehicle type in isolation does not solve Aberdeen's air quality problems, but that an initial focus on reducing emissions associated with bus movements within the city centre would achieve the quickest improvements, and that working with bus operators to bring more vehicles up to Euro VI standard or better (e.g. electric or hydrogen vehicles) would bring air quality benefits almost immediately. This message is reinforced when looking at the emissions contribution of buses on various city centre streets (Table 2, Appendix 1).
- 3.4 Regulations and Guidance for local authorities declaring LEZs is currently being developed by Transport Scotland, with a consultation paper launched in December 2019 to which Aberdeen City Council is preparing a response. Transport Scotland anticipates that the final Regulations and Guidance will be published around October 2020, enabling LEZs to be declared thereafter. The ability to have a formal LEZ applicable to multiple vehicle types approved and in place by the end of 2020 is therefore extremely challenging for any city.
- 3.5 One avenue that is open to local authorities to meet the Ministerial commitment and bring immediate air quality benefits is to apply to the Traffic Commissioner for Scotland for a Traffic Regulation Condition (TRC). Under section 7 of the Transport Act 1985 and section 42 of the Transport (Scotland) Act 2001, a local authority may ask the Traffic Commissioner to attach a TRC to a Public Service Vehicle Operator's licence in order to reduce or limit noise or air pollution. This is the route that Glasgow City Council progressed in order to implement the first LEZ in Scotland in 2018, via a TRC that required public transport vehicles to achieve 20% Euro VI compliance by the end of 2018, and increasing the proportion of compliance over five years, before introducing a LEZ applying to all vehicles from 2023. It is anticipated that a TRC of this nature would take 6-9 months to enact, including statutory consultation and there is a risk of objection from statutory consultees.

- 3.6 Euro engine standards adopted by the EU state acceptable limits for exhaust emissions for new vehicles sold in member states. They set out a series of EU directives which have been staging the progressive introduction of increasingly stringent standards over the past two decades. In this light, only vehicles of Euro VI for diesel (vehicles registered from September 2015) and Euro IV or better for petrol (vehicles registered from January 2006) are capable of delivering significant air pollution reduction in the problem areas in Aberdeen. It is, however, possible to retrofit diesel vehicles with exhaust modifications to bring them up to an acceptable standard and significant funding (approximately £8 million in 2019/20) is available to bus and taxi operators from the Scottish Government to enable this to take place.
- 3.7 It is therefore proposed that Aberdeen City Council, via a TRC, introduces a requirement that at least 20% of bus journeys per operator in the city centre must be of Euro VI standard or better by the end of 2020, and works with bus operators to increase Euro VI compliance year on year until such a time as a full LEZ applying to multiple vehicle types is operational.
- 3.8 This approach does put financial pressure on bus operators at a time when the public transport market is already fragile due to year on year patronage reduction. Reducing bus emissions, rather than removing or reducing bus services must be the objective of this approach. Bus services are obviously essential to Aberdeen's current and future transport infrastructure and a significant proportion of the city's population is reliant on the continuing health of the bus network, while current national, regional and local transport policy is focussed on encouraging more journeys to be undertaken by public transport and active travel. In order for a TRC to be approved by the Commissioner, the Council will be required to demonstrate that the proposal brings no adverse impacts upon the bus passenger.
- 3.9 Engagement with First Aberdeen and Stagecoach took place in January 2020 to understand their likely ability to comply with such a requirement and what the implications may be on services. The outcome of the discussion was that such an approach is an appropriate first step towards a full LEZ, and strikes a balance between being aspirational, and recognising the challenges placed on operators to comply within the timeframe. Both operators did raise points of concern which will require further consideration and investigation as the full details of the TRC are worked through, but in general intimated a desire to work in partnership with the Council to improve air quality and to continue to work with the North East Bus Alliance to deliver a more public transport-friendly city and city centre.
- 3.10 In terms of what the Council can do to support operators and ensure the ongoing health of the bus network through this transition period, ongoing delivery of the bus prioritisation measures identified in the CCMP, SUMP and Roads Hierarchy will be key. Addressing vehicle standards alone can only be one element of a longer-term solution to improving air quality, one that must be complemented by the continued delivery of these plans to reduce the volume of non-essential traffic in the city centre and allow residual traffic to move more freely. The further roll out of hydrogen buses also has a role to play and, should

the Council succeed in its efforts to bring 15 new hydrogen buses to the city in 2020, this will help operators achieve compliance in the first year and allow them to better prepare for future years. This would also represent successful partnership working between the Council and bus operators to work towards LEZ compliance.

- 3.11 In terms of options for a full LEZ applying to multiple vehicle types, transport consultants SYSTRA are currently supporting the Council with option generation, sifting, modelling and appraisal and it is anticipated that a shortlist of feasible options will be developed by spring 2020. These will then be subject to appropriate public and stakeholder consultation, resulting in the identification of a preferred option later in 2020 for detailed design and delivery.

4. FINANCIAL IMPLICATIONS

- 4.1 Funding support of £230,000 to progress feasibility and design of a LEZ has been awarded by Transport Scotland during 2019/20. The works described in this report are funded from this grant, while staff time for LEZ project management is currently funded by the EU project CIVITAS PORTIS. There will be financial implications arising from the implementation, management, maintenance and enforcement of any LEZ – officers are working with Transport Scotland and other partners in identifying these and these will be communicated to Members in a future report.

5. LEGAL IMPLICATIONS

- 5.1 ACC has a legal duty to meet statutory air quality objectives and improve air quality in its AQMAs through the implementation of the Air Quality Action Plan (2011) and associated initiatives.
- 5.2 The 1985 Transport Act and Transport (Scotland) Act 2001 enable local authorities to ask the Traffic Commissioner to introduce a TRC for a number of reasons, one of which is to reduce environmental pollution. This will be subject to appropriate scrutiny and may be subject to objections from statutory consultees.
- 5.3 Legislation enabling local authorities to declare and enforce LEZs is included within the Transport (Scotland) Act 2019. It is anticipated that the supporting Regulations and Guidance will be published during 2020.

6. MANAGEMENT OF RISK

Category	Risk	Low (L) Medium (M) High (H)	Mitigation
Financial	Continuing poor air quality could see increasing societal costs arising from	M	Continue with work to identify an optimum LEZ for

	<p>pollution-related health complaints.</p> <p>Care needs to be taken that any LEZ ultimately recommended for implementation supports, rather than harms, the economic vitality of the city centre.</p> <p>There may be risks associated with the costs of implementing, managing, maintaining and enforcing a LEZ.</p>		<p>Aberdeen and ensure options are subject to robust appraisal process.</p> <p>Continue to work with Transport Scotland and the other LEZ cities to determine the optimum approach to LEZ delivery, management, maintenance and enforcement.</p>
Legal	<p>There may be implications should air quality continue to breach legal limits and ACC is seen to be taking insufficient action to address this.</p> <p>Any TRC or LEZ may be subject to objections and/or require a formal hearing.</p>	M	<p>Continue with work to an identify optimum LEZ for Aberdeen, as part of a package of measures to address air pollution.</p> <p>Continue to work with stakeholders to understand and mitigate concerns around a TRC or LEZ.</p>
Employee	<p>Not taking steps to address air quality in the city centre could have negative impacts on the health and wellbeing of employees, many of whom work in the city centre.</p>	M	<p>Continue with work to identify an optimum LEZ for Aberdeen.</p>
Customer	<p>Not taking steps to address air quality in the city centre could have negative impacts on the health and wellbeing of those living, working in and visiting the city centre.</p> <p>Bus operators may respond to increasing financial pressures by reducing services into the city centre area or passing</p>	H	<p>Continue with work to identify an optimum LEZ for Aberdeen and ensure options are subject to robust appraisal process.</p> <p>Ensure appraisal is evidence-based, supported by air quality and traffic modelling forecasts.</p>

	<p>increased costs onto passengers via fare increases, both of which would have negative impacts on bus users.</p> <p>Care will have to be taken that any LEZ recommended for implementation limits scope for negative impacts on our customers, particularly in terms of accessibility of the city centre and the social and equalities impacts of potentially restricting certain vehicles from certain streets.</p> <p>Customer dissatisfaction may arise from the implementation of a LEZ and the final recommendations are unlikely to be universally popular. This could result in public / stakeholder opposition to recommendations and the need for a formal hearing.</p>		<p>Work with bus operators to identify and mitigate concerns associated with the introduction of a TRC, including taking advantage of opportunities to utilise available Scottish Government funding for retrofitting.</p> <p>Undertake detailed public and stakeholder consultation on proposals.</p> <p>Undertake Equalities and Human Rights Impact Assessment (EHRIA) of final recommendations.</p>
Environment	<p>Air quality is likely to remain poor for the immediate future without interventions.</p> <p>Care must be taken to ensure that air quality interventions do not result in unintended negative consequences such as moving the existing problem and/or exacerbating carbon emissions elsewhere.</p>	H	<p>Continue with work to identify an optimum LEZ for Aberdeen and undertake Strategic Environmental Assessment (SEA).</p>
Technology	<p>Issues may arise in terms of monitoring and enforcement of LEZs and these will become clearer</p>	M	<p>Continue with work to identify an optimum LEZ for Aberdeen and work</p>

	as a preferred option begins to emerge.		with Transport Scotland and the other Scottish cities to develop a coherent and consistent approach to monitoring and enforcement.
Reputational	<p>There are risks associated with a TRC should ACC be seen as deliberately targeting the bus industry and/or putting pressure on bus operators while not addressing general traffic in the short term. In a worst-case scenario this could see operators respond to increasing financial pressures by reducing services into the city centre area or passing increased costs onto passengers via fare increases (although it should be noted that these risks have not transpired in Glasgow). The Council could be seen as partly responsible for these consequences should they arise.</p> <p>Conversely, many groups are likely to view the short-term proposals outlined in this report as unambitious</p> <p>There are risks associated with a LEZ should ACC be portrayed as contributing to the decline of the city centre through restricting access. Conversely, not implementing a LEZ could result in reputational risk should ACC be seen as not making sufficient effort to improve air quality and</p>	H	<p>Work with bus operators to identify and mitigate concerns associated with the introduction of a TRC, including taking advantage of opportunities to utilise available Scottish Government funding for retrofitting.</p> <p>Continue with work to identify an optimum LEZ for Aberdeen and ensure options are subject to robust appraisal process.</p> <p>Ensure appraisal is evidence-based, supported by air quality and traffic modelling forecasts.</p> <p>Undertake public and stakeholder consultation on proposals.</p>

	the health and wellbeing of our citizens and visitors.		
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7. OUTCOMES

Local Outcome Improvement Plan Themes	
	Impact of Report
Prosperous Economy	Proposals support Key Driver 1.3 (<i>Improving investment into Aberdeen and Aberdeen businesses</i>) in that a clean and safe city centre is critical to maintaining a healthy economy for the city and wider region.
Prosperous People	Proposals support Key Drivers 3.4 (<i>Improving health and reducing inequalities</i>) and 11.1 (<i>Supporting vulnerable and disadvantaged people, families and groups</i>) in that there are strong links between poor air quality and a number of physical and mental illnesses and premature deaths resulting from such illnesses, with the more vulnerable members of society (children and the elderly) most affected. Proposals therefore support the delivery of Stretch Outcomes 3 (<i>95% of children (0-5years) will reach their expected developmental milestones by the time of their child health reviews by 2026</i>), 4 (<i>90% of children and young people will report that they feel mentally well by 2026</i>) and 11 (<i>Healthy life expectancy (time lived in good health) is five years longer by 2026</i>).
Prosperous Place	Supports Key Driver 14.1 (<i>Reducing emissions across the city through delivery of Aberdeen's Sustainable Energy Action Plan 'Powering Aberdeen'</i>) in that the primary purpose of a LEZ is to reduce emissions from transport.

Design Principles of Target Operating Model	
	Impact of Report
Customer Service Design	Will benefit all residents, businesses and visitors by creating a cleaner and city centre.
Workforce	Improved air quality in the city centre has the potential to support a healthier workforce.
Partnerships and Alliances	This is very much a partnership project with ACC working with bus operators to deliver improvements via a TRC in the first instance. The wider LEZ represents successful partnership working as the process in Aberdeen is being overseen by a group representing a range of internal interests and external partners, including Transport Scotland, Nestrans, Aberdeenshire Council, NHS Grampian and SEPA. ACC participates in a number of LEZ Working Groups with Transport Scotland and the other LEZ cities

	(Dundee, Edinburgh and Glasgow) to share knowledge and experiences and to develop a consistent approach to LEZ development and delivery throughout Scotland.
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8. IMPACT ASSESSMENTS

Assessment	Outcome
Equality & Human Rights Impact Assessment	Completed.
Data Protection Impact Assessment	Not required
Duty of Due Regard / Fairer Scotland Duty	Not applicable

9. BACKGROUND PAPERS

[Aberdeen Low Emission Zone Service Update](#) (December 2018)

[PLA/19/421 Low Emission Zone Objectives and Progress](#) (November 2019)

10. APPENDICES (if applicable)

Appendix 1 – Air Quality Modelling Outputs

11. REPORT AUTHOR CONTACT DETAILS

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Appendix 1 – Air Quality Modelling Outputs

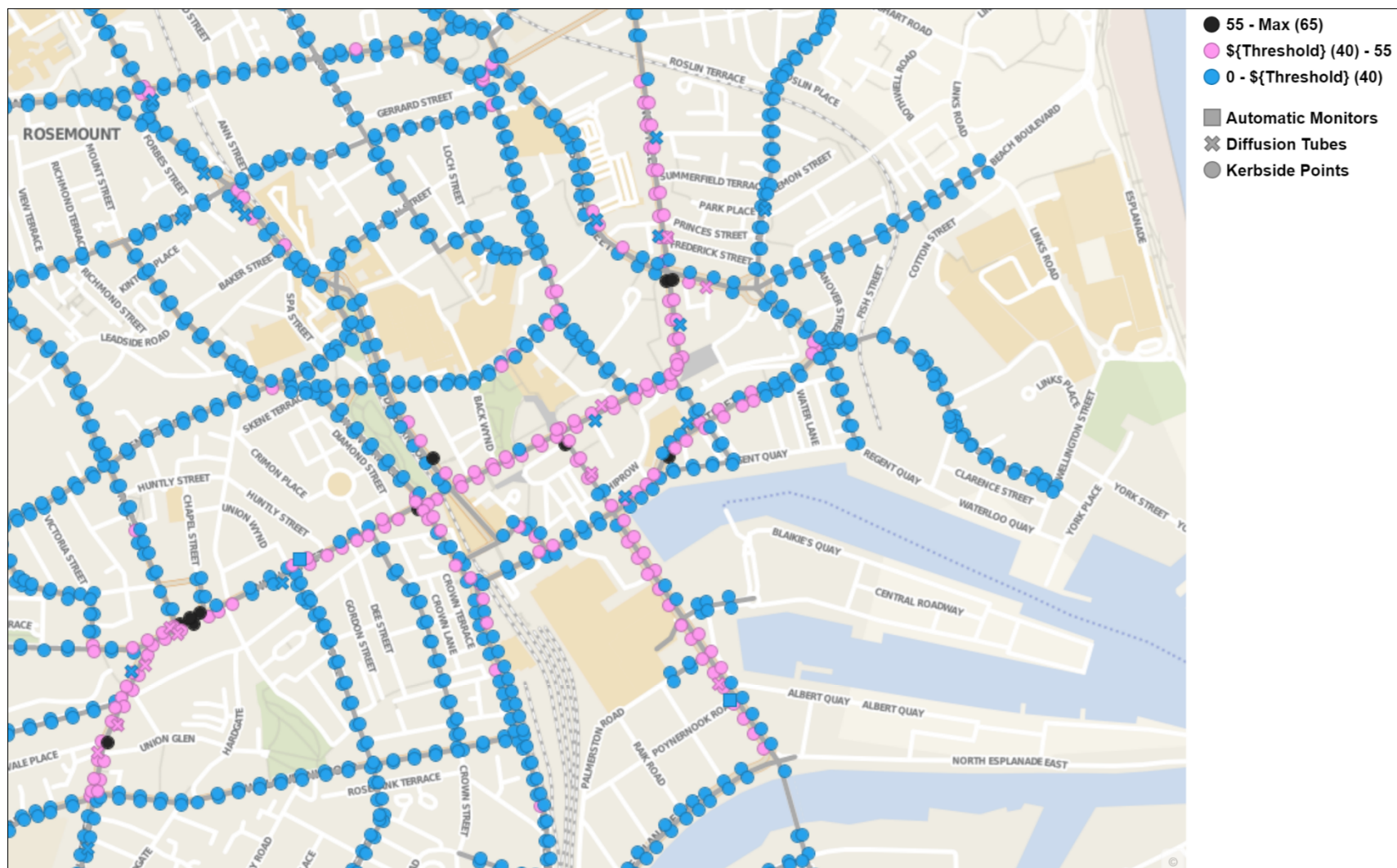


Figure 1: Modelled Roadside Annual Average NO_2 ($\mu\text{g}\cdot\text{m}^{-3}$) Concentrations at Roadside Points in the City Centre (2019 Base Run)

Note: National and EU threshold for NO₂ concentrations is 40 micrograms per cubic metre (40 µg/m³). Concentrations exceeding the 40 µg m⁻³ objective are shown in pink and those exceeding 55 µg m⁻³ are shown in black.

Monitor Location	Observed Data (2018)	Modelled Data													
		2019 Base Run	100% Bus Euro VI	100% Diesel car Euro VI	100% HGV Euro VI	100% LGV Euro VI	100% Petrol car Euro IV	100% Bus and Diesel car Euro VI	100% Bus and HGV Euro VI	100% Bus and LGV Euro VI	100% Bus Euro VI and Petrol car Euro IV	100% Bus, Diesel car and HGV Euro VI	100% Bus, Diesel car and LGV Euro VI	100% Bus, Diesel car, HGV and LGV Euro VI	100% Bus, Diesel car, HGV and LGV Euro VI; 100% petrol cars Euro IV
39 Market Street	46	42	37	41	41	42	42	36	36	36	37	35	35	34	34
469 Union Street	45	44	38	42	43	43	44	37	38	38	38	36	36	36	36
40 Union Street	44	45	38	44	45	45	45	37	38	38	38	37	37	36	36
468 Union Street	40	40	36	39	40	40	40	34	35	35	36	34	34	34	33
16 East North Street	40	40	39	39	39	40	40	38	37	38	39	36	37	36	36
226 Union Street	38	38	34	37	37	37	38	33	33	33	34	32	32	32	32

Table 1: Comparison of Observed and Modelled Annual Average NO₂ Concentrations for 2019 Base Run and LEZ Scenarios at five Diffusion Tube locations and the Automatic Monitor on Union Street

Note: HGV – Heavy Goods Vehicle; LGV – Light Goods Vehicle

	King Street	Union Street	Market Street	Bridge Street	Denburn Road	Union Terrace
Buses/coaches	36%	54%	19%	50%	19%	49%
Diesel cars	29%	25%	34%	29%	45%	28%
Petrol cars	4%	3%	5%	4%	6%	4%
HGVs	15%	7%	20%	7%	13%	7%
LGVs	16%	11%	21%	11%	17%	12%

Table 2: Emissions contribution of different vehicle types

Note: The above figures take account of the volume of different types of traffic on individual streets.